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# Training of Kurikulum Merdeka Teaching Module Using Experiential Learning Cycle in Physics MGMP

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***ABSTRAK***

*Sebagian besar guru Musyawarah Guru Mata Pelajaran (MGMP) Fisika mengalami kesulitan dalam memahami pembuatan modul ajar Kurikulum Merdeka dan masih bergantung pada rencana pembelajaran dari Kurikulum 2013. Hal ini menghambat implementasi kurikulum baru yang dirancang untuk meningkatkan kualitas pengajaran. Penelitian ini bertujuan untuk menganalisis modul pengajaran kurikulum merdeka menggunakan siklus experiential learning di mgmp fisika. Penelitian ini menggunakan metode penelitian kualitatif-deskriptif dengan desain penelitian partisipatif. Subjek penelitian melibatkan 15 guru fisika dari MGMP yang berpartisipasi dalam pelatihan selama dua hari, dengan total 16 jam pelajaran. Data dikumpulkan melalui observasi, wawancara, dan angket, dengan instrumen berupa panduan wawancara dan kuesioner. Analisis data dilakukan menggunakan metode analisis tematik. Hasil penelitian menunjukkan bahwa 88% peserta menganggap materi yang dibahas sangat penting, dan 90% peserta menyatakan sangat puas dengan metode pelatihan. Simpulan dari penelitian ini adalah bahwa pelatihan efektif dalam meningkatkan pemahaman dan keterampilan guru dalam menyusun modul ajar yang relevan dengan Kurikulum Merdeka. Implikasi penelitian ini adalah perlunya pengembangan program pelatihan berkelanjutan untuk mendukung implementasi kurikulum baru dan meningkatkan kualitas pendidikan secara keseluruhan.*

**ABSTRACT**

Most of the Physics Subject Teacher Conference (MGMP) teachers need help understanding the making of the Merdeka Curriculum teaching module and still depend on lesson plans from the 2013 Curriculum. This hinders the implementation of the new curriculum designed to improve teaching quality. This study aims to analyze the independent curriculum teaching module using the experiential learning cycle in the physics MGMP. This study uses a qualitative-descriptive research method with a participatory research design. The research subjects involved 15 physics teachers from MGMP who participated in the two-day training, totalling 16 lesson hours. Data were collected through observation, interviews, and questionnaires, with instruments in the form of interview guides and questionnaires. Data analysis was conducted using the thematic analysis method. The results showed that 88% of the participants considered the material discussed very important, and 90% expressed great satisfaction with the training method. This study concludes that training is efficacious in improving teachers' understanding and skills in developing teaching modules relevant to the Merdeka Curriculum. The implication of this research is the need for continuous development of training programs to support the implementation of the new curriculum and improve the overall quality of education.

## 1. INTRODUCTION

Law on Teachers and Lecturers Number 14 of 2005 in Article 8 states that the competencies that teachers must have are pedagogical competence, personality competence, social competence, and professional competence. Of the four competencies that must be possessed, one of the core competencies that teachers must possess is being able to organize educational learning activities and develop learning materials that are taught creatively. The government's attention to the implementation of education and teaching is not only due to the constitutional demands of the 1945 Constitution, but also because

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education is a basic human need (Ady, 2022; Sujana, 2019). Education aims to help students to enter a condition of social life, in which case every level and educational institution will strive to educate students so that they can become useful members of society. In every activity or activity education through teaching will definitely not be separated of the existence of several factors that can support these educational activities. In this regard, we need to know that one of the tools to achieve educational goals is the curriculum (Chiu & Chai, 2020; Gouëdard et al., 2020). The learning process in class will be successful if the teacher is serious in organizing the learning process so that goals can be achieved. Teachers have the obligation to provide appropriate, sufficient, and varied learning resources so that students are able to master the material both in terms of knowledge, attitudes, and skills according to the learning objectives that have been formulated by the teacher (du Plessis, 2020; Suchyadi et al., 2020).

Teaching modules also consider what will be learned with clear learning objectives. Of course, the basis for development is also long-term oriented. A teaching module is a tool that contains learning plans, worksheets, and assessments to help direct the learning process to meet Capaian Pembelajaran (CP) (Kemendikbudristek, 2022). Teachers also need to know and understand the concept of teaching modules with the aim of making the learning process more interesting and meaningful (Khoiriyah et al., 2023; Setiawan et al., 2022b). This teaching module was prepared after a diagnostic assessment was carried out so that it is expected to suit the needs of students, and be able to optimize the potential of educational human resources, namely teachers to be able to increase their creativity in the learning process as 21st century competency demands (Maulinda, 2022; Nesri & Kristanto, 2020). This is because learning readiness influences student learning outcomes (Maryam et al., 2022; Setiawan et al., 2022b). However, in reality, most teachers have not been able to develop appropriate teaching modules. This is based on the results of interviews with several physics teachers at MGMP Karawang, West Java who said that they had not been able to prepare teaching modules due to a lack of knowledge about the independent curriculum, a lack of skills during workshops or seminars organized by the education department because the workshops or seminars were generally only theory-based yet practice-based.

Kurikulum Merdeka is a curriculum with diverse intracurricular learning, where the content will be optimized so that students have sufficient time to understand a concept (Fauzan et al., 2023; Maulida et al., 2024). An independent curriculum is interpreted as a learning design that provides opportunities for students to learn calmly, relaxed, fun, stress-free, and pressure-free to show their natural talents (Purnama, 2023; Sonzarni et al., 2022). A learning design that is enjoyable for students must of course be balanced with the teacher's ability to create learning scenarios. The learning scenario from the previous curriculum to the present has undergone significant changes, the aim of which is actually the same, namely to make students active, creative, and learn in a pleasant atmosphere without the burden of being expected to have the ability to develop teaching materials in accordance with existing mechanisms by paying attention to the characteristics and social environment of students. Learning scenarios in the Kurikulum Merdeka are usually called teaching modules. Kurikulum Merdeka teaching module is a substitute for lesson plans whose format is varied and includes learning material or content that is based on learning (Indarwati & Rahmawati, 2023; Kusumawati, 2024). Teaching modules have an important role in developing students' 21st century skills (Nazifah & Asrizal, 2022; Zakiyah & Sudarmin, 2022). A part from being a source of independent learning for students, teaching modules have a key role in helping teachers design their learning. When the design of learning activities in a module is based on the development of 21st century skills, these activities will have the potential to be applied in learning (Asrizal et al., 2022; Kusmaharti & Yustitia, 2022). Currently, Kurikulum Merdeka teaching module is considered a crucial tool for the smooth implementation of learning with new modes or paradigms, especially if it is linked to the transformation of the industrial and digital revolutions (Faisal Nursamsi & Kuntoro, 2023; Setiawan et al., 2022a). Teaching modules are arranged according to phases or stages of development learners.

Physics is a branch of natural science that requires understanding through observing objects rather than memorizing, so it is close to everyday life (Saputra & Mustika, 2022; Sholahuddin & Admoko, 2021). Physics is a science that contains facts, concepts, and principles based on human sense observations regarding natural phenomena (McComas, 2020; Siponen & Klaavuniemi, 2021). Physics learning objectives including forming a religious attitude through physics by realizing the order and beauty of nature and glorify the greatness of God, foster integrity and an attitude of honesty and diversity global, deepening understanding of the consistent physical principles of the universe so that have critical thinking skills complemented by quantitative reasoning skills, and also have a scientific attitude and develop curiosity to solve problems. However, in reality students often think physics is a difficult subject because there are so many things formula for solving it (Bancong & Song, 2020; Nanmumpuni & Retnawati, 2021). As a solution, it is necessary to develop innovative and practical teaching modules to help teachers implement the Merdeka Curriculum. One approach that can be applied is the Experiential

Learning Cycle learning model, which activates students to build knowledge and skills through direct experience (Bancong & Song, 2020; Habib et al., 2021). Previous research shows that teaching modules developed based on Experiential Learning principles can improve students' 21st-century skills, such as creativity, communication, and collaboration (Aulia, 2022; Latorre-Cosculluela et al., 2021). This research offers novelty by developing an Experiential Learning Cycle-based physics teaching module adapted for the Merdeka Curriculum. This novelty is vital because few studies combined the Experiential Learning model with the development of teaching modules for the Merdeka Curriculum, especially in the context of physics learning at the secondary school level. The urgency of this research lies in efforts to overcome the gap between expectations and reality in preparing teaching modules, which are expected to improve the quality of physics learning in schools. This study aims to develop and test the effectiveness of the Experiential Learning Cycle-based physics teaching module in improving teachers' ability to compile teaching modules that are in accordance with the Merdeka Curriculum and improve student learning outcomes in physics learning. This study aims to analyze the effectiveness of developing a physics teaching module based on the Merdeka Curriculum using the Experiential Learning Cycle approach among physics teachers who are members of the Physics MGMP in Karawang Regency, West Java. This study will evaluate the extent to which the developed module can improve teachers' understanding of the concept of the Merdeka Curriculum and their ability to implement the Experiential Learning method in the physics learning process. The method used includes a series of training activities consisting of providing comprehensive material on the Merdeka Curriculum and the Experiential Learning Cycle and intensive assistance in preparing and implementing teaching modules in the classroom. This assistance aims to ensure that teachers understand the theory and apply it in a natural learning context.

## 2. METHOD

This research uses a quantitative approach with an experimental design. It aims to measure the effectiveness of training in making teaching modules for the independent curriculum through process and outcome evaluations conducted before and after training (Fadli, 2021; Midoni et al., 2022). This experimental design allows researchers to see changes in participants after they receive interventions in the form of training and guidance. The subjects of this study were 15 participants involved in the training on making teaching modules for the independent curriculum. Participants consist of teachers and educators interested in improving their competence in developing teaching modules per the independent curriculum. They were purposively selected based on the criteria of involvement in the teaching process in educational institutions. The forms of activities carried out in the training are presentation of material about kurikulum merdeka teaching modules, understanding, and questions and answers about how to make teaching modules, such as modules and the process of making them which will be carried out in early May 2024. The procedures for implementing the activities are workshops and training on kurikulum merdeka teaching modules. The procedures for implementing the activities are workshops and training on kurikulum merdeka teaching modules, assistance in implementing teaching module training, and reflection on the results of training & mentoring on teaching module training.

Meanwhile, the method used in this service is 1) Lecture, the material provided is an understanding of teaching modules, the flow of making teaching modules, and context; 2) Discussion, on each material presented, participants can dialogue and discuss with the service team starting from analyzing Standar Kompetensi (SK), Kompetensi Dasar (KD), and Indikator, determining the context to be used, and creating teaching modules; 3) Guidance and Practice, 15 participants were asked to create teaching modules according to the specified context. The teaching module created is a requirement to obtain a participant certificate. The evaluation plan for training activities is carried out before and after the training process. Process evaluation is related to participant attendance, enthusiasm for participating in the training, and cooperation. Process evaluation is carried out during the training. Process evaluation is carried out at the end of each training activity session. Scoring was carried out using a Likert Scale and analyzed descriptively. The implementation of this activity program was declared successful because the results of the process and product evaluation were classified as good. The data in this research/training is the numerical result or percentage of the answers above questions embedded in the questionnaire that has been distributed by the team to the participants. Data collection was carried out using a questionnaire distributed to training participants. This questionnaire was designed to measure the participant's level of satisfaction with the training, including aspects such as understanding the material, the flow of teaching modules, and the context of their application. The validity grid of the questionnaire instrument comprises indicators such as the accuracy of the material (content validity), conformity with the training objectives (construct validity), and consistency of the results obtained (reliability). A Likert scale was used for assessment, and answer options ranged from Dissatisfied (TP), Less Satisfied (KP), Satisfied (P), and Very

Satisfied (SP). The collected data were analyzed descriptively using content analysis techniques. This analysis involved calculating the frequency and percentage of participants' answers to each question in the questionnaire. The results of this analysis were then used to assess the success of the training based on changes in participants' level of satisfaction and understanding before and after the training. The results of the process and product evaluations showed the success of the training when classified in the excellent category.

## 3. RESULT AND DISCUSSION

### Result

Community partnership service activities carried out at Physics MGMP Karawang, West Java. The training activities were carried out for 2 days, namely 01 to 02 May 2024 from 08.00 – 15.00 WIB. The presenter delivered the material shown in Figure 1.

**Figure 1**. Speaker 1 Delivers Material

On the first day, activities were carried out in five stages. First, opening of activities training. The opening was carried out by the Deputy Chair of Physics MGMP Karawang, West Java and Chair of Department of the Physics Education UHAMKA. Second, a general presentation of the kurikulum merdeka teaching modules. Third, group division based on physics focus. Fourth, identify the Capaian Pembelajaran for each subject. Fifth, preparing Tujuan Pembelajaran, Alur Tujuan Pembelajaran, and Alokasi Waktu Pembelajaran. Activities in the second session, namely preparing teaching modules containing CP, TP, ATP, learning time allocation, and learning activities. In compiling teaching modules, training participants are accompanied by a facilitator who is competent in each subject delivered by the second presenter shown in Figure 2 and Figure 3.

**Figure 2**. Delivery of the Second Material

**Figure 3**. Participants Listen to Training Material

The second day's activities, namely preparing teaching module attachments in the form of teaching materials, LKPD, evaluation sheets, learning media, and assessment instruments. Completed preparation attached to the teaching module, the service team distributed response questionnaires to training participants. The questionnaire consists of seven indicators, namely the participants' experience in taking part in training in preparing teaching modules, ease of understanding the material, clarity of the presenter's delivery. This is shown in Figure 4.

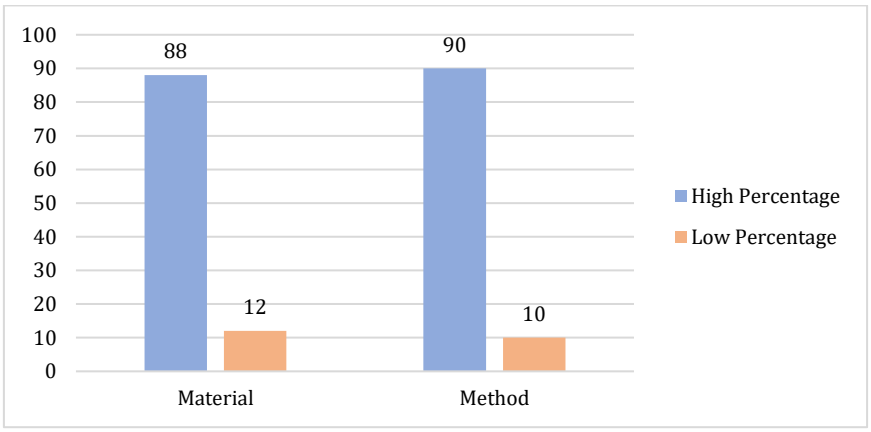


**Figure 4**. Evaluation of Training Teaching Physics Module with Kurikulum Merdeka

From the graph in Figure 4, it can be seen that the training material received 88% very important and 12% said it was important, 90% said the training method was very satisfied, and 10% said they were satisfied. It can be concluded that the training evaluation has shown very good results. It is hoped that the use of teaching modules during learning at school can facilitate and improve the quality of learning.

**Discussion**

The results showed that the training provided to participants could improve their ability to develop physics teaching modules for the Merdeka Curriculum. This training was carried out for one day on May 2, 2024, and produced quality teaching modules. The training participants showed an excellent ability to understand and apply the material presented by the UHAMKA Physics Education Department service team. The activity also included a presentation session where participants presented their work, which showed significant improvement in their skills and understanding of the curriculum. This training not only focuses on module creation but also includes a thorough evaluation of the strengths and weaknesses of the training. The UHAMKA Community Service Team provided participants with an assessment instrument via a questionnaire via Google Forms. The questionnaire results showed that participants had a positive view of the training, especially regarding the readiness and expertise of the team, the suitability of the materials, and the training methods used. This indicates that the training was well designed and implemented, thus meeting participants' expectations. The training participants, consisting of Physics MGMP teachers in Karawang, felt that this training had a significant positive impact. By creating the Merdeka Curriculum teaching module, teachers can increase their insight, innovation, and ability in teaching physics. The modules that have been made are expected to be used in the learning

process to increase students' interest and motivation in learning physics and contribute to better learning outcomes. The effectiveness of this training is reflected in the evaluation results, which show that the materials and methods used are excellent and by the participant's expectations. This indicates that the training activities effectively achieve the objectives and can be used as a model for similar training. This training makes a real contribution to improving the quality of physics education at the secondary school level. This study's results align with previous findings showing that well-designed training can improve teachers' professional ability in developing learning materials. For example, research conducted by other researchers shows that interactive and practice-based training can improve teachers' ability to create more innovative and effective teaching materials (Ilham et al., 2023; Weran et al., 2021). Other studies have also highlighted the importance of continuous training for teachers in understanding and implementing curriculum changes (Arifa et al., 2023; Gunawan et al., 2024; Nyoman, 2022; Susmita et al., 2024). The approach used in this training also reflects constructivist learning theory, which emphasizes the active involvement of participants in the learning process. According to this theory, trainees are more likely to internalize new knowledge when they are directly involved in creating and presenting teaching modules. This is consistent with research showing that a hands-on approach can improve teachers' understanding and skills in developing learning materials that suit students' needs.

This study has several significant advantages. First, the training approach used was highly structured and interactive, allowing participants to be directly involved in creating teaching modules. This facilitates more effective learning, as participants can apply the theory learned directly in practice. Second, using technology in the training, such as Google Form questionnaires, allows for efficient and accurate training evaluation. This makes it easier for the service team to collect and analyze participant feedback, which can be used to improve the quality of future training. Third, the training was designed to meet the specific needs of the participants, namely physics teachers in the Karawang MGMP. As such, the training materials and methods can be customized to address this group of participants' unique challenges and needs. Finally, this research makes a real contribution towards improving the quality of physics education at the secondary school level. By facilitating the development of innovative teaching modules, this research helps teachers enhance their skills and, in turn, improve student learning outcomes.

The results of this study make an essential contribution to the field of physics education. By improving teachers' ability to develop Merdeka Curriculum teaching modules, this research helps strengthen the implementation of a more relevant and practical curriculum. This research also enriches the literature on the effectiveness of teacher training in improving teaching quality. By providing a successful training model, this research can serve as a reference for other educational institutions seeking to develop similar training programs. This research also contributes to teachers' professional development by providing a platform for them to learn and share experiences in developing learning materials. As such, it impacts not only the trainees but also the wider educational community. This study's implication is that well-designed teacher training can significantly improve the quality of teaching and learning. The training provides teachers with the necessary tools to implement the curriculum effectively by focusing on developing practical skills. Another implication is the importance of using technology in teacher training. Digital tools such as online questionnaires can make training more efficient and customized to participants' needs. This suggests that integrating technology into education can increase the effectiveness of training programs. This research also implies that a hands-on approach in training is more effective in improving participants' practical skills. By allowing participants to be directly involved in developing materials, the training helps them better understand and internalize new concepts. Finally, this study shows that training tailored to participants' specific needs can increase their motivation and engagement in the learning process. This is important to consider when designing future training programs. This study has several limitations. One is that the training was conducted in one day, which may need to be extended to address all aspects required to develop teaching modules. In addition, this study was limited to physics teachers in one location, so the results may need to be more generalizable to a broader context. For future research, it is recommended that the duration of the training be extended and the scope of participants broadened. By involving more teachers from different backgrounds and regions, the research can provide a more comprehensive insight into the effectiveness of this training. In addition, further research could explore the long-term impact of this training on teachers' teaching performance and students' learning outcomes.

## 4. CONCLUSION

The Merdeka Curriculum teaching module training organized for teachers in the Physics MGMP of Karawang, West Java, improved teachers' understanding and skills in designing innovative teaching modules. This success indicates that the training is practical in meeting teachers' professional

development needs and cancan enhance the quality of education by providing more meaningful and challenging modules for students. The success of this program also underscores the importance of conducting similar training regularly so that the development of teachers' abilities in designing and implementing the Merdeka Curriculum is sustainable and can have a long-term positive impact on the quality of learning in schools. Thus, this training not only answers the need to improve teacher competence but also has the potential to improve the overall quality of education in Karawang.

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