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RESEARCH ARTICLE

DEVELOPMENT OF LEARNING MODEL RIDE (READING, INVESTIGATION, DISCUSSION, AND EVALUATION) TO IMPROVE STUDENT'S CRITICAL THINKING ABILITY IN SMP

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Abstract

The study was underscored by an inadequate high school science lesson and students' critical thinking ability became inadequate. Student lack of interest and motivation in science subjects is a major problem to solve. With more critical thinking abilities, students can learn science lessons more easily. The purpose of this study is to determine the effectiveness of the model ride (reading, investigation, discussion, and discussion) in increasing the student's critical thinking abilities in middle school studies especially science lessons. The research model used in the study is research and development using the 4d model (four d models) including the four phases of define, design, models, and models. Research has shown that the ride model is an effective model for improving students' critical thinking abilities.

Introduction:-

Learning systems in many countries emphasize creativity, critical thinking, problem solving and decision making as key components in developing 21st century education systems. One of the skills needed in the 21st century is the ability to think critically[1]. The low quality of education can be seen from the teacher's teaching style. Traditional learning is textbook-like and teacher-oriented which results in passive learning and does not relate to real life. The teacher-centred approach has many limitations and several challenges, including treating all students equally, students attending classes with limited preparation, and formative feedback is often delayed.[2]. As a result, students' critical thinking skills do not develop properly and ultimately affect their learning outcomes[3].

The purpose of education should not only emphasize the acquisition of knowledge, let alone just memorize a number of facts and concepts, but must describe learning outcomes to the level of high-level thinking and even problem solving abilities. Good critical thinking skills are the main competencies that every student must have. Critical thinking is very important and can be used to face every challenge now and in the future. Critical thinkers will be able to evaluate and analyze any new information they receive[4]. Practicing critical thinking skills can be done by familiarizing themselves with learning activities and guiding students to solve situational problems that stimulate students' curiosity, not just conceptual problems.[5].

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One alternative to develop students' critical thinking skills is to use a problem-based learning model in classroom learning. In the Problem-based learning model, students learn to solve problems that reflect their experiences. Problem based learning (PBL) learning model or known as problem based learning model is a learning model that uses real problems encountered in the environment as a basis for acquiring knowledge and concepts through critical thinking and problem solving skills.(Fakhriyah, 2014). PBL is perfect for helping students become active learners because it places learning in real-world problems and holds students accountable for their learning[7].

Teachers need to make improvements, such as innovating in learning, especially using learning strategies and models to increase understanding and seek to increase student awareness. One way to create innovation is to develop a learning model designed to maximize the active learning process in the classroom. Learning is a process where students are active in building their own knowledge. In a learning process like this, the important role of a teacher is to create a learning atmosphere so that students are active in asking questions, able to build ideas, and carry out activities that can provide direct experience.(Purnasari, 2018). There are three reasons why active learning in schools is important, including: 1) active learning encourages independence, criticism and thinking, 2) active learning encourages collaboration, and 3) active learning can increase student engagement, motivation, and performance.[9].

The results of observations that have been made at SMPN 7 Jember, SMPN 2 Jember, and SMPN 4 Jember each science teacher in the junior high school stated that teachers continue to try to improve students' critical thinking skills. Every science teacher stated that critical thinking ability is one of the abilities that must be possessed by students in the 21st century, therefore critical thinking needs to be developed and improved.Usmeldi (2017)also stated that from the results of the analysis, it can be seen that the average critical thinking ability of students is 65.2%, which means that students' critical thinking skills are less than the expected ideal conditions, so improvements are needed. One of the causes of students having low critical thinking skills is the learning model applied does not foster students' motivation, interest, and critical thinking skills. The low critical thinking ability of students can affect their learning outcomes.

Rowe and colleagues define critical thinking as "the ability to draw reasonable conclusions based on evidence, logic, and intellectual honesty"[11].Experts also define critical thinking which has general aspects such as: Cognitive skills, such as interpreting, adding, inferring, analyzing, evaluating, proposing propositions, formulating and making decisions based on context, seeking relevant and reliable information, adaptable and can be changed flexibly and values prudence, humility, intellectual integrity and empathy. Now is the time for us as teachers to play a decisive role in changing the educational paradigm, helping students develop critical thinking skills and fostering human values. Critical thinking skills and subject matter are not mutually exclusive, but complementary.[12].

In realizing learning situations that support critical thinking skills in solving complex problems with the nuances of cooperation, cooperative learning strategies as collaborative learning designs are very appropriate to use. In addition, researchers also consider the essence of problem-based learning to improve students' critical thinking skills. Based on these problems, there is a need for innovation related to the development of models or strategies in science learning. The learning model chosen by the teacher must provide opportunities for students to carry out a series of scientific processes that are not only based on the achievement of formulas or knowledge but also the achievement of scientific skills and attitudes.[13]. Nurdyanto's research (2017) shows that cooperative learning is able to improve critical thinking skills and student learning outcomes better than conventional learning. The average conclusion of research on the cooperative learning model has a positive impact on students(Utami, 2021)

Based on this background, it is necessary to study and develop a learning model that prioritizes the roles of teachers and students. Improve students' critical thinking skills in science learning. Therefore, the topic of this research is entitled "Development of Learning Models".RIDE (Reading, Investigation, Discussion, and Evaluation)" ForImproving Students' Critical Thinking Ability in Junior High School.

Methodology:-

Research design

This type of research is research and development. The methods used in research and development are qualitative and quantitative methods. Research on the development of the RIDE learning model (Reading, Investigation, Discussion, and Evaluation) uses 4-D development research stages consisting of the definition stage (Define), the design stage (Design), the development stage (Develop), and the dissemination stage (Desiminate).) which was developed by Thiagarajan (1974).

Participants

This research was conducted at SMPN 7 Jember. For a small-scale test with 9 respondents, the test large scale with the number of respondents 29 people. Meanwhile, the dissemination stage was carried out at SMPN 4 and SMPN 2 Jember. The steps of the RIDE model can be seen in the following table.

Table 1:- RIDE Learning Model Activities.

Stage	Learning Model Activities
Reading	- Students read material from various relevant sources so that students more easily master the material to prepare for investigations
Investigation	- Students are faced with a problemthen students form groups and conduct an investigation by analyzing the problem solving of a problem
Discussion	- Students discuss with group members to find solutions to problems - Students present the results of group discussions into class discussions - Provide opportunities for other groups to provide feedback
Evaluation	- Drawing conclusions - Doing post-test

Research Instruments

Technical analysis of the data carried out, namely, data analysis of the effectiveness of the RIDE learning model. The data analysis used is descriptive analysis with a quantitative approach that produces the effectiveness criteria of the quantitative data of the research questionnaire instrument. The level of effectiveness of the learning model developed can be seen from critical thinking skills and student learning outcomes with scores, namely: a) critical thinking: very good (81.25% < 100%), good (62.25% < 81.25%) , not good (43.75% < 62.25%), and not good (25.00% < 43.75%), b) learning outcomes: (G > 0.7) High, (0.3 < G < 0.7) Medium, (G < 0.3) Low (Hake, 2002).

Results And Discussion:-

Critical thinking is needed to solve a problem, so critical thinking skills are needed in making a decision. Critical thinking is one part of higher-order thinking, which has an important role in the learning process, especially science learning (Norrizqa, 2021). Critical thinking skills measured in this study consist of critical thinking indicators which include, 1) simple explanations, 2) building basic skills, 3) concluding, 4) providing further explanations, 5) strategies and techniques.

Table 2:- Results of the Effectiveness of Critical Thinking Ability Small Group Trial.

No.	Indicator	Score	
		Meeting 1	Meeting 3
1.	Give a simple explanation (Elementary clarification)	80.55	77.77
2.	Building basic skills (Basic support)	77.77	80.55
3.	Conclude (Inference)	77.77	77.77
4.	Provide further explanation (Advanced clarification)	86.11	-
5.	Develop strategy and tactics (Strategy and tactics)	-	97.22
Average		80.55	83.32
Category		Very good	Very good

The data in table 2 is data on critical thinking skills in the small group test. The students' critical thinking ability for the small group test at the first meeting obtained an average critical thinking score of 80.55 with a very good category and at the third meeting an average critical thinking score of 83.32 with a very good category was obtained. Therefore, the trial activity was continued on a large-scale test.

Table 3:- Results of the Effectiveness of Critical Thinking Ability Large Group Trial.

No.	Indicator	Score	
		Meeting 1	Meeting 3
1.	Give a simple explanation (Elementary clarification)	78.44	73.27
2.	Building basic skills (Basic support)	81.03	91.4
3.	Infer (Inference)	87.06	80.17
4.	Provide further explanation (Advanced clarification)	73.3	-
5.	Develop strategy and tactics (Strategy and tactics)	-	75
Average		79.95	79.95
Category		Well	Well

The data in table 3 is data on critical thinking skills in the large group test. The results of the large group test with an average score at the first and third meetings are 79.95 in the good category.

Table 4:- Results of the Effectiveness of Dissemination of Critical Thinking Skills.

No.	Indicator	Score	
		SMPN 4	SMPN 2
1.	Give a simple explanation (Elementary clarification)	76.85	85.48
2.	Building basic skills (Basic support)	89.81	89.91
3.	Infer (Inference)	70.37	67.74
4.	Provide further explanation (Advanced clarification)	89.81	90.32
5.	Develop strategy and tactics (Strategy and tactics)	79.62	100
Average		81.29	86.69
Category		Very good	Very good

The data in table 4 is data on critical thinking skills in dissemination. At the dissemination stage, students' critical thinking skills for SMPN 4 Jember obtained an average total score of 81.29 with very good criteria. The students' critical thinking ability for SMPN 2 Jember obtained an average total score of 86.69 with very good criteria.

At the next stage of data collection, namely learning outcomes. Learning outcomes were obtained from the pre-test and post-test scores. Learning outcomes are the result of a person's learning process. Learning outcomes are related to changes in the person who learns. The form of change as a result of learning is in the form of changes in knowledge, understanding, attitudes and behavior, skills and abilities (Ridho et al., 2020).

Table 5:- Small group test learning outcomes.

Total students	Average Score		N- Gain	Category
	Pre-test	Post-test		
9	38.8	62.7	0.51	Currently

Based on table 5 above, the learning outcomes obtained from the small group test conducted at SMPN 7 Jember with a total of 9 students obtained the average pre-test score with a value of 38.8 and the average post-test score of 62.7 with a total of N- The gain is 0.51 with moderate criteria.

Table 6:- Large Group Test Learning Results.

Total students	Average score		N- Gain	Category
	Pre-test	Post-test		
29	37.41	61.21	0.52	Currently

Based on table 6 above, the learning outcomes obtained from the small group test conducted at SMPN 7 Jember with a total of 29 students obtained the average pre-test score with a value of 37.41 and the average post-test score of 61.21 with a total N-Gain of 0.52 with moderate criteria.

Table 7:- Dissemination Learning Outcomes.

Dissemination	Average score		N- Gain	Category
	Pre-test	Post-test		
SMPN 4 Jember	37.22	62.59	0.53	Currently
SMPN 2 Jember	44.67	68.87	0.61	Currently

Based on table 7 above, student learning outcomes in the dissemination class conducted at SMPN 4 Jember with a total of 27 students obtained the average pre-test score with a value of 37.22 and the average post-test score of 62.59 with a total N-Gain of 0.53 with moderate criteria. In the dissemination class conducted at SMPN 2 Jember with a total of 31 students, the average pre-test score was 44.67 and the post-test average score was 68.87 with a total N-Gain of 0.61 with moderate criteria.

Conclusion:-

From the research activities that have been carried out, it can be said that the RIDE model has been effective in improving students' critical thinking skills in junior high schools. In addition to increasing critical thinking skills, student learning outcomes have also increased. Thus the RIDE model can be used as a learning model that can improve critical thinking skills and learning outcomes in students. The ability to think critically will be difficult for students to have if the learning process does not apply a learning model that trains critical thinking skills. The learning process should not be concerned with memorization because it cannot improve critical thinking skills (Ridho et al., 2020).

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