

IMPROVING THE COMPETENCY OF HIGH SCHOOL/VOCATIONAL SCHOOL BIOLOGY TEACHERS IN BENER MERIAH DISTRICT THROUGH TRAINING ON THE DEVELOPMENT OF INDEPENDENT CURRICULUM TEACHING MODULES

Hafnati Rahmatan ,¹ Nir Fathiya ,² Vivera Ruselli Puspa,^{3*}

^{1,2,3} Department of Biology Education , Faculty of Teacher Training and Education, Syiah Kuala University , Jl. Tgk. Hasan Krueng Kalee, Banda Aceh City, 23111, Indonesia

Email correspondence: viverarusellipuspa@usk.ac.id

ABSTRACT

Bener Meriah is one of the districts in Aceh Province where several schools have implemented the Merdeka Curriculum. The interviews conducted with the Chair of the Bener Meriah Biology Teachers' Conference (MGMP) revealed that high school/vocational school (SMA/SMK) biology teachers did not understand the development of the Merdeka Curriculum teaching module. This activity aims to increase teacher competency regarding the development of Merdeka Curriculum teaching modules so that teachers know about developing modules for implementing the Merdeka Curriculum in their schools. This research data used a questionnaire with an instrument consisting of 5 statements regarding developing Merdeka Curriculum teaching modules for SMA/SMK biology teachers in the Bener Meriah. Data is presented descriptively. The results showed that SMA/SMK biology teachers in Bener Meriah agreed with developing Independent Curriculum teaching modules. The percentage of questionnaire results, i. e showed it. 93% of biology teachers agreed with the freedom of an educator in selecting and modifying teaching tools, and 100% of biology teachers agreed with the objectives of the teaching module, students' need, teaching module criteria, and objectives for developing the teaching module. The enthusiasm of the participants, survey results, and modules produced by the teachers prove the success of this activity.

Keywords: Teaching Module, Biology, Merdeka Curriculum

A. INTRODUCTION

The objectives of national education as stated in Law No. 20 of 2003 Article 1 paragraph 1 are based on Pancasila and the 1945 Constitution of the Republic of Indonesia. The meaning of education in Law No. 20 of 2003 states "Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual religious strength, self-control, have spiritual religious strength, self-control, personality, intelligence, noble morals, and skills needed by themselves, society, nation and state". In realizing the objectives of national education, a good education program is needed (Istianah, et al., 2021; Juliani et al., 2021).

A crucial component of education that is often overlooked is the curriculum. The curriculum is a multidimensional complex that serves as the starting point to the end of learning experiences and is the core of education that needs to be periodically evaluated in line with current developments. Today's technology demands that society develop skills and knowledge related to scientific and technological developments. Therefore, the curriculum is dynamic and can evolve in line with changing times. Educational units can improve the existing curriculum. The curriculum is a series of learning plans that students take through various subjects to achieve learning objectives (Cholillah et al., 2023; Hamzah, 2021). The curriculum is an educational program designed to provide learning to students. The designed program contains various activities aimed at supporting the learning process of students. Students so that it is hoped that there will be a positive impact on the behavior and skills of students in accordance with educational and learning objectives (Fatirul & Walujo (2022)).

The Independent Curriculum (Kemendikbudristek) is an option for learning recovery, launched by the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek). Kemendikbudristek issued a policy regarding the development of the Independent Curriculum. The policy option for developing the Independent Curriculum is provided to educational institutions as an additional effort to recover from the learning crisis during 2022-2024 due to the COVID-19 pandemic (Nugraha, 2022; Julaeha et al., 2021). The Independent Curriculum emphasizes the concept of "Freedom to Learn" for students, designed to assist in the recovery of the learning process impacted by the pandemic. The use of technology and the need for competencies in the current era are among the foundations for the development of the Independent Curriculum (Marisa, 2021; Sudaryanto et al., 2020).

It is important to disseminate information about the independent curriculum to teachers so they can implement it correctly. Research on the implementation of the independent curriculum in schools has had a positive impact on both teachers and students. Learning the independent curriculum allows teachers to be creative in the learning process, identifying students' interests, talents, needs, and abilities. The independent curriculum adheres to the Pancasila profile, which aims to produce competent graduates who uphold character values (Rahayu et al., 2022; Muadz, 2023).

Bener Meriah Regency is one of the regencies in Aceh Province where several schools have implemented the Independent Curriculum. Interviews with the Chair of the Biology Subject Teachers' Conference (MGMP) in Bener Meriah Regency revealed that high school and vocational high school biology teachers do not yet fully understand the development of independent curriculum teaching modules. Learning modules are crucial for teachers to master in implementing the independent curriculum. The underlying rationale for this initiative is communication or dialogue between the head of the MGMP of Bener Meriah Regency and lecturers in the Biology Education Study Program, Faculty of Teacher Training and Education, Syiah Kuala University.

Therefore, biology teachers in Bener Meriah Regency and lecturers from the Biology Education Study Program at the Faculty of Teacher Training and Education (FKIP) USK agreed that high school and vocational high school biology teachers in Bener Meriah Regency must understand the concept of teaching modules based on the Independent Curriculum . It is hoped that teacher competency will improve if they are provided with training on developing teaching modules for the Independent Curriculum, equipping them with the knowledge to develop modules for implementing the curriculum in their schools.

B. SERVICE METHOD

The procedure for community service activities is that the team conducts workshops and provides assistance to biology teachers in MGMP activities from June to October 2023. This community service activity goes through several stages as follows;

1. Needs analysis

The initial process involved developing a case study of the need for high school and vocational high school biology teachers in Bener Meriah Regency. The team conducted theoretical observations (reviewing current issues in education) and practical observations (conducting interviews, administering questionnaires, and discussing the situation with teachers and lecturers).

2. Workshop

The presentation was delivered by a resource person from the Biology Study Program, Faculty of Teacher Training and Education, USK. The material presented was related to teaching modules in the independent curriculum. A teaching module is a teaching tool containing a lesson plan (RPP) to help achieve Learning Outcomes (CP) in the learning process. The teaching module aims to assist teachers in providing

teaching materials and serves as a guide for teachers in implementing learning. The material was delivered through a comprehensive presentation related to the activity's theme, objectives, and key issues to workshop participants held at SMA 1 Bukit.

3. Discussion

In this process, the team gives participants the opportunity to ask questions so that interaction occurs between participants and resource persons, resulting in an increase in knowledge and perspectives of MGMP participants.

4. Guidance

The mentoring process gives students time to determine the topics or materials they wish to develop as teaching modules. The mentoring is conducted *online* for four months , with regular monitoring of module progress via *Zoom meetings* .

5. Conclusion

The final process aims to conclude the results of the activities and evaluate the success of this community service activity, namely by assessing the teaching modules created by MGMP participants.

The flow of the community service implementation method is presented in Figure 1.

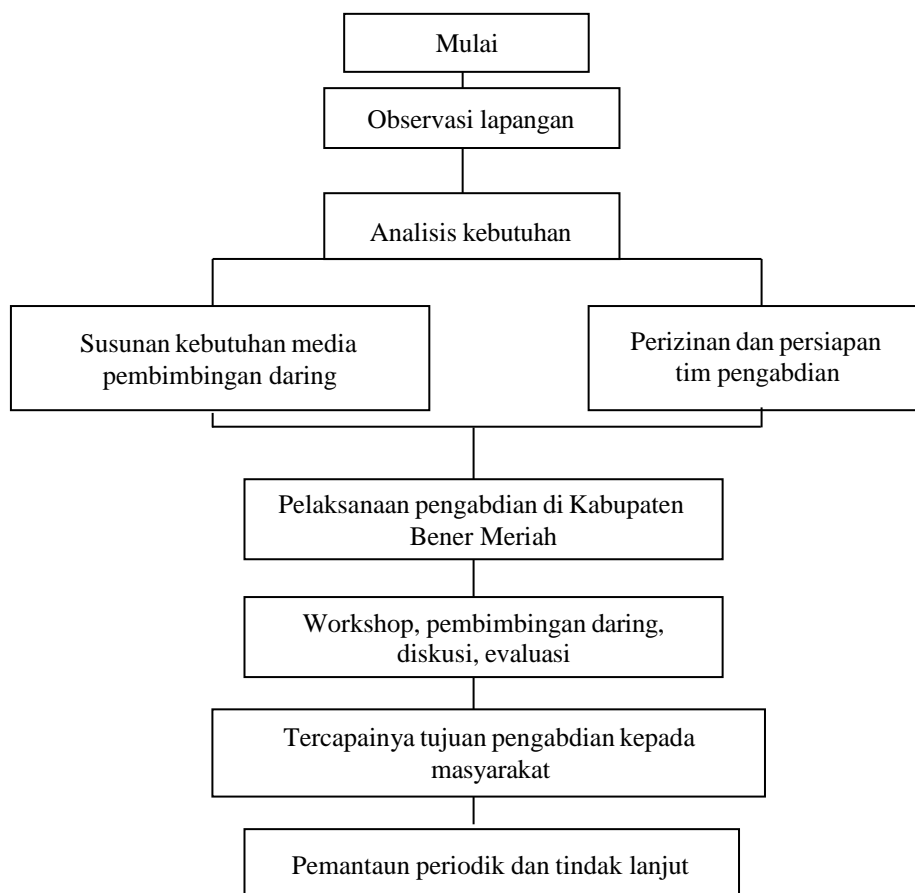


Figure 1. Community service flowchart

C. RESULTS AND DISCUSSION

In this activity, participants were given a questionnaire to fill out directly. There was a questionnaire containing five statements regarding the development of the Independent Curriculum teaching module for Senior High School/Vocational High School Biology Teachers in Bener Meriah Regency. The statements submitted in this questionnaire were as follows: (1) teachers have the freedom to create, choose and modify available educational tools according to the context, characteristics and needs of students, (2) teaching modules are a form of teaching tools used by educators to carry out learning with the aim of achieving the Pancasila student profile and learning outcomes, (3) Teaching Modules are an elaboration of the Learning Objective Flow and are arranged according to the stages of student development and consider what will be learned and developed for the long term, (4) One of the criteria for teaching modules is that they are interesting, meaningful, and challenging, expected to be able to arouse interest in learning and attract students to actively participate in the learning process, and (5) the purpose of developing teaching modules is to develop teaching tools that serve as guidelines for educators in achieving learning outcomes (Setiawan et al., 2022).

Table 1. Questionnaire Results

No.	Questions/Statements	Answers from 30 Respondents			
		TS	KS	S	SS
1	Teachers have the freedom to create, choose and modify available teaching tools according to the context, characteristics and needs learners .	0	2	10	18
2	Teaching modules are a form of teaching tool used by educators to implement learning with the aim of achieving the Pancasila student profile and Learning Outcomes.	0	0	8	22
3	Teaching Modules are a description of the Learning Objective Flow and are arranged according to the stages of student development and take into account what will be learned and developed in the long term.	0	0	17	23



- 4 One of the criteria for a teaching module is that it is interesting, meaningful and challenging, and is expected to be able to arouse interest in learning and attract students to actively participate in the learning process. 00228
- 5 The aim of developing teaching modules is to develop teaching tools that serve as guidelines.

Based on the questionnaire results obtained, it can be seen that teachers have the freedom to create, select, and modify available teaching tools according to the context, characteristics, and needs of students. The majority of high school/vocational high school biology teachers in Bener Meriah Regency agreed with the freedom to create, select, and modify available teaching tools according to the context, characteristics, and needs of students. Thus, learning can be implemented according to the needs and interests of students. The combined percentage value of strongly agree and agree is 93%. This freedom is believed to increase the effectiveness of learning because it allows teachers to adapt their approach to the specific needs and conditions in their class. Teachers who have this freedom can be more responsive to changes in classroom dynamics, student learning styles , and curriculum developments.

According to Maulida (2022), the Merdeka Belajar curriculum is an innovation aimed at producing superior human resources who embody the Pancasila Student Profile. This learning is expected to not only focus on students in the classroom but also encompass exploration outside the classroom, creating a fun and non-teacher-centered learning environment. This learning system will foster self-confidence, independence, social intelligence, and competitiveness .

In biology teaching, teachers have the freedom to choose teaching methods that suit the material being taught and the characteristics of their students. For example, they can choose between a demonstrative approach, laboratory experiments, or the use of technology in teaching. Teacher freedom also includes the ability to adapt learning approaches to the learning style . Student learning . Teachers can use a variety of strategies to meet the needs of diverse learners, including the use of supporting materials , research projects, or problem-based learning.

Biology teachers can also use their freedom to develop creative assessment methods that align with biology learning objectives. This could include research projects , presentations, or formative assessments that support students' in-depth understanding. However, giving them this freedom is also risky, as it can also impact assessments. Excessive freedom to modify learning can lead to inequalities in the quality of learning between teachers . This is the reason why two teachers disagreed with this .

A teaching module is a form of teaching tool used by educators to implement learning with the aim of achieving the Pancasila student profile and Learning Outcomes. All teachers agreed that a teaching module is a form of teaching tool used by educators to implement learning with the aim of achieving the Pancasila Student Profile and Learning Outcomes. The combined percentage of strongly agree and agree is 100%. Teaching modules are one of the important tools in the successful implementation of learning in schools within the Independent Curriculum. Teaching modules provide structure and guidance that help teachers deliver learning materials in a more focused manner. The Pancasila Student Profile is an Indonesian educational guideline that aims to build the character of the Indonesian generation by implementing the Pancasila ideology as the foundation of the state (Ministry of Education and Culture, 2020). It is important to create teaching modules that are not only effective in conveying information but also capable of shaping student character in accordance with Pancasila values and achieving the desired Learning Outcomes. The integration of national values in education is a crucial aspect in shaping a generation with a strong national identity and morals.

The Teaching Module is a description of the Learning Objective Flow and is arranged according to the stages of student development and takes into account what will be studied and developed for the long term. All teachers agreed that the teaching module elucidates the Learning Objectives Flow and is structured according to the stages of student development, while considering what will be learned and developed for the long term. The combined percentage of strongly agreeing and agreeing is 100%. A teaching module is a curriculum-based learning tool or learning model implemented with the aim of achieving predetermined proficiency standards. Teaching modules play a crucial role in helping teachers design learning activities. In preparing learning tools, teachers play a crucial role in refining their thinking skills to innovate teaching modules. Therefore, developing teaching modules is a necessary teaching skill for teachers to develop, ensuring that teaching techniques in the classroom are more effective and efficient, and that discussions are included as indicators of success (Nurdiansyah et al., 2018 and Nesri et al., 2020).

One of the criteria for a teaching module is that it should be interesting, meaningful, and challenging. It is hoped that it will stimulate interest in learning and encourage students to actively participate in the learning process. All teachers agreed that one of the criteria for a teaching module is that it should be interesting,

meaningful, and challenging. It is hoped that it will stimulate interest in learning and encourage students to actively participate in the learning process. The combined percentage of strongly agree and agree is 100%. Teachers must understand the strategies for developing teaching modules and must fulfill two minimum requirements: meeting existing criteria and learning activities in the teaching module based on the principles of learning and assessment (Maulida, 2022). Interesting and meaningful modules can help shape students' learning interests. This interest can trigger intrinsic motivation, which strengthens student engagement in learning.

The goal of developing a teaching module is to develop teaching tools that serve as guidelines for educators in achieving learning outcomes. All teachers agreed that the goal of developing a teaching module is to develop teaching tools that serve as guidelines for educators in achieving learning outcomes. The combined percentage of strongly agree and agree is 100%. Very likely . Many teachers agree that teaching modules are a very useful teaching tool for implementing learning. Teaching modules provide structure and guidance that help teachers deliver learning materials in a more focused manner. Teaching modules are intended to serve as guidelines for educators. This emphasizes the module's role as a tool that provides guidance to educators on how to deliver material, plan learning, and assess student progress. According to Mawarsari et al. (2022), one of the goals of developing teaching modules is to improve critical thinking skills, foster student initiative in work, internal learning motivation, and the ability to develop interpersonal relationships within work groups.

This study also presents documentation as evidence of the validation of the activity. In the photos of the activity, the biology teachers appear enthusiastic about participating. Photos of the activity, depicting enthusiastic biology teachers, provide visual evidence of their involvement in the activity. This can serve as evidence that the participants were truly engaged and actively participating.



Figure 2. Presentation of Material

Figure 2 shows that this activity was conducted offline at SMA Negeri 1 Bukit, Bener Meriah. The material was delivered via a presentation using the Ms. PowerPoint application. The presentation was well-received by the participants.



Figure 3. Participants in the Competency Improvement Training for Developing Teaching Modules

Based on Figure 3, the participants are listening to the material and instructions from the speaker. Occasionally, this is accompanied by questions and answers from participants who want to learn more about the development of this teaching module. This training is conducted through two-way communication between participants and the speaker. After participants are given an understanding and in-depth understanding of the teaching module, the speaker asks them to create a teaching module. The speaker will then provide feedback on the teaching module they have worked on.

D. CONCLUSION

The community service activities carried out by the Biology Education Study Program Lecturers of the Faculty of Teacher Training and Education, University of Surakarta (USK) in Bener Meriah Regency have had a positive impact on the development of knowledge and increasing the competence of high school biology teachers in creating teaching modules for the implementation of the Independent

Curriculum. High school biology teachers in Bener Meriah Regency agreed with the development of the Independent Curriculum teaching modules. This was indicated by the percentage of questionnaire results obtained, namely 97% of biology teachers chose to agree with the freedom of an educator to choose and modify teaching tools and 100% of biology teachers chose to agree with the objectives of the teaching modules, student needs, criteria, and objectives of developing teaching modules. The enthusiasm of the participants, the survey results, and the modules produced by the teachers proved the success of this activity. However, there were several obstacles during online discussions because in some areas in Bener Meriah Regency sometimes the internet signal was unstable.

E. SUGGESTIONS

Distance is no longer a significant obstacle, as many activities are now conducted using a hybrid method, combining both offline and online activities. However, in some areas where internet connections are unstable, this can cause problems during discussion sessions. Therefore, it is hoped that other community service activities using hybrid methods will be conducted in locations with stable internet connections so that online discussions are smooth.

F. THANK YOU

The author would like to express his gratitude for the support of all the lecturers in the Biology Education Study Program, the Chair of the Biology MGMP of Senior High Schools/Vocational High Schools in Bener Meriah Regency, and the MGMP participants who participated in making this community service activity possible. He also extends his deepest gratitude to the principal of SMA1 Bukit for accommodating the venue for this community service activity.

G. BIBLIOGRAPHY

- Cholilah, M., Tatuwo, AG, Komariah., Rosdiana, SP, & Fatirul, AN (2023). Development of Independent Curriculum in Educational Units and Implementation of Independent Curriculum in 21st Century Learning. *Sanskara Education and Teaching*. 1(2). 57-66.
- Fatirul, AN, & Walujo, DA (2022). *Research Methods for Learning Development (Special Edition for Education Students and Educators)*. Pascal Books.
- Hamzah, A. (2021). *Project -Based Research Using Quantitative, Qualitative, and R&D Methods: Theoretical Studies & Examples of Their Application*. CV Literasi Nusantara Abadi.
- Istianah, A., Mazid, S., Hakim, S., & Susanti, R. (2021). *Integration of Pancasila Values to Build the Character of Pancasila Students in the Campus*

- Environment. *Gartranasantara Journal*, 19(1), 62-70.
- Julaeha, S., Muslimin, E., Hadiana, E., & Zaqiah, QY (2021). Curriculum Innovation Management: Characteristics and Procedures for Developing Several Curriculum Innovations. *Muntazam: Journal of Islamic Education Management*, 2(01).
- Juliani, AJ, & Bastian, A. (2021). Character Education as an Effort to Realize Pancasila Students in the Proceedings of the National Seminar of the Postgraduate Program of PGRI Palembang University.
- Marisa, M. 2021. Innovation of the "Independent Learning" curriculum in the era of society 5.0. *Santhet: (Journal of History, Education and Humanities)*, 5(1), 66–78.
<https://ejournal.unibabwi.ac.id/index.php/santhet/article/view/1317>.
- Maulida, U. (2022). Development of Teaching Modules Based on the Independent Curriculum . *Tarbawi*, Vol. 5 No. 2.
- Mawarsari, N., Wardani, KW, Satya, K., & Salatiga, W. (2022). The Effect of Implementing the Problem-Based Learning Model on Numeracy Skills in the Independent Curriculum of Grade 1 Elementary School Students. 5, 5461–5465.
- Muadz, M. (2023). Development of an Optimization Model for the Utilization of PMM in the Implementation of Independent Learning Through Workshops for Elementary School Education Units in Batu City. *Taman Widya Humaniora Education Journal* , 2(2), 680–702.
- Nesri, F. D. P., & Kristanto, Y. D. (2020). Development of Technology-Assisted Teaching Modules to Develop Students' 21st-Century Skills. *AKSIOMA: Journal of Mathematics Education Study Program*, 9 (3): 480-492.
- Nugraha, T, S. 2022. Independent Curriculum for Crisis Recovery . *Curriculum Innovation* 19 (2) (2022) 251- 262.
<https://ejournal.upi.edu/index.php/JIK>.
- Nurdyansyah, N. (2018). Development of Natural Science Module Teaching Materials for Fourth Grade Elementary School Students. *Muhammadiyah University of Sidoarjo*.
- Rahayu, Restu., Rosita, R., Rahayuningsih, Y, S., Hernawan, AS, Prihantini. 2022. Implementation of the Independent Learning Curriculum in Learning at the Driving School. *Basicedu Journal* . 6(4), 6313- 6319.
<https://www.neliti.com/publications/452109/implementation-of-the-independence-learning-curriculum-in-the-driving-school> .
- Sudaryanto, S., Widayati, W., & Amalia, R. (2020). The Concept of Independent Learning - Independent Campus and Its Application in Indonesian Language (and Literature) Education. *Code: Language Journal*, 9(2).