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Effectiveness of training program in improving teachers' skills in developing teaching modules at SMA Negeri 7 Palu

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Abstract

The Merdeka Belajar curriculum is a curriculum that aims to restore the authority to manage education to local governments and schools according to their needs, capacities and local wisdom. This curriculum has been officially launched in early 2022, until now teachers are still not familiar, especially regarding teaching modules based on the independent curriculum. Therefore, it is very appropriate to collaborate with MGMP biology teachers and biology education lecturers at Tadulako University to assist these teachers in training activities for the preparation of teaching modules based on the independent curriculum. This research aims to increase the capacity of teachers in developing independent curriculum teaching modules so that teachers can have more time to become learning facilitators. This research was conducted as a pre-experiment, with a One group pretest-postest design. The treatment given was in the form of training on Teaching Modules at SMAN 7 Palu. The samples of this study were teachers of SMA Negeri 7 Palu and 18 final year undergraduate students as training participants. The implementation of this research starts from the preparation stage, training implementation and evaluation. Data analysis used Wilcoxon Test to test the effectiveness of training and N-Gain to determine the improvement of teachers' skills. Training is an effective effort to develop teachers' ability to develop teaching modules in accordance with the independent curriculum. The teaching module training program succeeded in improving the knowledge and skills of teachers at SMA Negeri 7 Palu. The results of data analysis showed a significant increase in the assessment of teacher skills before and after training. Statistical tests and N-Gain showed that the training program was effective in improving teachers' skills in developing teaching modules.

Keywords: Effectiveness; Training; Skills; Teaching Modules; SMA Negeri 7 Palu

1. Introduction

The curriculum is a necessity in education, one of which is learning in schools. The curriculum along with the times and technological advances is evaluated and improved every time both by policy makers, namely the government and implemented in the field by subject teachers [1]. The government launched the independent learning curriculum, through this curriculum students are facilitated by teachers in local creativity owned by schools. The independent learning curriculum gives teachers more freedom to present learning according to the abilities of each student individually. The essence of independent learning is to deepen the competence of teachers and students to innovate and improve the quality of learning independently.

Teachers are the main actors in the preparation of learning tools, including making teaching modules. Teachers are also required to be proactive about changes in the curriculum [2]. Likewise, education units must be responsive in adapting to changes in the existing curriculum [3]. Therefore, it is important to develop teacher competence so that they can innovate in the preparation of teaching modules. This is so that teachers can teach using techniques, approaches, and methods that are more effective, efficient, and not widespread so that they can focus on achievement indicators.

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The results of interviews and observations with MGMP Biology SMA Palu City related to the readiness and knowledge of the independent curriculum are still lacking. Lack of knowledge in determining learning outcomes, and lack of skills in making teaching tools. Teachers have not compiled teaching materials independently according to the needs of students and environmental conditions. Some teachers said that it takes extra time to compile teaching materials as a whole, so that the factors of time, cost and energy become obstacles in the preparation of independent teaching materials.

Schools can independently manage education and learning so that they can improve the quality and competitiveness of madrasas according to the needs of the 21st century. The Merdeka Belajar curriculum aims to create a happy atmosphere for teachers, students, and parents. This is confirmed by [4] that the implementation of the Merdeka Curriculum in several Movement Schools in Garut Regency was carried out in the first year with quite good results. However, some schools are still designing formulas in implementing this Merdeka Curriculum.

Teachers are the main actors in the preparation of learning tools, including making teaching modules. Therefore, in order for the learning process to run optimally, teachers need to design teaching modules comprehensively. However, in reality, many teachers do not understand the stages in preparing teaching modules based on the Merdeka Curriculum [5], including teachers at SMA Negeri 7 Palu. If learning is not well planned and contained in the teaching module, it is certain that the quality of the material and delivery delivered is not systematic and on target.

Seeing this problem, it is important to carry out training activities for preparing teaching modules based on the Independent Curriculum at the school level. With this training, it will add theoretical and practical insights in implementing the independent curriculum at school. With the hope that teachers will be able to compile teaching modules based on the independent curriculum independently and have plenty of time to become learning facilitators. Training is a process carried out to assist the workforce in increasing effectiveness in work. Training is carried out by developing thinking activities, skills, knowledge and attitudes in accordance with the expected provisions. This study aims to determine the effectiveness of the training program in improving teachers' skills in developing teaching modules at SMA Negeri 7 Palu.

2. Material and methods

This research was conducted in pre-experiment, with One group pretest-postest design. The treatment given was in the form of training on Teaching Modules at SMAN 7 Palu. In this study, pretest and posttest were tested. The pretest assessment is the teacher's skills in compiling teaching modules before attending training. While the posttest is the teacher's skills in compiling teaching modules after attending the training. The samples of this study were teachers of SMA Negeri 7 Palu and 18 final year undergraduate students as training participants. The implementation of this research starts from the preparation stage, training implementation and evaluation. Data analysis used Wilcoxon Test to test the effectiveness of training and N-Gain to determine the improvement of teachers' skills. N-Gain was calculated using IBM SPSS 29. Interpretation of the "<g>" value obtained using Hake (1999) criteria, with the classification shown in Table 1.

Table 1 Interpretation Value <g>

< *g* >	Classification
<g> < 0,30	Low
0,30 ≤ *<g>* < 0,70	Medium
0,70 ≤ *<g>* ≤ 1,00	High

3. Results

The training program aims to improve teachers' skills in developing teaching modules at SMA Negeri 7 Palu. The assessment aspects in developing teaching modules are:

- Learning objectives/achievement indicators;
- Structured continuous learning;
- Relevant approaches;
- Learning combines content, pedagogy, technology;

- Accommodating, adaptive, and progressive to the times;
- Evaluating learning,
- Evaluating learning based on the curriculum;
- Evaluating learning based on the learning environment.

The results of the teaching module assessment before and after training are in Table 2.

Table 2 Teaching Module Assessment Results Before and After Training

Respondent	Pre-test	Post-test
1	66.92	86.92
2	66.15	83.85
3	65.38	86.15
4	70.00	88.46
5	66.92	86.15
6	65.38	87.69
7	67.69	86.92
8	67.69	84.62
9	71.54	87.69
10	66.92	86.15
11	68.46	86.92
12	66.15	85.38
13	65.38	80.77
14	64.62	85.38
15	63.85	83.85
16	72.31	88.46
17	64.62	84.62
18	63.85	84.62
Average	*66.87*	*85.81*

The data above shows that there are differences in teacher skills in making teaching modules before and after the implementation of the training program. The average pretest score of the entire sample was 66.87. While the Postest obtained a value of 85.81. There is a difference when before the training program and after. Measuring the differential power of the two variables, namely pretest and postest, the t test was conducted. obtained a correlation value of 0.657 which is more than the level of 0.5. So it can be said that the pretest and postest scores have a significant difference. The results of the t-test analysis of the difference between the pretest and posttest can be seen in Table 3.

Table 3 Pretest and Posttest T-test of Differentiability

Paired Samples Correlations			
	N	Correlation	Sig.
Pretest & Postest	18	0.657	0.003

Data analysis was conducted to test the Ho hypothesis, namely that there is no difference in teacher skills in compiling teaching modules before and after training (ineffective training). While there is a difference in teacher skills in compiling teaching modules before and after training (effective training),

Next, hypothesis testing is carried out with statistical tests. The test results of the two hypotheses obtained the real level α = 0.05. If Ho obtains the value of Asymp.Sig. <0.05, then it is rejected. If Ho obtains the value of Asymp.Sig. > 0.05, then the hypothesis is accepted. The test using the Wilcoxon statistical test with the help of IBM SPSS Statistic 29 can be seen in Table 4.

Table 4 Hypothesis Statistical Test Results

	After training – before training
Z	-3.833
Asymp. Sig. (2-tailed)	0.001

Based on table 4, the Asymp.Sig (2-tailed) value is 0.001. The Asymp.Sig (2-tailed) value is 0.001 <0.05. It is concluded that Ho is rejected, indicating that there are differences in teacher skills in preparing teaching modules before and after participating in the training program. Thus, the teaching module training program is effective in improving the skills of teachers at SMAN 7 Palu.

N-Gain analysis to determine the magnitude of improvement in teacher skills. Table 5 shows the results of the N-gain test calculation with the help of IBM SPSS Statistics 29.

Table 5 N-Gain Test

N-Gain	Interpretation
0,57	Medium

Based on Table 4, the N-gain value is 0.75, with a moderate category. This shows that the skills of SMA Negeri 7 Palu teachers in preparing teaching modules have increased after the training. This training program is effective in improving the skills of teachers at SMAN 7 Palu in preparing teaching modules.

4. Discussion

The Merdeka Curriculum is a new curriculum implemented in Indonesia starting in the 2022–2023 school year. This curriculum provides flexibility for teachers to develop learning according to the needs and characteristics of students [6]. One of the important things that teachers must do in implementing the Merdeka Curriculum is compile teaching modules.

Teaching modules are one of the learning tools used by teachers to carry out learning. The preparation of teaching materials is required in accordance with the achievement of the independent learning curriculum. The preparation of teaching modules is based on basic competencies, the Pancasila learner profile, and the learning principles of the Merdeka Curriculum [7]. A good teaching module must contain important components, such as learning objectives, learning materials, learning activities, assessment, and feedback.

The process of preparing teaching modules can be a means to improve teacher skills. One of the efforts to improve the abilities and skills of teachers in making teaching modules is training. Training is used to develop the ability of human resources through the processes of planning, training, and management to achieve optimal results [8]. The training program for the preparation of teaching modules is carried out to increase teachers' knowledge and skills in preparing teaching modules in accordance with the independent curriculum. The existence of activities such as training can have a positive impact on teachers' insights in implementing the independent curriculum at school [9].

Based on the results of the data analysis, it is known that the teaching module training program can improve the knowledge and skills of teachers at SMA Negeri 7 Palu. The pretest value or assessment before the training was carried out obtained an average of 66.87. While the posttest or skill assessment after the implementation of the training is 85.81. The results of the assessment of the teacher's teaching module in the pretest and posttest showed a difference. This is in line with Tamsuri's opinion in 2022 that pretest and posttest evaluation assessments can objectively measure abilities (knowledge, attitudes, or skills) [10].

Hypothesis testing in this study consists of the proposed hypothesis, the null hypothesis (Ho), and the alternative hypothesis (Ha). The null hypothesis states that the independent variables together have no significant effect on the dependent variable. The Ho hypothesis is that there is no difference in the skills of teachers in compiling teaching modules before and after training (ineffective training). While there is a difference in teacher skills in compiling teaching modules before and after training (effective training). The results of the statistical test analysis of the two hypotheses show that the Asymp.Sig (2-tailed) value is 0.001. Because the Asymp.Sig (2-tailed) value is 0.001 <0.05, Ho is rejected and Ha is accepted. It is concluded that there is a difference between teachers' skills in preparing teaching modules before and after training. This means that the implementation of this training program is effective in improving the skills of teachers as trainees in preparing teaching modules at SMAN 7 Palu. N-Gain test obtained a value of 0.57. This value is interpreted as moderate. This category shows that this training program is effective in improving the skills of teachers at SMAN 7 Palu in preparing teaching modules.

The implementation of this training program aims to provide knowledge and skills to educators for developing teaching modules that are in accordance with the principles of the Merdeka Curriculum. Therefore, the data analysis shows that the objectives of the training program have been achieved as expected. This goal is to increase the knowledge and skills of SMA Negeri 7 Palu teachers regarding teaching modules in accordance with the independent curriculum. Activities such as mentoring can improve the teacher's ability to develop teaching modules using the independent curriculum with a percentage of 87% [11]. The preparation of teaching modules in accordance with the independent curriculum has several things that require attention to the criteria, namely being interesting, meaningful, challenging, relevant, and contextual [12].

The results of observations during the implementation of the training showed that the teachers were very enthusiastic from the beginning to the end of the activity. During this activity, participants gained understanding and skills about the principles of the Merdeka Curriculum and how to integrate them into teaching modules. The result of this training activity is the preparation of teaching modules that are innovative and in accordance with the Independent Curriculum paradigm [13]. With teaching modules that support adaptive, collaborative, and project-based approaches, it is hoped that education in Indonesia can provide more meaningful and relevant learning experiences for students, helping them develop as individuals who are independent, creative, and ready to face future challenges.

In addition, by analyzing the components of the teaching module, participants gained a deeper understanding of the elements needed to develop an effective and responsive teaching module. This is in line with the opinion of Anwar [14] that choosing teaching modules that have been provided by the government to adjust to the characteristics of students or compile their own teaching modules according to the characteristics of students.

5. Conclusion

- Teaching modules are an important tool in implementing the Merdeka Curriculum. It is compiled based on basic competencies, the profile of Pancasila learners, and the learning principles of the Merdeka Curriculum. The process of preparing teaching modules can be a means of improving teacher skills.
- Training is an effective effort to develop teachers' ability to develop teaching modules in accordance with the independent curriculum.
- The teaching module training program succeeded in increasing the knowledge and skills of teachers at SMA Negeri 7 Palu. The results of data analysis showed a significant increase in the assessment of teacher skills before and after training. Statistical tests and N-Gain showed that the training program was effective in improving teachers' skills in developing teaching modules.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare no conflict of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

Author contributions

All authors planned, designed the work, and supervised all the processes.

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