Kurikulum Merdeka: Optimization of Personal Abilities and Digital Literacy of Prospective Biology Teachers through Microteaching Practices

Nawawi*, Mustika Sari
Biology Education Study Program, IKIP PGRI Pontianak, Indonesia
*nawawi@ikippgriptk.ac.id

Abstract

Kurikulum Merdeka has changed the paradigm of education in Indonesia which requires prospective biology teachers, to have better personal abilities and digital literacy. This study aims to evaluate the effect of microteaching practices on the personal abilities of prospective biology teachers and digital literacy. This research uses qualitative methods, with purposive samples, where the samples used are eight prospective Biology teacher students from the Biology Education Study Program IKIP PGRI Pontianak for the 2022/2023 academic year who attended Microteaching lectures. The assessment is carried out in three stages, namely evaluation of lesson plan, evaluation of microteaching implementation, and evaluation of personal competence and digital literacy during microteaching. In addition, an assessment of students' digital literacy skills was also carried out. The research results showed an increase in the personal abilities of each prospective biology teacher student in planning learning according to the Kurikulum Merdeka format. Personal abilities can also be reflected in dressing, speaking, and behaving as a professional teacher. The results of the digital literacy assessment show that students have excellent abilities in utilizing digital technology for learning. The practice of microteaching has a significant influence on the personal abilities and digital literacy of prospective Biology teachers.

Keywords: Digital literacy, Kurikulum merdeka, Microteaching, Personal abilities.

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INTRODUCTION

Curriculum has changes to the Kurikulum Merdeka that have higher demands on teacher quality and competence. Conversely, prospective Biology teachers must have sufficient personal abilities and digital literacy to face the challenges of the Kurikulum Merdeka. In accordance with their natural talents, the application of Kurikulum Merdeka provides opportunities for students to learn more fun, stress-free, relaxed, and pressure-free (Rahayu et al., 2022). In line with Susilana et al. (2023), the presence of the new paradigm curriculum is a reconstruction of the previous curriculum, where students are expected to better understand the material presented while still paying attention to their human side.

At this time, teachers who teach in front of the class must master biology learning material but must master various techniques in managing learning in the

classroom so that it runs well. To prepare teachers who are skilled in teaching, the biology education study program organizes microteaching learning.

Microteaching is a complex effort that must be prepared by prospective teachers through practice or learning activities using simplified methods, media, or learning. This opinion is in line with Siregar (2021). Microteaching can strengthen teaching methods to improve pedagogy abilities and teaching skills. Prospective Biology teachers are expected to have various skills as provisions when teaching in schools. The skills that teachers must teach students to support learning in the 21st century such as; scientific literacy (Safrizal, Sudarmono, & Yulia, 2022; Solheri, Azhar, & Yohandri, 2022), creativity skills (Harris & de Bruin, 2018; Ummah, In'am, & Azmi, 2019), and digital literacy (Fernanda et al., 2020; Jamil et al., 2022).

As a biology teacher, mastery of biology subject matter is very important. Only with good mastery of the subject matter, it can provide appropriate explanations and guidance to students. Biology teachers should understand basic biological concepts such as cells, tissues, organs, organisms, ecology, viruses, and genetics. Biology teachers must develop effective learning strategies and methods so that students' practicum activities are interesting and useful. Other abilities that prospective biology teacher students must have include the personal ability to open lessons, close lessons, ask questions, manage classes, communication skills, and master technology (Nawawi, Trisianawati, & Karim, 2021) .

After participating in micro teaching practice activities, students are expected to be able to master skills, techniques, and theories in delivering learning well. Prospective biology teachers must have sufficient skills to master the required competencies through pre- and in-service training. This opinion is in line with Untari et al. (2018) which states that one form of preservice training for prospective teachers is through the formation of teaching skills, both in theory and practice taught through microteaching. Thus, basic teaching skills can be practiced through microteaching.

The development of digital technology and the ease of access to online information have an impact on improving the skills of teachers and students in digital literature. Meanwhile, Indonesia has been known as the country with the most internet users in the world, has two industries that are growing rapidly due to the outbreak of digital literacy (Perdana & Suswandari, 2021). On the one hand, quick access to information makes it easier for us to satisfy our desires and curiosities. Conversely, if we do not have the necessary digital skills, this will be detrimental to our lives. There are, of course, difficulties and opportunities with the advent of digital technology and access to knowledge (Fernanda et al., 2020). Therefore, the Indonesian government must consider the best strategy to deal with false news or information, hate speech, and intolerant behavior that is easily found on social media due to the relatively high use of the internet in the country. The ability to use media, communication tools, or digital networks to search, evaluate, use, create, and utilize information in a healthy, wise, intelligent, accurate, appropriate, and law-abiding manner in everyday life is known as digital literacy.

Personal abilities and digital literacy can affect the effectiveness of teaching prospective Biology teachers in the application of the Kurikulum Merdeka. Therefore, improving personal abilities and digital literacy is important to pay attention to in preparing prospective Biology teachers. Digital literacy can be interpreted as the skill of using digital devices in everyday life (Safitri, Marsidin, &

Subandi, 2020). Meanwhile Jamil et al. (2022) stated that digital literacy skills are needed by students in searching for information, working on assignments, and group discussions in biology learning. Digital literacy is a basic ability that students must have in the 21st century(Rachmatika & Fikri, 2023). These various opinions explain how important digital literacy skills are for students to master.

Microteaching practice is an effective method to improve the personal abilities and digital literacy of prospective biology teachers. Through microteaching practices, prospective teachers can train and test their personal abilities and digital literacy in dealing with controlled teaching situations. Although microteaching has long been used as a professional development method for aspiring teachers, little research has explored its effect on improving personal abilities and digital literacy in the context of the Kurikulum Merdeka. The research activities that will be carried out are in line with the IKIP PGRI Pontianak Renstra, namely the development of 21st century competencies. Based on this background, this study aims to determine the influence of microteaching practices in improving the personal abilities of prospective Biology teachers and digital literacy in facing the Kurikulum Merdeka.

RESEARCH METHOD

This research uses qualitative research methods by involving eight prospective students of Biology teachers of the Biology Education Study Program IKIP PGRI Pontianak for the 2022/2023 academic year who take microteaching courses. The assessment is carried out in three stages, namely evaluation of the lesson plan, evaluation of the implementation of microteaching, and evaluation of personal abilities during microteaching. In addition, an assessment of students' digital literacy skills was also carried out. Data analysis is done descriptively, where this analysis is usefuluntuk untuk menjabarkan data yang diperoleh. The research design drawing can be seen in Figure 1.

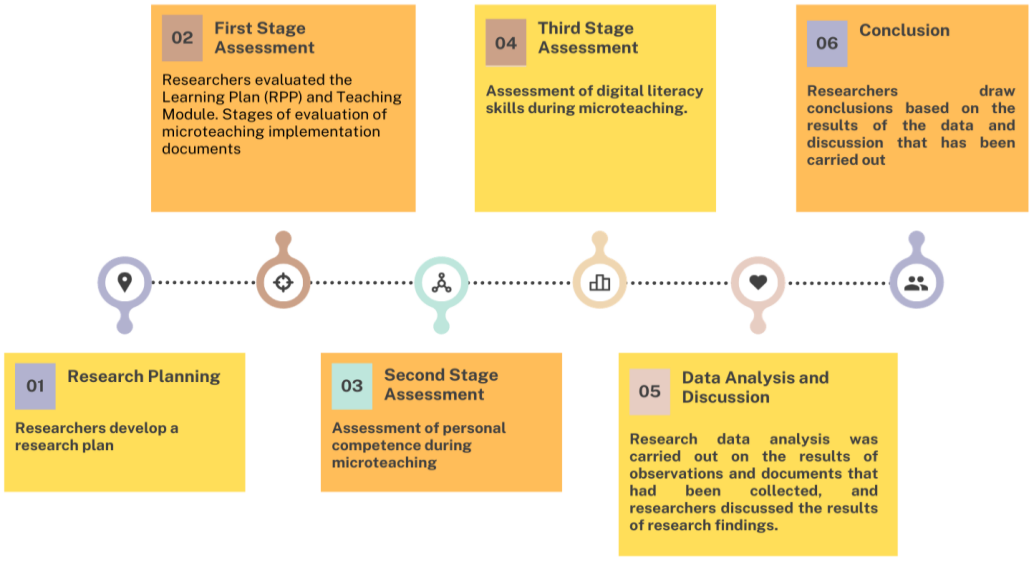

Figure 1. Research flowchart

On the contrary, personal abilities can be reflected in dressing, speaking, and behaving as a professional teacher. The results of the students' digital literacy assessment also reflect their excellent ability to utilize digital technology for learning. So, the practice of microteaching has a positive impact on the personal abilities and digital literacy of prospective Biology teachers.

RESULTS AND DISCUSSION

Microteaching is able to equip prospective biology teacher students of IKIP PGRI Pontianak with the ability to plan, implement and evaluate learning through direct practice, and end with feedback by lecturers given to 8 students. Assessment and feedback are carried out on the ability of prospective biology teacher students to plan learning in microteaching activities. In the assessment of microteaching planning, the stages that have been carried out include; (1) make initial observations, where at this stage researchers observe how prospective biology teacher students prepare lesson plans; (2) the second observation was made by researchers to find out how the ability of prospective biology teacher students in carrying out microteaching activities ranging from apperception activities to closing activities, (3) The third observation was made by researchers on students' personal competencies during microteaching activities. Researchers made 14 observations on microteaching practice activities that had been carried out online and online. The results of microteaching personal abilities can be seen in Table 1.

Table 1. Microteaching Personal Abilities Assessment

No	Student	Final Score			Average score
		LPA	MP	PAA	
1	1st student	80	84	80	81
2	2nd student	80	89	82	84
3	3rd student	82	90	92	88
4	4th student	80	89	84	84
5	5th student	82	92	92	89
6	6th student	80	86	90	85
7	7th student	82	92	92	89
8	8th Student	82	80	80	81
	Average assessment	81	88	87	85

Note: LPA= Microteaching implementation lesson plan assessment; MP= Microteaching practice assessment; PAA= Personal abilities assessment.

The completeness of the implementation lesson plan was; 1) the existence of a school identity; 2) The existence of competency standards, indicators of competency achievement, and learning objectives; 3) The existence of teaching materials; 4) There is an allocation of time; 5) The existence of learning strategies and methods; 6) Adanya langkah-langkah pembelajaran sesuai dengan pendekatan saintifik (mengamati, menanya, mencoba, menalar, mengomunikasikan). After participating in microteaching practice activities, students are able to make Learning Implementation Plans according to Kurikulum Merdeka standards. Based on Table 1, it can be seen that the average LPA creation value is 81. The grade

obtained is the final grade after the student makes various revisions to the Learning Implementation Plan that has been made by the student.

The assessment of the implementation of microteaching practices is; (1) Formulation of learning objectives which include; a) Conformity of learning objectives with competency standards; b) Conformity of learning objectives with basic competencies; c) Conformity of learning objectives with indicators of competency achievement. (2) The subject matter and description which includes; a) Suitability of the material to the learning objectives, b) Conformity of the material to the characteristics of student needs. (3) Selection of learning media which includes; suitability of learning media to the objectives, learning materials, and needs of students. (4) Scenarios and narratives of learning activities which include; a) Suitability of learning strategies and methods to student objectives, learning materials, and needs; b) Conformity of learning steps and procedures with basic competencies and time allocation.

The research findings of the implementation lesson plan that had been made by 8 students of the Biology Education Study Program at the first meeting were; 1) Students have not been able to arrange learning objectives properly and correctly in accordance with the format of the Kurikulum Merdeka; 2) The media created is not in accordance with the characteristics of the learning material to be taught, and still does not use varied media, where students only focus on power points, and cannot make students' worksheet properly; 3) Narratives in learning activities still use non-standard words, and many typos are found; 4) Students do not yet understand how to integrate learning syntax into a learning activity correctly. After providing input and improvement, at the final meeting students were able to understand how to make a good learning plan according to the Kurikulum Merdeka format, where the change was seen from the final grade with an average score of 81.

The implementation of microteaching can train prospective biology teacher students to make learning tools that are in accordance with the stage of achievement and development of students. Microteaching practices carried out can help students optimize mastery of various learning models and learning media that are in accordance with the characteristics of the material and the character of students. This opinion is in line with (Jannah, Firmansyah, & Nurfitri, 2023) which states that there are three important roles that must be owned by teachers in global digital-based education, including; 1) teachers as changemakers, 2) teachers as knowledge reformers, and 3) teachers as consultants. The application of Kurikulum Merdeka in biology learning can provide freedom of learning, where teachers and students can design the learning process according to student learning styles so that learning becomes more enjoyable (Rahmayumita & Hidayati, 2023).

The results of the second stage of observations that have been carried out by researchers to determine the ability of prospective students of Biology teachers IKIP PGRI Pontianak in carrying out microteaching activities ranging from apperception activities to closing activities obtained varying final scores. This is due to differences in the ability to perceive, Vary activities and discuss. carried out in microteaching practice activities. Variations of learning through simple practicum in microteaching learning can be seen in Figure 2.

The findings obtained in the practice of microteaching carried out by students of the Biology Education Study Program are; 1) Students use various learning

models in microteaching practice, 2) Students are able to stimulate students to pay attention to the material delivered through the use of original media such as the use of nail plants, 3) Students are also able to apply simple practicum in class using equipment and materials that have been prepared before microteaching activities.

Figure 2. The uses of simple practicum in microteaching practice

Personal competence observed during microteaching activities obtained excellent results, as seen from the neatness of students in dressing as prospective teachers. Students of prospective biology teachers have been able to string and compose words that are in accordance with conditions and have been able to behave, behave and behave that reflect professional teachers. Students do not seem rigid in teaching, and have the ability to control themselves in a variety of different learning situations and conditions. Students have also been present on time in the implementation of microteaching, where students always arrive early to prepare the facilities and infrastructure of microteaching practice before the activity begins.

Microteaching practices followed by prospective biology teacher students show very good results, where it can be seen that students are able to express opinions, accept criticism, suggestions and opinions given by lecturers and colleagues. Students have been able to compile and communicate orally and in writing through whatsapp messages politely to their colleagues and microteaching supervisors. Students are also seen helping each other and working together before the activity begins, so that microteaching activities run on time and smoothly.

Digital literacy is based on four digital literacy skills, namely; 1) basic internet skills, 2) the ability to find information sources, 3) the ability to obtain information sources, and 4) the ability to use information effectively (Nahdi & Jatisunda, 2020). The results of the assessment of the digital literacy questionnaire of microteaching students can be seen in Figure 3.

The preparation of a learning plan for microteaching practices carried out by students initially experienced obstacles in formulating learning objectives in accordance with the format of the Kurikulum Merdeka. But after getting input and improvement, they were able to understand how to make a good lesson plan. The final result with an average score of 81 showed a significant improvement in this

ability. This shows students' awareness of the importance of formulating learning objectives in accordance with competency standards and competency achievement indicators. The results obtained are in line with the problems faced by Madrasah Ibtidaiyah teachers in schools, who also experience obstacles in compiling Kurikulum Merdeka teaching tools in the form of Teaching Modules and Project Modules for Strengthening Pancasila Student Profiles (Nurhayati, Emilzoli, & Fu'adiah, 2022).

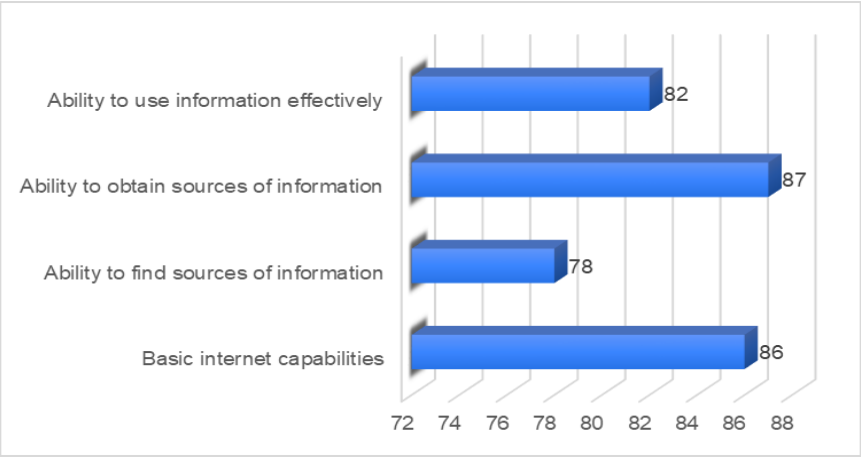

Figure 3. Microteaching students' digital literacy skills

Microteaching activities carried out by prospective Biology teacher students show variations in their abilities. There are students who get good grades, some who only get good grades. This is influenced by students' ability to make perceptions, variety of activities, and the ability to manage discussions in different Microteaching activities between individuals. From the results of the research conducted, it is known that the importance of developing material delivery skills effectively and attractively for students using various methods and media. Meanwhile Reddy (2019) stated that microteaching is real teaching but focuses on developing teaching skills such as; lesson planning, recognition skills, presentation and explanation skills, stimulus variation skills, and use of appropriate audio-visual aids. So that the skill of varying in the Kurikulum Merdeka is very necessary in carrying out differentiated learning in the classroom.

Personal abilities of learners that has been demonstrated through the skills of dressing, speaking, and behaving as professional teachers. Students practicing microteaching also have the ability to control themselves in various learning situations. Punctuality and preparation of infrastructure facilities show the seriousness of students in taking on the role of teachers. Microteaching practices carried out are also able to train communication skills, critical thinking, and expressing opinions politely in discussion activities. Prospective biology teacher students also show good cooperation with fellow students and microteaching supervisors.

Digital Literacy showed good results, where every aspect scored more than 75. Digital literacy is seen when students carry out micro-teaching practices using learning media, and in the collection of teaching modules that are in accordance with the guidelines in the Kurikulum Merdeka. According to Safitri et al. (2020) Digital literacy is a person's competence in using digital media in searching,

utilizing, processing, packaging, evaluating and disseminating information correctly, wisely and responsibly. This opinion is in line with Silvester et al. (2022) which states that in the era of technology and online learning, teachers are expected to have professional competence and digital literacy skills.

Students who take part in microteaching look serious in preparing themselves to become qualified teachers, seen in personal abilities and mastery of digital literacy where prospective teacher students have been able to use various media, and are able to make good learning tools, including choosing learning models that are relevant to the Kurikulum Merdeka. This opinion is in line with Safitri et al. (2020), creative biology teachers should be able to make PBL-based e-modules on coordination system material which is still considered difficult because the material is quite broad and difficult to visualize to make it easier student to study. The Kurikulum Merdeka also emphasizes the formation and strengthening of students' pancasila character, the development of students' skills related to critical thinking skills, problem solving and the ability to communicate and work together (Wiryanto & Anggraini, 2021). So it can be said that the Kurikulum Merdeka can optimize the potential of teachers in developing student character through various learning activities.

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CONCLUSION

Overall, the results of this study show positive developments in students' abilities in digital literacy, learning planning and implementation. However, there are several aspects that still need improvement such as the development of varied learning media and increased ability to formulate better learning objectives. By identifying these weaknesses, microteaching lecturers can provide better support and training to prospective biology teacher students to be ready to face the challenges of becoming teachers in the future. The results of this study confirm that the experience of microteaching practice has a significant influence on the competence of prospective Biology teacher students, both in terms of learning planning, personal abilities, and digital literacy. Therefore, further attention needs to be paid to the development of these skills in order to improve the quality of education in the future.

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