
THE EFFECT OF RQA (READING, QUESTIONING, ANSWERING) LEARNING STRATEGY ASSISTED BY GOOGLE CLASSROOM FOR STUDENTS' COGNITIVE LEARNING OUTCOMES

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Abstract

This study aims to: 1) determine students' cognitive learning outcomes using RQA learning strategy assisted by Google Classroom on Static Fluids topic, 2) determine students' cognitive learning outcomes using expository learning strategy assisted by Google Classroom, and 3) to prove the effect of RQA learning strategy assisted by Google Classroom on students' cognitive learning outcomes on static fluids topic for class XI SMA N 1 Percut Sei Tuan. The type of research is a quasi-experimental research design with Pretest-Posttest Group Design. The population of this research is all students of class XI SMA N 1 Percut Sei Tuan which consists of 6 classes. The sample of this research was taken by using simple random sampling technique, namely class XI MIPA 5 as the experimental class and XI MIPA 6 as the control class, each consisting of 23 students and 20 students. The instrument used is achievement test, namely a multiple choice test consisting of 10 items. The results of data analysis showed the average pretest value of the experimental class was 54.35 and the control class was 47.50. After being given treatment, the average posttest value for the experimental class was 75.05 and the control class was 53.00. By using the one sample t-test obtained the value of Sig. (2-tailed) < 0.05 (0.00 < 0.05) so H_a is accepted and H_0 is rejected. So it can be concluded that there is a significant effect due to the use of RQA learning strategies assisted by Google Classroom on students' cognitive learning outcomes of XI MIPA on static fluids topic.

Keywords: *RQA learning strategy, cognitive learning outcomes, static fluids*

Education is one of the efforts made by humans which aims to produce human resources with good quality and quality who are able to face life's challenges and can compete globally. So, education is a system designed to achieve certain goals. The system in education is composed of several elements, including educators, students, interactions between educators and students, educational materials, and also the educational environment.

According to Kunandar (2013) efforts to improve the quality of education must be carried out by moving all components that become subsystems in an education quality system. The quality of education is determined in the classroom through the teaching and learning process. To achieve a good quality of education, the teacher must have the right strategy so that students can learn effectively and efficiently. The strategy referred to in this case includes, among others, models, methods, media, and learning patterns. These learning strategies, models, methods, and patterns are the main aspects of the teaching and learning process. A teacher must be careful in choosing the learning strategy he will use because it is a big responsibility of a teacher in shaping the learning experience of students.

Physics is an abstract subject of science. Therefore students should start develop imagination to understand the basic concepts in physics to improve maximum learning outcomes. Physics concepts must be absorbed by students in a relativeky limited time make physics is a difficult subject for students so that many students aren't maximal in learning process. It is related to learning activities that are often carried out by the teacher in the classroom. The process of physics learning in the school is still focused on the teacher as information who plays a dominant role in each learning process. Meanwhile the student only see and hear the teacher. It makes the students not truly understand the physics concept and couldn't be able to apply in their daily life. The expected learning strategy is a strategy that helps students develop the intellectual skills needed to ask questions and find answers. (Sihaloho *et al*, 2019)

Learning strategy is a sequence or pattern of teacher behavior to be able to accommodate all learning variables consciously and systematically. The learning strategy is a combination of several series of activities, how to organize student subject matter, materials, equipment and time used for the learning process in achieving the objectives of the learning activities that have been determined. This learning strategy is very much needed in the world of education, so that the teaching and learning system in the classroom does not become monotonous or boring and can help students develop their thinking patterns (Suparman, 2014).

Seeing conditions like this, it is very important for teachers to foster independent and active student learning. Student activeness in learning has a positive impact on learning progress, maturity, and point self-direction in active learning. Students activate their brains to think, express opinions, sharpen analysis, and answer various problems or questions logically and argumentatively. Therefore, it is important for teachers to use innovative learning. From so many innovative learning strategies, one of the most appropriate learning strategies to improve critical thinking skills and improve learning outcomes but which can still be done independently by students is the RQA (Reading, Questioning, Answering) learning strategy. The RQA strategy is a learning strategy based on constructivism theory (Bahtiar, 2013).

One of the strategies offered is to apply the learning strategy. Learning strategy can change the process process learning that has tended to teacher-centered is expected to change become a student-centered learning process. The student-centered learning process can result in the knowledge that is formed not lasting time that has an impact on the achievement of results low student learning (Sinuraya *et al*, 2013).

RQA (Reading, Questioning, and Answering) learning strategies can increase metacognitive awareness, metacognitive skills, and cognitive learning outcomes of students. This is because the

RQA strategy is a learning strategy that in its implementation is student-centered and demands the independence and activeness of students to prepare themselves before learning. (Mustika, 2019) In this study, researcher chose the RQA (Reading, Questioning, Answering) learning strategy because this strategy has a continuous learning syntax and supports each other in maximizing the improvement of student learning outcomes. The phases in RQA, which begin with reading, are basic learning skills, followed by questioning, in which these skills are acquired as a result of reading and making a resume. When students have understood the material they read, students are able to answer a number of related questions. These three components, when combined, will become an ability that can improve student learning outcomes. In addition, the RQA (Reading, Questioning, Answering) learning strategy is also very flexible and can be applied in face-to-face learning and online learning-based learning.

In addition, the enthusiasm of students in learning physics, especially low wave material, is due to the abstract concepts that exist in the wave material. Students stated that the teacher did not explain the concepts of waves and monotomy only focused on solving questions that were not too diverse, especially during the Covid-19 pandemic. And also assignments given by the teacher are not "forcing" students to learn and look for other references to deepen their knowledge in order to improve learning outcomes and students' critical thinking skills..

According to previous research, researchers stated that the habit of increasing knowledge through reading is increasingly being carried out due to the impact of technological developments. Most of the students prefer to play games with laptops or gadgets compared to reading both in class and outside the classroom, even though the role of reading is very large because reading is a source of information.

RESEARCH METHODS

This type of research is Quasi Experimental, in which this type of research aims to predict conditions that can be achieved through actual experiments. (Creswell, 2013)

This research will be conducted online at SMA Negeri 1 Percut Sei Tuan. The research location was chosen because high school level subjects are relevant to the research title. The time of this research is from October to November 2021.

The population in this study were students of class XI MIPA SMA Negeri 1 Percut Sei Tuan for the 2020/2021 school year. The sample in this study were all students of class XI MIPA 5 and XI MIPA 6 SMA Negeri 1 Percut Sei Tuan. The sampling technique used was simple random sampling.

The research instrument used to measure students' cognitive learning outcomes was in the form of 10 multiple choice questions. Before being used, the instrument was validated by experts and tested empirically to determine the level of validity and reliability. The hypothesis testing that researcher used is Paired sample t-test.

RESULT AND DISCUSSION

The research data in the form of students' cognitive learning outcomes were obtained from 2 classes, namely the experimental class and the control class. Based on the results of research that has been carried out to measure students' cognitive learning outcomes in the experimental class and control class at SMA N 1 Percut Sei Tuan, information was obtained that the class taught with the RQA learning strategy in the pretest obtained an average of 54.35 while the posttest increased by an average the average is 75.65. Meanwhile in the control class, the average pretest was 47.50 and the posttest was 53.00. The results of the statistical description can be seen in the following table:

Table 1. Pretest and posttest result data for experimental and control classes

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pretest Experiment	23	10	80	54.35	19.96
Post test Experiment	23	50	100	75.65	12.73
Pretest Control	20	10	90	47.50	22.21
Post test Control	20	20	90	53.00	16.89
Valid N (listwise)	20				

The data analysis was carried out by using Paired Sample T-test statistical test on cognitive learning outcomes of SMAN 1 Percut Sei Tuan students. Before the data was analyzed using the Paired Sample T-test, the normality test and the homogeneity test of variance between groups were first carried out. The summary of the Paired Sample T-test for pretest and posttest data of the effect of RQA learning strategy assisted by Google Classroom on students' cognitive learning outcomes on static fluids topic is shown in the following table:

Table 2. T-test result for pretest data

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest Eksperimen - Pretest Kontrol	11.500	28.704	6.419	-1.934	24.934	1.792	19	.089
Pair 1	Posttest Experiment - Posttest Control	25.000	17.622	3.940	16.753	33.247	6.345	19	.000

Based on the results of the two-party t-test or the similarity test of students' initial abilities in Table 2, the value of Sig. (2-tailed) of 0.089. If the value of Sig. (2-tailed) > 0.05 then H_0 is accepted, which means that the initial ability of students in the experimental class is the same as the initial ability of students in the control class.

Hypothesis testing uses a paired sample t-test to determine whether or not there is an effect of giving treatment RQA learning strategies assisted by Google Classroom on student learning outcomes. Based on Table 2 obtained the value of Sig. (2-tailed) of 0.000. If the value of Sig. (2-tailed) < 0.05 then H_a is accepted, which means that there is a significant effect of using RQA learning strategies assisted by Google Classroom on cognitive learning outcomes of class XI students on Static Fluids at SMA Negeri 1 Percut Sei Tuan.

Based on the results of the posttest data t test, the results of the hypothesis test were obtained, namely Sig. (2-tailed) < 0.05 ($0.00 < 0.05$) then H_0 is rejected and H_a is accepted, so it can be concluded that there is a significant influence from the use of RQA learning strategies on cognitive learning outcomes for students of class XI MIPA on Static Fluids. at SMA Negeri 1 Percut Sei Tuan. The effect is seen from the cognitive learning outcomes of students who follow the RQA learning strategy achieve higher results than students who take lessons with expository strategies.

The increase in students' cognitive learning outcomes in the experimental class when compared to the control class is due to learning using the RQA learning strategy to encourage students to be more independent, active, and more ready to participate in learning. In addition, learning with this RQA strategy trains students to read and understand the contents of the reading so that when learning takes place students already have a concept about the material they are learning (Corebima, 2009 and Bahtiar, 2013). The results of this study are in line with Bahri (2016) who stated that learning with the RQA strategy has the potential to empower students' cognitive skills and provide opportunities for students to learn from different sources. This is also in line with Imamah's research (2016) which states that the RQA learning strategy asks students to actively read the material and makes students active to ask questions about unknown material. In addition, students are also required to be active during the learning process and express their opinions and answer questions from other students.

Another advantage of the RQA learning strategy is that when students make questions and answer their own questions, this can strengthen students' cognitive abilities and can empower their thinking skills intentionally. This means that the learning carried out not only emphasizes mastery of the material, but also empowers metacognitive abilities. And through this stage of making individual questions and answers, it allows students to compete in a sporting manner for awards. This is in line with the research results of Candra, et al. (2011) which states that the activity of making questions makes students actively monitor and evaluate aspects that cannot be understood after reading and summarizing so that this activity intentionally strengthens students' cognitive

CONCLUSION

Based on research conducted by researchers, it can be concluded that there is a significant effect of using RQA learning strategy assisted by Google Classroom on students' cognitive learning outcomes on static fluids topic, this is shown by the Sig. 2-tailed t-test of posttest data which is $0.00 < 0.05$. Students' cognitive learning outcomes using RQA learning strategies assisted by Google Classroom on static fluid material in class XI SMA Negeri 1 Percut Sei Tuan increased by 21.3. Meanwhile, students' cognitive learning outcomes using expository learning strategies assisted by Google Classroom on static fluid material in class XI SMA Negeri 1 Percut Sei Tuan only increased by 5.50, where this increase was much lower than the experimental class.

ACKNOWLEDGMENTS

I am very grateful to everyone who supported me in carrying out this research. I would like to thank my parents who supported and motivated me to complete this research. I am also thanking you to Prof. Dr. Makmur Sirait, M.Si who has guided me from the beginning until the completion of this research. I also thank you to Prof. Motlan, M.Sc., Ph.D, Dr. Wawan Bunawan, M.Pd., M.Si, and Teguh Febri Sudarma, S.Pd., M.Pd who give a good suggestion for me in carrying out this research. Thank you for being an important part of my education completion until I was finally able to complete this research until it was completed.

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