Original Research Article

Merdeka BelajarCurriculum Science Textbook: Integration of Learning Implementation for Critical Thinking Skills

ABSTRACT

Merdeka Belajar Curriculum is implemented with the aim of training students' independence in thinking. Textbooks are an important part of creating learning resources. Through textbooks, teachers will find it easier to carry out learning and students will be more helped and easier to learn. The aim of this research is to examine science textbooks integrated with critical thinking skills that are practically applied to support the Merdeka Belajar Curriculum in junior high schools.This type of research uses educational *design research-based development, the intervention* developed is a textbook that must meet the criteria of being valid, practical and effective.The research design used is 4-D, namely *Define, Design, Develop,* and *Disseminate*. Determining the sample in this research used *purposive sampling*. Subject selection is carried out to provide the required data and information. The samples for this research were students in class VIII junior high school at the Besuki Ex-Karisidenan. Time for conducting research in Odd Semester 2023/2024.The percentage results during the three meetings, the average implementation of the integration of learning for critical thinking skills using the science textbook in the Merdeka Belajar Curriculum was 0.93. The process of training students to think critically is needed in the learning process so that students can face and answer the challenges of the future. The ability to solve problems requires the ability to think critically in looking for alternative ways to find solutions.

Keywords: Critical Thinking, Textbooks, Science, Curriculum, Merdeka Belajar

1. INTRODUCTION

One of the important components of the education system is the curriculum, because the curriculum is an educational component that is used as a reference by every educational unit, both by managers and organizers, especially by teachers and school principals. The curriculum is a tool used to achieve educational goals and as a reference in the implementation of education [1]. Curriculum is the heart of education. Much of the success of education lies in the success of the curriculum, from planning to implementation and assessment. So, in order to ensure the success of the curriculum, it is necessary to manage it appropriately and systematically [2].

Freedom to learn is a policy of the Ministry of Education and Culture of the Republic of Indonesia. The Merdeka Curriculum is implemented with the aim of training students' independence in thinking [3][4]. The most important core of freedom of thought is directed at teachers. If teachers are not yet independent in teaching, of course students are also not students in thinking. The Merdeka Curriculum is a curriculum with diverse learning. This curriculum focuses on essential content so that students have enough time to deepen

concepts and strengthen competencies. The Merdeka Curriculum is applied to train independence in thinking [5][6]. With freedom to learn, students can develop their potential according to their talents and interests because students also have different abilities in absorbing the knowledge conveyed by the teacher.

Learning resources are something available in the learning environment that functions to help the learning process for both teachers and students. Textbooks are an important part in realizing learning resources [7]. Through textbooks, teachers will find it easier to carry out learning and students will be more helped and easier to learn [8]. Textbooks can be made in various forms according to the needs and characteristics of the material presented [9][10]. Textbooks are prepared with the aim of providing textbooks that suit students' needs, namely textbooks that suit the characteristics and setting or social environment of students. Presenting textbooks is a teacher's main competency in designing activities and what kind of thinking skills students must master.

Implementing good science learning needs to be equipped with activities that allow students to follow the process of events and encourage thinking processes, for example experiments, practicums or demonstrations to show the emergence of science products in the form of concepts, formulas and laws. However, the results of the needs analysis in junior high schools in the Besuki Ex-Karisidenan show that the implementation of science subject activities shows obstacles caused by limited textbooks that integrate high-level thinking skills with the Merdeka Belajar Curriculum. The results of this analysis reinforce that studying science through processes or carrying out procedures in the form of models to explore or understand science concepts can be said to almost absolutely have to be done, especially focusing on the curriculum [11].

Education must continuously adapt and adjust to the development of modern science and advanced technological innovation, so that it remains relevant and contextual to changing times. Implementation of the development of the Merdeka Belajar Curriculum can be done through curriculum materials [12][13]. Therefore, implementing curriculum development can be done by including it in critical thinking skills textbooks. The process of training students to think critically is needed in the learning process so that students can face and answer the challenges of the future [14]. The ability to solve problems requires the ability to think critically in looking for alternative ways to find solutions [15]. The textbook will contain six core indicators of critical thinking abilities involved in the critical thinking process. Critical thinking indicators include interpretation, analysis, evaluation, inference, explanation, and self-regulation. Therefore, the aim of this research is to examine science textbooks integrated with practical critical thinking skills to support the Merdeka Belajar Curriculum in junior high schools. Based on the conditions and description above, no matter how good the curriculum is, the potential of teachers in teaching using textbooks greatly influences the achievement of educational goals in accordance with process standards in implementing the curriculum.

2. LITERATURE REVIEW

The Merdeka Belajar Curriculum policy is implemented to accelerate the achievement of the national goals of education, namely increasing the quality of Indonesian human resources which have superiority and competitiveness compared to other countries. The quality of superior and competitive human resources is realized in students who have noble character and have a high level of reasoning [16]. Freedom to learn is a new breakthrough for the Minister of Education and Culture of the Republic of Indonesia to make the learning process in every school more effective and efficient. The positive impact of independent learning is aimed at teachers, students, and even parents [17]. Independent learning prioritizes students' interests and talents which can foster creative and fun attitudes in students. The Merdeka Belajar Curriculum answers all complaints about the education

system. One of them is that students' grades are only based on the realm of knowledge. Apart from that, freedom to learn makes teachers more free in their thinking so that students follow.

The development of textbooks can provide benefits including: (1) obtaining textbooks that are in accordance with curriculum demands and in accordance with the learning needs of students, schools and regions; (2) no need to depend on the text; (3) textbooks become richer because they are developed with various references; (4) increase the teacher's repertoire in writing; (5) building effective learning communication between teachers and students; and (6) students have more trust in teachers and teaching and learning activities will be more interesting [18]. Science is the science of how to study the universe in a systematic way, not studying concepts in the form of facts that can be remembered, but rather the discovery of knowledge related to the discovery process. Science is knowledge about everyday environmental conditions and even facts or phenomena that occur in the surrounding environment [19]. Science is related to how to find out about nature systematically. Science learning is not only a matter of memorizing, understanding concepts and facts that occur in nature, but is also a process of discovering science. Thus, it can also be interpreted that science is the science of natural phenomena which is demonstrated in the form of facts, concepts, principles and laws whose truth is tested and through a series of activities in the scientific method [20]. Science learning should direct students to find out and do something to gain information and understanding about the natural surroundings as the products and processes they have gone through. Apart from that, science learning not only emphasizes mastery of concepts, but also trains students to be skilled in relating them to everyday phenomena and thinking scientifically [21].

Independent learning prioritizes students' interests and talents which can foster a critical and pleasant attitude in students. The Merdeka Belajar Curriculum answers all complaints about the education system. Learning according to student achievement levels is one of the spirits of independent learning. Teaching to students is adjusted to their initial level of achievement and ability. The Operational Curriculum in the Merdeka Belajar Education Unit contains all learning process plans held in the education unit, as a guide for all learning implementation. Textbooks become a source of knowledge by adding Pancasila student profiles and project themes raised in three stages: introduction, actualization, and real action [16]. Apart from that, textbooks are integrated with critical thinking, which is a thinking activity which includes interpretation, analysis, evaluation, inference, explanation, and self-regulation [22]. Critical thinking skills are very important for students to face various problems, solve the problems they face, and make the right decisions. Critical thinking skills will train students to think logically and not accept things easily. Critical thinking is a complex process that requires higher cognitive skills in processing information [23].

3. METHODOLOGY

3.1 Types of research

This type of research uses educational design research-based development, the intervention developed is a textbook that must meet practical criteria or can be implemented in learning [24]. The research design used was 4-D, namely Define, Design, Develop, and Disseminate[25].

3.2 Sample, Place and Time of Research

Determining the sample in this research used purposive sampling. Subject selection is carried out to provide the required data and information. The samples for this research were students in class VIII junior high school at the Besuki Ex-Karisidenan. Time for conducting research in Odd Semester 2023/2024.

3.3 Research Stages

The research stages can be described as follows.

3.3.1 Define Stage

The stage used to determine the development needs required in learning. Needs analysis is an analysis of the results of observations of textbooks used in the Merdeka Belajar Curriculum. Student analysis is an analysis of the results of students' observations regarding the need for critical thinking skills. Concept analysis is an analysis of science material in junior high school which is suitable for testing the development of integrated textbooks for critical thinking skills. Task analysis is an analysis of the Competency components of science lessons in junior high schools in the Merdeka Belajar Curriculum. The formulation of learning objectives is the formulation of science learning objectives by learning using textbooks integrated with critical thinking skills, for test level.

3.3.2 Design Stage

Determining the content format design and display design of textbooks integrated with critical thinking skills based on the Merdeka Belajar Curriculum.

3.3.3Development Stage

Validation of the draft textbook integrated with critical thinking skills by experts, limited testing of the draft textbook integrated with critical thinking skills which has been validated by experts.

3.3.4Disseminate Stage

Extensive testing or testing of the use of integrated textbooks on critical thinking skills that have been validated by experts and preparation of reports.

3.4 Data analysis

Analysis of the practicality of the module can be seen from the results of observations of implementation and obstacles during learning using integrated critical thinking skills textbooks. Observations of learning implementation were carried out by observers using observation sheet instruments. Observers put a check mark (√) in the assessment column. Learning implementation observation scores are made on a scale ranging from 1-100, and processed using the following formula [25]:

$$\text{Implementation of Learning} = \frac{A}{B} \times 100$$

Description:
A = Total observation value of learning implementation
B = Maximum value

Learning implementation data is included in the following learning implementation categories.

Table1.Categories of results of observations of learning implementation

Skor	Category
0 – 39	Not good
40 – 59	Not good
60 – 79	Pretty good
80 – 100	Good

4. RESULTS AND DISCUSSION

Implementation of learning is a process that occurs or a reciprocal process between teachers and students and learning media to achieve the goals in the curriculum [26]. This research was carried

out by implementing integrated learning implementation for critical thinking skills using the Merdeka Belajar Curriculum science textbook. This research was carried out in three meetings according to predetermined procedures. The research was carried out for students in class VIII junior high school at the Besuki Ex-Karisidenan. At the integration stage of learning implementation, researchers and teachers began to use the Merdeka Belajar Curriculum science textbooks in the learning process. During teaching and learning activities, the researcher acts as an observer, namely observing the course of the learning process from beginning to end. In the observation stage, researchers observed the changes that occurred after implementing integrated learning implementation for critical thinking skills using the science textbooks of the Merdeka Belajar Curriculum.

Observations were made during the learning process. The researcher observed the science learning process based on the observation sheet that had been prepared. The percentage of integration of learning implementation for critical thinking skills using the Merdeka Belajar Curriculum science textbook at the first meeting was 0.93 in the very good category. This shows that there are several aspects that are working well. Observers assess the introductory aspects as generally quite good. The core activities are categorized as quite good, but the closing activities are still categorized as not good. There are several aspects which are categorized as quite good, namely the aspect of providing information about the use of science textbooks in the Merdeka Belajar Curriculum. This aspect influences the aspects in the next step so that the criteria for this advanced aspect are categorized as quite good, namely the aspects of planning in conducting discussions, guiding each other in groups, presenting the results of discussions, asking questions to each group, and giving awards. This happens because teachers are not used to and do not have enough practice with the integration of learning implementation for critical thinking skills using the science textbooks used in the Merdeka Belajar Curriculum.

At the second meeting the average percentage of implementation was 0.93 which was categorized as very good. This shows that all aspects have not been implemented well, which can be seen from the average scores and categories given by observers, in the introductory, core and closing activities in the quite good category. At the third meeting, the average percentage of implementation of the integration of learning for critical thinking skills using the science textbook in the Merdeka Belajar Curriculum was 0.94, indicating that all aspects or stages of learning went very well. The results of these observations are analyzed to see whether the actions taken can improve the implementation of learning in science subjects. The average learning implementation is as follows:

Table 2. Results of Implementation of Learning Implementation Integration

Activity	Meeting			Average Score	Criteria
	1	2	3		
Introduction	0,87	0,94	0,90	0,90	Very good
Core	0,96	0,96	0,94	0,96	Very good
Closing	0,95	0,90	0,96	0,94	Very good
Average	0,93	0,93	0,94	0,93	Very good

One of the most important components in education that is often overlooked is the curriculum. Even though the curriculum has a very important and strategic position. Curriculum is a description of the vision, mission and educational goals of an institution or educational institution. The curriculum is also a central value content that will be transformed to students to achieve educational goals [5]. The Merdeka Curriculum is a curriculum with diverse intra-curricular learning, the content will be more optimal so that students have enough time to explore concepts and strengthen competencies. Teachers have the freedom to choose various teaching tools so that learning can be tailored to students' learning needs and interests [3].

5. CONCLUSION

The Merdeka Curriculum is a curriculum with diverse learning and focuses on essential content so that students are able to hone critical thinking so they can deepen concepts and strengthen competencies to develop their potential according to their talents and interests. Based on the percentage results during three meetings, the average implementation of the integration of learning for critical thinking skills using the science textbook in the Merdeka Belajar Curriculum was 0.93. It is hoped that the Science Textbook can help improve students' critical thinking skills to support the implementation of the Merdeka Belajar Curriculum in junior high school. Science learning is not just scientific knowledge, but contains science content, process skills and dimensions that focus on the characteristics of scientific attitudes and character. Science learning is not only useful in terms of the material but is also useful for instilling the values contained in the learning process.

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