

Difficulty Analysis Mathematics Teachers in Implementing the Merdeka Curriculum in West Aceh Schools

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ABSTRACT:

The aim of this research is to identify and describe barriers to teachers implementing the merdeka curriculum in mathematics learning in elementary schools. The method used in this research is a qualitative descriptive method through interviews and observations of 30 school mathematics teacher participants junior high school in West Aceh. The results of this research show that so far teachers often experience obstacles related to implementing the Independent Curriculum in Mathematics learning. Barriers experienced by teachers in planning and implementing learning. Barriers to learning planning include (1) teachers lacking understanding regarding CP as learning objectives; (2) student heterogeneity in the class; (3) currently there is often a lack of references to differentiated learning models; (4) there are limited school facilities and infrastructure; (5) limited initial knowledge and subject matter. Barriers to the implementation of learning include (1) limited understanding of the subject matter with other relevant knowledge; (2) limitations in accommodating opening questions; (3) limited psychological understanding of students; (4) limitations in translating knowledge into language that is easy to understand.

Keywords: Difficulty Teacher, Merdeka Curriculum, Aceh School.

Introduction

The Ministry of Education, Culture, Research and Technology has realized the implementation of the Independent Curriculum since 2021 by launching the Driving School

program. There is 2492 schools for Class 1 and 6747 schools for Class 2 which are members of the driving school program. Schools that are included as driving schools are schools that have met certain criteria so that they can be used as pilot projects for implementing the merdeka

curriculum.

There are new things in the Merdeka curriculum, including that there are no longer the terms Core Competencies (KI) and Basic Competencies (KD) as competencies that must be achieved by students after going through learning process. In the Merdeka Curriculum, there are Learning Outcomes (CP) which are a series of knowledge, skills and attitudes as a continuous process so as to build complete competence. This has an impact on the learning assessments that are developed must refer to the established CP. Compared to the previous curriculum, the Merdeka Curriculum has content and structure that is simpler, deeper, independent, relevant and interactive. The selected material is focused on important and essential material according to the students' development stages so that the lesson material or content is no longer dense. Apart from that, something new in the Merdeka Curriculum is that schools are given the freedom to apply collaborative learning models between subjects and make cross-subject assessments, for example in the form of summative assessments in the form of projects or project-based assessments. But most importantly, learning is designed and applied in a fun way.

Seeing several new things in the merdeka curriculum, it is necessary to carry out studies and evaluations in more depth to see the effectiveness and accuracy in its implementation. Several studies have been conducted to describe the implementation of the Merdeka curriculum. Barlian (2022) researched the implementation of the merdeka curriculum in improving the quality of education. More specifically, Sumarsih, et al., (2022) researched the analysis of the implementation of the Merdeka curriculum in Primary Schools. Because it was only launched a few months ago, socialization and thorough preparation are still needed by curriculum implementers, one of whom is teachers. The changes that occur due to the merdeka curriculum policy affect the role of teachers and educational challenges that require teachers to develop personal competencies and learning competencies (Suhandi & Robi'ah, 2022).

Teachers play an important role in ensuring that a curriculum runs well. Teacher required to have the ability to implement and make the teaching and learning process successful using the applicable curriculum. The teacher's ability to implement the curriculum will be a benchmark for the success of implementing the curriculum used. Whether a curriculum implemented in an educational institution works or not depends on

a teacher's skills and abilities in understanding the applicable curriculum.

The concept of independent learning directs teachers not to be trapped in administrative tasks which can burden teachers to focus more on the learning process (Yamin & Syahrir, 2020). In the concept of independent learning, the teacher is not only a source of information, but the teacher must be a problem solver in everyday learning. Thus, students will become more creative and think critically. Teachers act as facilitators, inspirers and true learners who always motivate students. Teachers apply new ideas, creative methods, technology to improve students' knowledge and skills (Kalyani & Rajasekaran, 2018). From several literature sources it can be concluded that freedom to learn is a process of freedom to innovate, think, learn, be independent and creative (Lao & Hendrik, 2020). The success of this curriculum depends on the activities and creativity of teachers in developing and implementing planning and implementation of learning in the classroom, in accordance with process standards set by the government. Susanto (2014) explains that in developing learning, teachers must always start from planning, then implementation and finally assessment.

In this driving school curriculum there is a change in the naming of the Learning Implementation Plan (RPP) to Teaching Module. Teaching modules are a number of tools or media facilities, methods, instructions and guidelines that are designed systematically and interestingly in this teaching module created as an implementation of the flow of learning objectives developed from learning outcomes. This learning achievement is something new for teachers, which according to (Sadieda, 2022) when compiling teaching modules must take into account the depth of the material, the competencies and needs of students, the interests of students as well as the facilities and media needed. A teacher is given the freedom to develop teaching modules according to the students' conditions (Murni, 2020). It is recommended that modules be prepared by each subject teacher. However, if at the initial stage the teacher is not capable enough to compile learning modules, he can use modules that have been prepared by the Ministry of Education, Culture, Research and Technology. Learning innovation is a learning design from educators that originates from new ideas in facilitating students to master skills and achieve maximum learning outcomes (Purwadhi, 2019).

There is a CP that must be achieved in accordance with three elements, namely (1)

Religious Values and Character; (2) Identity, (3) Basics of Literacy, Mathematics, Science, Technology, Engineering and Arts. The educational curriculum often changes to adapt to these changes, but in its implementation it will certainly not be easy, many problems will arise and occur, including in mathematics learning. Thus, teachers are required to innovate in learning. The aim is to increase students' understanding of mathematical concepts, students become happier and more enthusiastic, feel comfortable and have no fear in learning mathematics (Manik et al., 2022). Malikah, S., et al (2022) conducted research on mathematics learning management in the merdeka curriculum. The implementation of the merdeka curriculum has been carried out through learning management which includes planning, implementation and evaluation.

The implementation of Merdeka Belajar, seen from the patterns that emerge in the field, shows that it has not fully materialized due to various problems. Preparation of human resources and supporting facilities are several factors that influence the success of Merdeka Belajar. Every level of education, from basic education to higher education, tries to adapt to the current curriculum so that national education goals can still be achieved (Manik et al., 2022). Retnaningsih & Kahiriyah (2022) have researched the merdeka curriculum in Early Childhood Education. Meanwhile, Aprima & Sari (2022) researched the implementation of the Merdeka curriculum in elementary mathematics lessons.

Learning problems are a process in learning that experiences several problems that arise, these problems can disturb, complicate, hinder or hinder the achievement of learning objectives. Usman, et al. (2022) examines one of these factors namely related to the understanding of one of the teachers at MAN 2 Tangerang regarding the differentiated learning system in the merdeka curriculum. Similar things are done at different levels of education. Fitriyah & Wardani (2022) researched the Merdeka curriculum paradigm for Elementary School Teachers. There are still several obstacles that occur in the field, both substantively and technically. These problems create a gap between expectations and reality. Learning problems are problems in learning that must be found to be resolved in order to achieve learning goals that meet expectations. So it is necessary to describe in detail the obstacles experienced by teachers in implementing the Merdeka curriculum in Mathematics learning.

Methodology

This research is descriptive qualitative research. This research reveals the obstacles experienced by elementary school mathematics teachers when implementing the merdeka curriculum. The subjects in this research consisted of 30 mathematics teachers in elementary schools in West Aceh. The technique for taking subjects in this research used purposive sampling, where 30 teachers were used. The data collection techniques used in this research used observation and interviews. Observations were carried out directly by visiting schools, while interviews were carried out online using Google Meetings. The supporting instruments used in this research are observation sheets, interview guides, and school environment analysis sheets. The data obtained in this research is descriptive data which contains the obstacles experienced by teachers in teaching mathematics using the merdeka curriculum at elementary school level. The data analysis used according to Miles and Hubberman is data reduction, data display, and drawing conclusions. Data reduction is carried out by selecting appropriate data based on the results of observations and interviews. The data obtained from the research tools were then grouped based on the obstacles experienced by teachers in planning, implementing and evaluating learning. Next, the data is displayed. Data is displayed in narrative form. Conclusions are drawn using triangulation. The triangulation carried out was method triangulation, namely the use of a number of data collection methods, in this case observation and interviews, to avoid research data bias.

Results

Implementation of the Merdeka curriculum in mathematics learning by teachers starts from planning, implementation, and evaluation. Lase (2020) revealed that learning planning is important in teaching activities, because learning planning can be a reference for a teacher to carry out learning in class. Things that have changed or are new in learning planning in the Merdeka curriculum are as follows:

- a. In learning tools, KI and KD change to CP. CP planning is analyzed to develop learning objectives and the flow of learning objectives;
- b. The term Syllabus becomes ATP (Learning

- Objective Flow). ATP is created and designed by teachers;
- c. RPPs are changed to Teaching Modules and are developed by teachers;
 - d. Teaching modules can be made 1 week per module and include formative tests and summative tests. Formative tests and summative tests are planned and designed by teachers;
 - e. In the Teaching Module, at the beginning of learning there must be a diagnostic test (divided into 2, namely cognitive tests for learning and non-cognitive tests to find out the students' background), and for knowing the child's character (whether the student is happy or not) at the end of the lesson. Diagnostic assessment planning is made by the teacher;
 - f. Delivery of material can be thematic and subject, returned to the educational unit; and
 - g. Free subject hours per week; And
 - h. You can choose which material is prioritized and taught because it is based on the Module Teach, not a textbook.

Some of these changes become obstacles for teachers at the planning stage. Obstacle This is in terms of preparing teaching modules. In its preparation, this teaching module must be able to implement the flow of learning objectives that have been developed by the teacher from learning outcomes with the Pancasila student profile as the target. Apart from that, teaching modules must be arranged according to the phase or stage of student development and also what the students will learn based on the learning objectives that have been created. So teachers are given the freedom to develop teaching modules, but not apart from the components and aspects that have been determined in the teaching module. This is in line with Hasibuan (2022) who explains that teachers must have free and independent thinking in designing learning modules that suit the characteristics of students.

The first obstacle is understanding how to derive/translate CP into learning objectives. Teachers do not yet understand how to derive/translate CP into learning objectives, so

the material provided does not refer to essential material, but still refers to the previous curriculum. In fact, Ningsih (2022) states that the teaching modules in this curriculum refer to learning plans where the teaching modules are also adapted to the needs of students. During the process of designing teaching modules, teachers are given the freedom to design their own teaching modules.

The second obstacle, student heterogeneity in the class is related to the level of student understanding, students' thinking abilities, students' skills, learning styles, level of confidence, and level of concentration. Teachers have difficulty determining the learning and assessment models to use. The third obstacle is limited teacher references regarding learning models that can accommodate differentiated learning. Teachers have difficulty determining the right learning model so it is trial and error. The fourth obstacle is limited facilities and infrastructure owned by schools, especially internet networks, hardware such as computers/PCs. Teachers have difficulty finding various kinds of reference sources for examples of differentiated learning. The fifth obstacle is that teachers have limited initial knowledge and mastery of material and contextual matters, so they have difficulty in preparing trigger questions.

Discussion

Seeing these obstacles, It can be concluded that in the process teachers still experience problems in creating this teaching module, this is because this teaching module is something new from before. Thus, the preparation process takes a little time. This is because the format of this teaching module is different from the RPP developed in the 2013 Curriculum. Apart from that, teachers are still not optimal because many teachers still have difficulty understanding the preparation of teaching modules. Research conducted by Maulida (2022) shows the same thing, where teachers are still not able to develop teaching modules optimally, this is because there are still many teachers who do not really understand the techniques for compiling and

developing teaching modules, especially in this curriculum. In line with this (Arjihan, 2022) in his research explains that the difficulty in developing this teaching module is reflected in the difficulty of adapting the materials, media and facilities available at the school. Indeed, the challenge for teachers in implementing an merdeka curriculum in schools is that teachers must take the time to prepare creative, innovative and challenging lessons every day. "Teacher involvement in the curriculum development process is important to align curriculum content with the needs of students in the classroom" (Alsubaie, 2016).

Implementation of learning in implementationThe Merdeka Curriculum takes the form of differentiated learning. There are several indicators that teachers must have in implementing differentiated learning 1) teachers are able to create a learning environment that can stimulate students to achieve high learning goals, 2) teachers are able to respond to students' learning needs which include learning plans, learning resources, learning strategies , different learning media, assignments and assessments 3) teachers can manage or organize productive classes by including procedures and routines that can allow flexibility with a clear structure even though they carry out different activities but the class can run well (Aisyah, 2019). "The concept of the independent learning policy is that teachers as educators are able to create a comfortable learning atmosphere and are able to generate enthusiasm for learning so that students do not feel burdened by the material presented by the teacher" (Yusuf & Arfiansyah, 2021).

The first obstacle is inThe implementation of learning is linking lesson material with other relevant knowledge. Teachers' limitations in understanding the material and accessing information make it difficult for teachers to link lesson material with other relevant knowledge. The second obstacle is using opening questions that can stimulate students' thinking. Limitations in understanding and accommodating student heterogeneity make it difficult for teachers to create opening questions that can be accepted by all students. The third obstacle is encouraging students to develop questioning skills to build

students' curious nature. Teachers' limitations in understanding students' psychology and the habit of being critical means that teachers are less able to understand how to encourage students to ask questions. The fourth obstacle is providing feedback that can encourage students to continue learning. Teachers have difficulty determining a language style that suits students' cognitive development. Teachers have difficulty translating knowledge into language that is easily understood by students.

Difficulties in implementing differentiated learning are caused apart from understandingand teacher skills are also caused by student heterogeneity. To meet the needs of different student abilities, various methods are needed. According to Atik Siti Maryani (2021) in Aisyah (2019). There are at least 3 types of methods, namely content differentiation, process differentiation and product differentiation. Content differentiation has the scope of learning readiness analysis which refers to the material to be taught, the teacher as a facilitator can maintain student interest and provide opportunities for students during the learning process so that students can be actively involved, then the teacher's role is in mapping student learning needs based on indicators. learning profile so that it can provide opportunities for students naturally and efficiently according to the required methods. Second is process differentiation where teachers can analyze the learning that students will carry out both independently and in groups. In this case, teachers need to consider who needs help and guiding questions in learning before students learn independently. Process differentiation includes tiered activities, providing guiding questions, creating individual agendas, facilitating time duration for students to complete their assignments, developing visual, auditory and kinesthetic learning styles, and creating groups according to the abilities and interests of each student. Third is product differentiation, where the product referred to here is the output of learning that has been carried out such as essays, speeches, presentations, etc. This product differentiation aims to broaden students' understanding and challenge students' creativity

and expression of the learning they desire. In this product differentiation, the role of the teacher must meet student expectations, including the teacher determining the work indicators to be achieved, the product must contain content, plan the work process, and design the expected output from the product.

After designing and implementing learning, the next step is evaluation or assessment.

The assessment of the implementation of the Merdeka curriculum is as follows:

- a. At the beginning of learning there must be a diagnostic test (divided into 2, namely cognitive tests for learning and non-cognitive tests to find out the student's background), and to find out character. children (happy/unhappy students) at the end of learning;
- b. KKM is abolished;
- c. Teaching modules can be made 1 week per module, and in them there are formative tests, summative tests;
- d. The results of long-term project learning are more likely to change character/attitude, not the skills;
- e. In There are two report cards for the Merdeka curriculum implementation learning assessment, namely the academic assessment report and the project assessment report;
- f. Learning outcomes in the form of report cards will be reported and ratified by the school principal and reported also to parents/guardians of students.

The first obstacle is carrying out preliminary assessments only at the beginning of the learning year. The teacher should carry out an assessment at the beginning of each new material to be studied.

This matter due to the paradigm of teachers who feel they only need a preliminary assessment at the beginning of the school year, in where the results can be used throughout the school year. The second obstacle, reflecting on learning to understand personal strengths and areas that students still need to develop. The teacher still has not carried out this reflection because the teacher has not been able to identify, translate and conclude the implementation of the learning that has been carried out. Apart from that, teachers are also not used to doing this at the end of each lesson. The third obstacle is carrying out formative assessments of each existing form of assessment. Teachers do not yet understand how to carry out formative assessments.

Conclusion

Teachers experience obstacles in implementing the Merdeka curriculum in Mathematics learning. Teachers experience obstacles in planning, implementing and evaluating learning. Barriers to learning planning include (1) teachers lacking understanding regarding CP as learning objectives; (2) student heterogeneity in the class; (3) currently there is often a lack of references to differentiated learning models; (4) there are limited school facilities and infrastructure; (5) limited initial knowledge and subject matter. Barriers to the implementation of learning include (1) limited understanding of the subject matter with other relevant knowledge; (2) limitations in accommodating opening questions; (3) limited psychological understanding of students; (4) limitations in translating knowledge into language that is easy to understand.

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