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STUDENT RESPONSES TO USING THEMATIC INTEGRATED MODULE BASED ON SCIENTIFIC APPROACH TO IMPROVE CRITICAL THINKING SKILLS

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Abstract

This research aimed to describe students' responses to using thematic integrated module based on scientific approach to improve critical thinking skills on the theme of My Dreams in grade 4 MI Mambaul Ulum Landean Plumpang Tuban. The research method used in this research is descriptive quantitative research. Data collection using test instruments and questionnaires. Analysis of test results showed an average percentage of 79.2% with critical criteria. Analysis of student responses with questionnaires showed that 82% of students stated that the use of thematic modules could improve critical thinking skills.

Key words: *Students' responses, Thematic Integrated Module, Scientific Approach, Critical Thinking Skills.*

Introduction

The learning process is the process of developing all potential students and aims to successfully master the material in accordance with the indicators that have been set. Learning is no longer an effort to convey knowledge, but also an effort to create an environmental system that instructs students so that learning objectives can be achieved optimally. The achievement of this learning objective is an indicator of the success of the learning process.

Sis one of the objectives of the Education Unit listed in the Curriculum Content Standard 2013 in Government Regulation No. 17 of 2010 on The Management and Implementation of Education that "education aims to build the foundation for the development of the potential of students to become human beings who are knowledgeable, capable, critical, creative, and innovative." Therefore, the implementation of learning is currently directed in an effort to develop critical thinking skills and innovative attitudes ofstudents. Criticalthinking is a thought that marks a certain process, which combines knowledge, mathematical reasoning, and cognitive strategy, to be able to solve problems and make decisions on a reflection basis (Arumsari et al., 2019). Critical thinking aims to test an opinion or idea, including considering or thinking based on the opinion submitted (Astuti et al., 2020). According to Azizah et al., (2019), Improving the ability of critical thinking students can improve the quality of human resources, so that it can have competitiveness and spirit of Pancasila in the current era

ofdisruption. The improvement of students' critical thinking skills needs to be raised with the aim that students are accustomed to solving the problems faced, as well as being able to filter the truth of the information they receive. Critical thinking is an important component that needs to be mastered by students (Fitriani et al., 2020), but it must also be instilled early, both in school,at home and in the community (Ahmatika, 2017).

The improvement of students' critical thinking skills is inseparable from the thematic learning curriculum 2013 by integrating scientific approaches. Thematic learning based on scientific approach is a process of learning activities designed in such a way as to make students actively construct knowledge through scientific stages (observing, questioning, gathering information, processing information and communicating)(Ratnasari &-, 2016). The learning process that implements scientific approach will lead to 3 areas of competence, namely: attitude, knowledge and skills (Agustiningsih, 2015). Such a learning process is expected to be able to form students who are creative, critical, productive and innovative.

Thematic learning based on scientific approach will stimulate students' critical thinking ability, with critical thinking ability students will be able to solve problems effectively, as well as be able to construct their concepts/ knowledge. Fisher in (Fristadi &Bharata, 2015) presents six indicators of critical thinking, namely:(1) identifying problems,(2) collecting various relevant information, (3) putting together a number of alternative problem solving, (4) making conclusions,(5) expressing opinions,and (6) evaluating arguments.

Facts in the field show that learning activities are generally less encouraging on improving critical thinking skills. Based on the results of interviews with grade IV teachers at MI Mambaul Ulum Landean Plumpang Tuban, information was obtained that students lacked interest in asking about the material studied, this happened because students still have difficulty in understanding the material. In addition, in the delivery of materials are also still dominant active teachers. Teachers use lecture methods more, whereas passive students only listen and copy what the teacher describes. As a result, students' thinking abilities are poorly trained.

In anticipation of the problem, it is necessary to find alternatives so that the learning is appropriate and can develop the critical thinking skills of students. In the implementation of integrative thematic learning, teachers are required to be creative in choosing the media or teaching materials to be used. The ability attached to the figure of a professional teacher is one of them related to the ability and

develop the field of science pursued or teaching materials that are in accordance with the context of curricular and the needsof students (*pedagogical content knowledge*). The important thing that must be mastered by teachers is to be able to provide teaching materials (materials) containing a set of materials that are systematically arranged both written and unwritten so as to create an atmosphere that allows students to learn. In choosing the right teaching materials the teacher must also adjust the characteristics and environmental conditions of the students.

The characteristics of students who vary in absorbing lessons make teachers must be able to design teaching materials that refer to individual students. Therefore, there needs to be teaching materials that can be used as a means of self-learning by students. One alternative teaching material that can be used is the module. According to Purwanto (2007) Module is one of the teaching materials that are systematically designed based on a certain curriculum and packaged in the form of the smallest learning unit and allows to be studied independently by students in a certain time. Systematic and interesting learning materials are expected to motivate students to learn independently outside the classroom. So that the learning process will still be able to take place until students can master the material presented.

Some studies state that the use of modules in learning at the elementary school level has a positive impact. As research conducted by Rahmawati et al., (2019) which states that the use of modules can improve student learning outcomes with a percentage of effectiveness of 70.27% in effective criteria. Research was also conducted by Imran et al., (2020) that tingkat completion of student learning outcomes reached 87% by using modules in learning. Inaddition, research was also conducted by Utami et al., (2021) that students' learning interests with the use of modules gained a percentage of 96% with good categories. Based on the above research, shows that the module is effective and can be used as an alternative teaching material for teachers or students at the elementary school level.

The use of thematic modules as an alternative teaching materials in MI Mambaul Ulum Landean Plumpang Tuban is considered necessary. Integrative thematic modules based on a scienative approach to the theme of My Ideals present activities that can train students' critical thinking skills. The purpose of this study is to describe students' response to integrative thematic modules based on scientific approaches in improving students' critical thinking skills.

Method

This research uses descriptive analysis method with quantitative approach. Descriptive research is a study that seeks to describe a symptom, event, event that occurs in the present (Sudjana, 2001). Quantitative descriptive methods describe students' response to the use of integrative thematic modules based on scientific approaches in improving critical thinking skills measured through numbers then described. The population of this study is grade 4 students of MI Mambaul Ulum Landean Plumpang Tuban. The sample was chosen with *purposive sampling* technique of 30 students.

Data retrieval using test and questionnaire techniques. The instrument used has been through validity and reliability tests, so the instrument is feasible to use. The test results are then analyzed based on six aspects and critical thinking indicators.

No	Critical Thinking Aspects	Indicator
1	Identifying Problems	Able to identify questions/questions
2	Collect a variety of relevant information	Able to search for material information from questions
3	Build a number of troubleshooting alternatives	Able to provide alternative solutions to the problems studied
4	Make conclusions	Able to draw conclusions based on relevant facts/evidence
5	Expressing an opinion	Able to give opinions and exchange opinions on topics discussed
6	Evaluate arguments	Able to choose the right solution to solve the problem

Table 1. Critical Thinking Aspects and Indicators

Problem analysis is used to analyze students' thinking abilities. The score measurement uses the following formulas and criteria (Endriani et al., 2018).

$$\textbf{Persentase hasil} = \frac{\text{skor jawaban siswa}}{\text{Skor total}} \times 100\%$$

percentage	category
80% < x ≤ 100%	Very critical
60% < x ≤ 80%	critical
40% < x ≤60%	Quite critical
20% < x ≤ 40%	Less critical
x ≤ 20%	Not critical

Table 2. Critical thinking criteria

Forthe questionnaire instrument used is a closed questionnaire, the questionnaire contains 10 questions with 2 answers yes or no. The questions asked to know the response of students to integrative thematic modules based on scientif approach in improving critical thinking skills, namely as follows:

No	Question Indicator
1	Enjoy learning using integrative thematic modules based on scientific approach.
2	Easily understand the description of the material in integrative thematic modules based on scientific approaches.
3	More active in learning by using integrative thematic modules based on scientific approach.
4	Do not feel difficult when doing tasks and critical thinking skills that exist in the thematic module integrative based scientific approach.
5	Have the courage and confidence to ask about material that is still unclear.
6	The material description presented is detailed and accompanied by examples in daily life.
7	Learn independently without the help of a teacher.
8	More critical and learn to solve problems through student activities.
9	Encourage curiosity to search for information and discover new ideas.
10	Can conclude a problem well.

Table 3. Student Response Question Indicators to Integrative Thematic Modules Based on Scientific Approaches to Improving Critical Thinking Skills

As for data analysis is calculated by using the formula percentase as follows.

$$P = \frac{F}{N} x\ 100\%$$

information:
P = Perflashlight sought
F = Frequency
N = Number of respondents

The percentase isthen interpreted based on interpretation criteria (Atiqoh, 2020).

Percentage	category
85% ≤ P	Very positive
70% ≤ P < 85%	positive
50% ≤ P < 70%	Less positive
RS < 50%	Positive Tidak

Table 4. Student response criteria

RESULTS AND DISCUSSION

This study seeks to describe students' response to the use of integrative thematic modules based on scientific approaches in improving students' critical thinking skills. The results of this study are described as follows.

1. Analysis of Test Results Based on Critical Thinking Aspects

Analysis of test results is conducted based on aspects of critical thinking ability. The results of each aspect analysis are poured in the form of the following tables and graphs.

No	Critical Thinking Aspects	Average Value (%)	criterion
1	Identifying Problems	87,4	Very critical
2	Collect a variety of relevant information	77,2	critical
3	Build a number of troubleshooting alternatives	73,7	critical
4	Make conclusions	83,3	Very critical
5	Expressing an opinion	82,9	Very critical
6	Evaluate arguments	71,2	critical

Table 5. Test Result Analyst

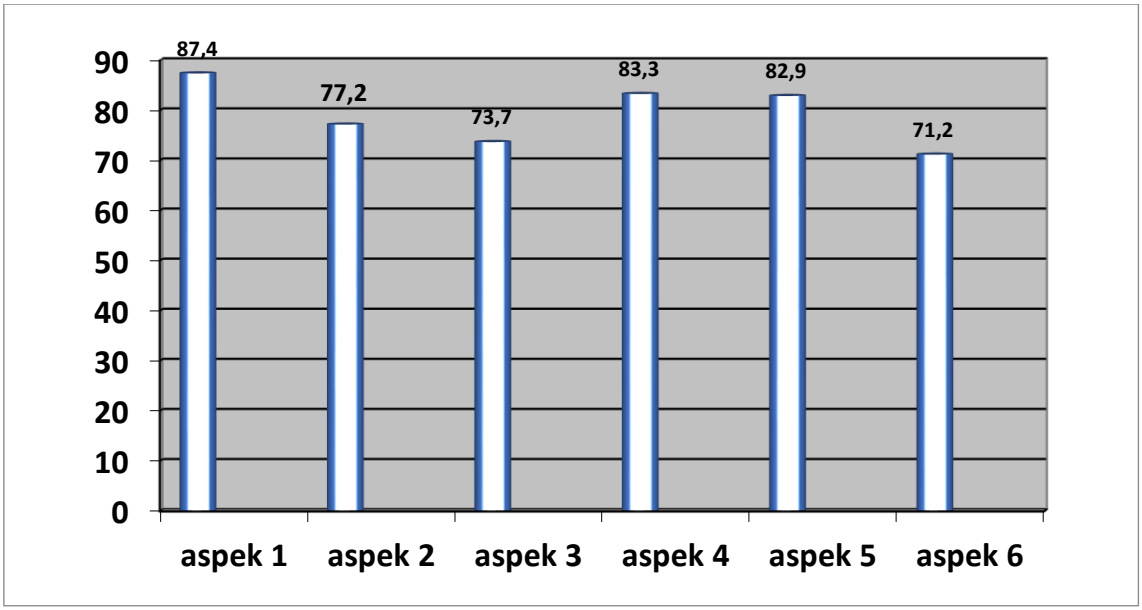

Figure 1. Critical Thinking Test Results

Based on table 5 and chart drawing 1,the average value in aspect (1) identifies the problem at 87.4%; (2) collect 77.2% of relevant information; (3) compile a number of troubleshooting alternatives of 73.7%; (4) make a conclusion of 83.3%; (5) expressed an opinion of 82.9%; and (6) evaluates the argument 71.2%. The analysis of the test results showed that the use of integrative thematic modules based on scientific approaches can improve students' critical thinking skills. Of the six aspects of critical thinking obtained three aspects with very critical criteria, namely criteria (1) identifying problems; criteria (4) making conclusions;and criteria (5) expressing opinions. The other three aspects indicate critical criteria, namely criteria (2) collecting various relevant information; criteria (3) develop a number of troubleshooting alternatives; and criteria (6) evaluate arguments.

2. Analysis of student responses based on questionnaires

Analysis of students' responses to integrative thematic modules based on scientific approaches in improving critical thinking skills is poured in the form of the following tables and graphs.

No	Question Indicator	Frequency		Percentage (%)	
		already	do not	already	do not
1	Enjoy learning using integrative thematic modules based on scientific approach.	30	0	100	0
2	Easily understand the description of the material in integrative thematic modules based on scientific approaches.	21	9	70	30

3	More active in learning by using integrative thematic modules based on scientific approach.	26	4	86	14
4	Do not feel difficult when doing tasks and critical thinking skills that exist in the thematic module integrative based scientific approach.	23	7	76	24
5	Have the courage and confidence to ask about material that is still unclear.	25	5	83	17
6	The material description presented is detailed and accompanied by examples in daily life.	23	7	76	24
7	Learn independently without the help of a teacher.	26	4	86	14
8	More critical and learn to solve problems through student activities.	27	3	90	10
9	Encourage curiosity to search for information and discover new ideas.	22	8	73	27
10	Can conclude a problem well.	24	6	80	20
	Average			82	18

Table 6. Results of students' response to integrative thematic modules based on scientific approach in improving critical thinking skills

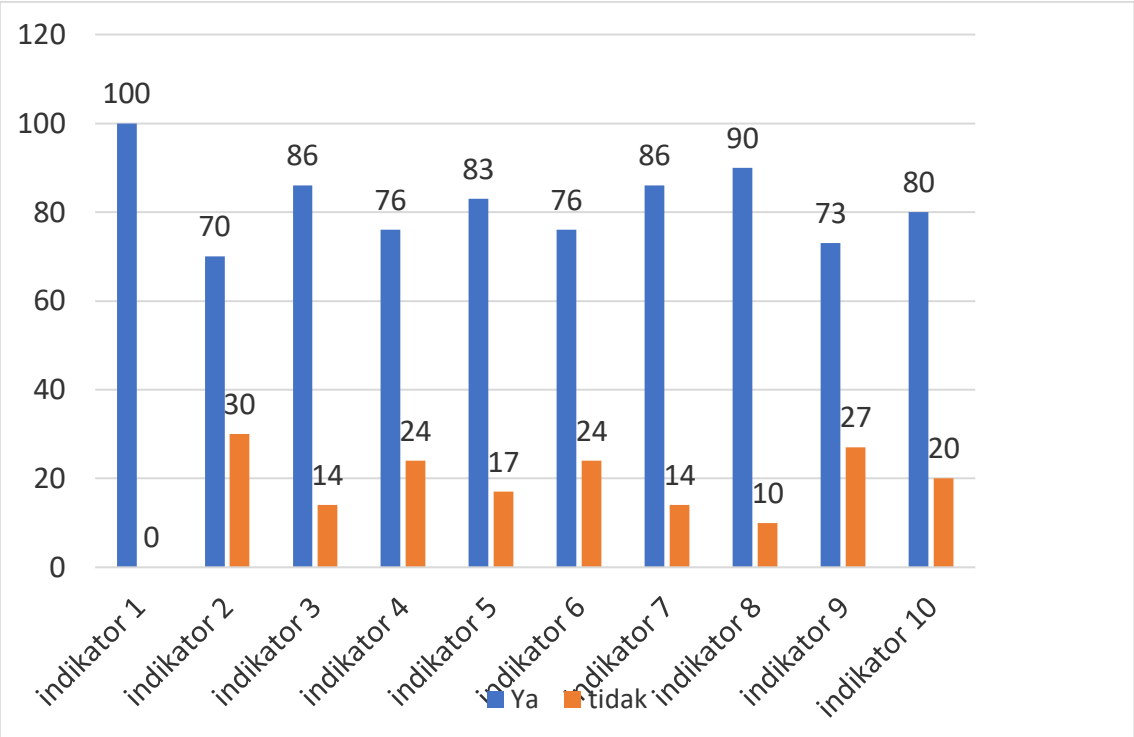

Figure 2. Student Response Questionnaire Results

Based on the tables and diagrams above, students' response to integrative thematic modules based on scientific approaches in improving critical thinking skills showed an average of 82% with a positive category. From question indicator 1 shows that 100% of students are happy to follow the learning by using integrative thematic modules based on scientific approaches to improve students' critical thinking skills, and 0% of students are unhappy using thematic modules. Question indicator 2 obtains a percentage of 70% of students easily understand the description of the material in thematic module. Question indicator 3 gets 86% of students more active in learning using thematic modules. Question 4 indicator shows that 76% of students do not find it difficult to work on the problems and tasks in the thematic module. The 5 question indicator shows a percentage of 83% of students have the courage and confidence to ask for material that is not yet understood. Question indicator 6 shows a percentage of 76% of students think that the description of the material in the thematic module is presented in detail and accompanied by questions in daily life. The question indicator 7 shows a percentage of 86% of students can study independently without the help of the teacher, since the description of the material presented in the module is clear, using informative and interesting language. Question indicator 8 shows the percentage of 90% of students is more critical and can solve problems through student activities contained in the thematic module. Question indicator 9 shows that 73% of thematic modules can encourage students' curiosity in seeking new information and ideas. As for the indicator question 10 shows the percentage of 80% of students can conclude a problem well .

The results of the analysis of tests and questionnaires showed that students gave a positive response to the use of integrative thematic modules based on scientific approaches in improving students' critical abilities. Fisher in (Fristadi &Bharata, 2015) suggests someone is said to think critically when able to demonstrate the ability to identify problems, gather a variety of relevant information, draw up a number of alternative problem solving, make conclusions, express opinions,and evaluate arguments. The module used is the thematic module of cita-citaku theme, which in its contents contains a description of the material and activities of students based on scientific approaches that are able to improve the critical thinking ability of students. In the research conducted by M.C. Rahmawati &Dewi (2019) showed that the application of learning using scientific approaches is able to have a significant influence on the achievement of student learning outcomes. Proses learning with a scientific approach, teachers must put

forward the condition of students to think scientifically by jointly being invited to observe, ask, try, reason and communicate (Karjiyati &Agustdianita, 2017).

Learning activities using modules encourage students to discover new information andideas, they are more critical and learn to solve problems. In line with the statement of Khairiyah &Faizah (2020) which states that teaching with modules provides opportunities for students to explore in solving problems according to the background of knowledge and habits of each individual. In addition, the use of thematic modules can also increase students' activeness in learning. They will actively ask questions and express their opinions, so that the critical abilities of students are felt. According to Paul &Elder (2012), someone who thinks critically is able to raise important questions and problems and can formulate them clearly and precisely. Critical thinking should be owned by every student and should be instilled earlyon.

Learning using modules can also train students' independence in learning. Students can still study with or without the help of a teacher. Therefore, the use of modules in learning is also flexible, can be used anywhere and anytime. This is in line with the opinion of Alvinia Glori Handoyo et al., (2018), that the module has *self instructional* characteristics, which allows students to learn independently. The opinion was also affirmed by Rafli &Adri (2019) who stated that the module is a solution so that students can learn actively and independently. The source of information is not only from the teacher but can be from various sources,one of which is the module. In the use of integrative thematic modules based on scientific approaches,teachers act as facilitators. The teacher directs students to be active and creative by presenting the problems that must be sought out with a scientific approach. Students are guided to be able to conclude problem solving well.

CONCLUSION

Based on the above research results, the average percentage of student test results shows critical criteria. In addition, from the response of students through questionnaires also get positive criteria. This shows that by using integrative thematic modules based on scientific approaches can improve students' critical thinking skills. With critical thinking skills, students will be able to solve problems effectively, as well as be able to construct theirconcepts/knowledge.

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