

The effect of quick on the draw strategy on critical thinking skills of grade IV

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ABSTRACT

This study aims to determine whether the critical thinking skills of fourth-grade students are influenced by the application of Quick On The Draw-based learning strategies. This research methodology uses a quantitative approach with a quasi-experimental research design. The experimental class and control class received two different treatments as part of the Quasi Experiment Design research design. This study used two tests, namely validity and reliability tests needed to evaluate the test instrument. In addition, this study also used normality tests, homogeneity tests, and hypothesis tests. Of the three tests, the hypothesis test is the most important data analysis test used to determine whether Quick On The Draw strategy affects students' critical thinking skills. Where the results of the hypothesis test show that H_a is accepted or there is an effect of the Quick On The Draw strategy on students' critical thinking skills, in addition to hypothesis testing, the impact of this strategy can also be seen through the average value of students which results in a difference in the average value of the experimental class of 78.23% and the average value of the control class of 58.23%, so there is a difference of 20% between the two sets of data

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1. INTRODUCTION

Education can be said to be one of the tools used to improve learning and create a conducive atmosphere in the classroom, as well as a means for students to develop their potential. Activities related to teaching and learning have undergone significant changes in the modern era. Curriculum modification in education units is one way to see these changes. The independent curriculum places a strong emphasis on responsible, inclusive, and student-centered teaching methods (Novak, 2020). According to Alimuddin (2023), the goal of the program is to help students acquire 21st-century skills such as problem-solving, creativity, communication, and teamwork.

Susanto (2019) argues that the current condition of education is the result of its inability to foster students' critical thinking skills. According to Fogarty and McTighe (1993), critical thinking is a method of thinking or drawing relatively logical conclusions about what to do and believe. Since elementary school, students should be able to think critically. Students who have this ability will be more independent and adaptable in solving problems, so that it will increase the possibility of children being actively involved in the learning process by investigating and analyzing related issues (Azizah, et al, 2018). Students need to master indicators related to

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critical thinking skills. According to Facione (2015), there are six indications of critical thinking skills, namely interpretation, analysis, evaluation, inference, explanation, and self-regulation.

In reality, elementary school students still have very low critical thinking skills. This is due to the lack of use of media or learning methods that involve students actively in the learning process (Azizah et al., 2018). Therefore, the use of varied learning methods or approaches that motivate students to actively participate in the learning process is very important. Applying the Quick On The Draw learning approach to improve students' critical thinking skills is one of them.

The use of the Quick On The Draw learning strategy has been the subject of research by a number of researchers. Researchers point to several studies that are references for this thesis, including research conducted by Ekalwanti and Susalntal (2020) on the Quick On The Draw strategy in improving learning outcomes of mathematical learning in class II SDN 69 Kotal Bengkulu. This is indicated by the average value of 64% before the application of the Quick On The Draw strategy and 88% after the application of the Quick On The Draw strategy. On the other hand, Nurhalswindal (2022) conducted a study using the Quick On The Draw technique to increase students' learning motivation, which was indicated by a score of 65.2% before the study and 81.6% after the study. Palral researchers also found research (Nur Fitri et al., 2020) that examined the critical thinking ability of school students in an analysis based on their learning ability in mathematics subjects. The findings showed that 71.8% of students were in the medium category, 50% were in the high-level critical thinking category, 30.8% were in the medium critical thinking category and 19.2% were in the low critical thinking category. This shows that a person's critical thinking ability is influenced by their critical thinking ability.

According to Frelberg and Driscoll (1992) in (Badar & Arniati Bakri, 2022), learning strategies are methods used to achieve different goals in delivering learning materials at different levels for different learners. On the other hand, according to Gerlach and Ely (1980), learning strategies are methods used to present material in a particular learning environment, including the type, and sequence of activities that can provide learning experiences to students. Learning strategies can also be understood as ways or patterns of learning that are contextually chosen by educators based on student characteristics, school facilities, the surrounding environment, and predetermined learning objectives.

One of Paul Ginnis' learning strategies, Quick On The Draw, encourages students to work together in small groups in an effort to be the first group to answer a series of questions. Huriyanti and Rosiyanti (2017) stated that the Quick On The Draw strategy is a learning method that emphasizes students' ability to think critically. This is because this approach allows students to use problem solving skills through group discussions and story problems.

Critical thinking skills are also often referred to as a higher-level thinking process that aims to find methods through comparing various information. According to Marsitin and Rahayu Sesanti (2018), critical thinking is the ability to think actively about a problem by providing clear information, reflecting, communicating, making decisions, and providing reasons or arguments for decisions that have been made. Critical thinking is a way of thinking without haste and using concepts that think critically to reach conclusions.

Research conducted by Torang Siregar et al (2023) and Fitria Ekawati, et al (2020) discusses the effect of the Quick On The Draw learning strategy on student interest and learning outcomes. The results of the data analysis show that there is a significant difference between before and after the application of this strategy in the learning process. Therefore, researchers propose the novelty of applying the Quick On The Draw strategy by revealing whether this strategy is effectively applied in elementary schools, especially to the critical thinking skills of fourth-grade students.

2. METHOD

This research uses a quantitative approach and sampling technique, namely non-probability sampling. According to Waruwu (2023), a quantitative approach is a method that can be measured by performing statistical or mathematical techniques used to answer research hypotheses. The method used in this research is the experimental method. According to (Ramdhan, 2021) the experimental method is a type of predictive investigation that speculates on the manipulation or influence of the dependent variable. This study uses experimental methods because it involves collecting data or causal information about the existence of a treatment. The research design used is the Non-Equivalent Control Group Design which uses two groups, namely the control group and the experimental group. According to Sugiyono (2019), the Non-Equivalent Control Group Design research design is two research groups to be compared, one of which will receive special treatment and be treated slightly differently than the other group. Before being given treatment, both

groups will take a written test to assess the initial status of each group. The test data will be used as a reference to see the differences before and after the treatment.

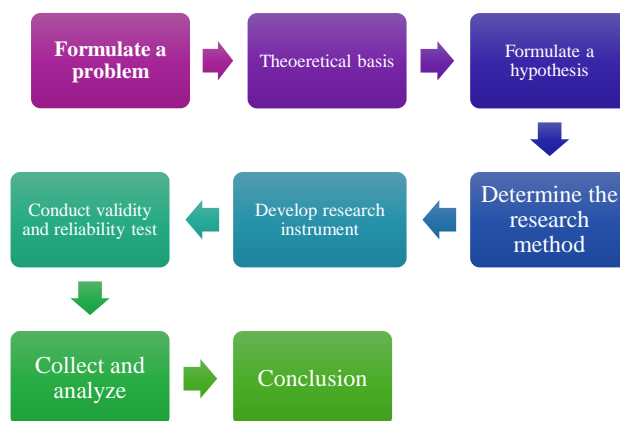


Figure 1. Research procedure

source: Sugiyono (2022)

The population in this study were fourth-grade students of SDN 2 Majang Tengah, totaling 34 students. Sampling is done through a saturated sampling technique where all members of the population are used as samples. The sample of this study took all students in classes IV A and IV B, each class consisting of 17 students.

Pretest and posttest were given in two stages to the experimental class and control class as part of the data collection method used in this study. To determine the critical thinking ability of students before receiving treatment and pre-test was given at the beginning. Meanwhile, the post-test was given at the end to determine the level of students' critical thinking skills after the treatment. However, neither treatment nor traditional learning methods were used in the control class pretest and posttest activities. In addition to using testing methods, researchers also use data collection strategies, such as observation activities carried out at SDN 2 Majang Tengah, especially in class IV.

This study uses a validity test to determine whether the tools used are effective. This study measures the validity test with the help of the SPSS 30 For Windows program, with the criteria that if the sig value < 0.05 then the instrument is declared valid. Conversely, if the sig value > 0.05 then the instrument is declared invalid. In addition to conducting a validity test to check the validity of the instrument used, a reliability test is also needed to see if the data used is consistent. This test compares Cronbach's Alpha value with a significance level of 0.60 with the help of the SPSS 30 For Windows program. The criterion is if the Cronbach's Alpha value > 60 then the instrument is declared reliable. Conversely, if the Cronbach's Alpha value < 60 then the instrument is declared unreliable.

After the instrument was declared valid and reliable, the data was analyzed using normality test, homogeneity test, and hypothesis testing. The data used for the normality test is the pre-test and post-test question data. The normality test used is the Shapiro Wilk test which is assisted by the SPSS 30 For Windows program. If the Shapiro-Wilk test value is greater than α (sig > 0.05) then H_0 is accepted and the data is normally distributed. Conversely, if the Shapiro-Wilk significance value is smaller than α (sig < 0.05) then H_0 is rejected and the data is not normally distributed.

If the normality test produces normally distributed data, then the next step is to conduct a homogeneity test. The homogeneity test can be done using the Lavene Statistical test, with a significance level of $\alpha = 0.05$ which is assisted by the SPSS 30 For Windows program. If the significance value of Lavene Statistics is greater than α (sig > 0.05) then H_0 is accepted, so it can be stated that the two sample classes used are in a population whose data variance is homogeneous. If the significance value of Lavene Statistics is smaller than α (sig < 0.05) then H_0 is rejected and the data is not in a population whose data variance is homogeneous.

If the data is normally distributed and homogeneous, then an Independent Sample T Test is needed with the help of the SPSS 30 For Windows program to determine whether there is a difference between the two classes, namely the experimental class that is treated using the Quick On The Draw-based learning strategy and the control class that is not treated or learning using conventional methods.

3. RESULTS AND DISCUSSION

3.1 Result

This study aims to determine the effect of the Quick On The Draw strategy on students' critical thinking skills. Samples in this study were divided into two groups, namely the control group (class IV A) and the experimental group (class IV B). The control group and experimental group got two lessons with the theme of fractions worth. The experimental group received the Quick On The Draw learning strategy using question cards and PPT media, while the control group only used ppt media assistance.

The Quick On The Draw strategy has a syntax that is modified or developed from the syntax of the cooperative learning model, with the following syntax: 1) The teacher prepares a set of questions and makes copies, so that each group has its own device, the cards containing the questions have different colors for each set of questions; 2) The teacher divides the class into different groups heterogeneously; 3) Each group is given a module containing fraction material, example problems, and how to solve them; 4) Next, representatives from each group run to the teacher's desk and receive a set of question cards according to the color determined by each group; 5) Each group discusses and answers questions according to the method specified in the module; 6) The group that has finished answering will bring the question card to the teacher's desk for inspection, and the teacher will check the correctness of the question; 7) The group that successfully answers the question correctly will be allowed to take the next question card; 8) The teacher will give a prize to the group that answers all the questions in the fastest time; 9) In the last stage, the teacher will discuss all the questions and teach the learners how to solve them.

Each group was given a pretest and posttest with a written test in the form of description questions that have been tested for validity and reliability. The validity and reliability of the instrument were tested using the criteria if $r_{\text{count}} \geq r_{\text{table}}$, with a significance level of 0.05 said to be valid. The results of the validity and reliability tests can be seen in Table 1 and Table 2.

Table 1. Question Validity Test Results

No	Corellation	Nilai r Produck Moment	Keterangan
1.	0,506	0,482	Valid
2.	0,695	0,482	Valid
3.	0,539	0,482	Valid
4.	0,549	0,482	Valid

The results of the question validity test are shown in Table 1, where the r_{table} value with $n=17$ is 0.482. Based on the validity test results, the instrument meets the validation criteria and is suitable for research if the value of $r_{\text{count}} \geq r_{\text{table}}$ is at the 5% significance level.

The research instrument called reliability is used to evaluate how accurate and consistent a measurement is in producing the same results.

Table 2 displays the results of the instrument reliability test

Cronbach's Alpha	N of items
0,734	4

Table 2 is a table of the results of the question instrument reliability test which obtained a Cronbach's Alpha value of 0.734. The test results are in accordance with the test decision, namely if $r_{\text{count}} \geq r_{\text{table}}$, then the instrument is considered reliable.

The normality test was carried out on both classes, namely the control class and the experimental class. This hypothesis was tested through the Shapiro Wilk test at a significance level of 0.05 which was assisted by the SPSS 30 For Windows program. The results of the normality test can be seen in Table 3 and Table 4.

Table 3. Pretest Question Normality Test Results

	Statistik	df	sig
Control class pretest result	0,914	17	0,117
Eksperimen class pretest result	0,943	17	0,132

The results showed that the pretest score in the experimental class was 0.132 and the pretest score in the control class was 0.117. Thus the significance of the two data is normally distributed.

Table 4. Posttest Question Normality Test Results

	Statistik	df	sig
Control class posttest result	0,929	17	0,207
Eksperimen class posttest result	0,943	17	0,358

The data results show the significance value in the experimental class is 0.358 and the control class is 0.207. So the data is worth > 0.05 and it can be stated that both data are normally distributed.

The homogeneity test is carried out if the initial data is normally distributed through the Lavene Statistical test with a significance level of 0.05. The results of the homogeneity test in the control class and experimental class can be seen in Table 5 and Table 6.

Table 5. Homogeneity Test Results of Pretest Questions

	Lavene Statistik	sig
Mean	2.896	0,098

Pretest results in the table above show a significance value of 0.098. If the significance is ≥ 0.05 , so the data obtained have homogeneous or similar variants.

Table 6. Homogeneity Test Results of Posttest Questions

	Lavene Statistik	sig
Mean	1.749	0,195

The significance value of 0.195 is shown in the table above. If the probability value obtained is higher than 0.05, then the data is considered homogeneous or comparable.

The hypothesis was evaluated on both samples if the data were normally distributed with homogeneous variances, and the Independent Sample t-test was used for a significance level of 0.05. The following are the research hypotheses:

Ho: The application of Quick On The Draw-based learning techniques does not have a real impact on the critical thinking skills of fourth-grade students.

Ha: The application of Quick On The Draw-based learning techniques has a significant impact on the critical thinking skills of fourth-grade students.

The results of the T-test on pretest and post-test data can be seen in Table 7.

Table 7. T-test Results

Test-t	Sign Value	Information
Class kontrol	0,001	$\leq 0,05$
Class eskperimen	0,001	$\leq 0,05$

The table above shows the significance value through the T test of $0.001 \leq 0.05$ which indicates that Ho is rejected and Ha is accepted. Thus, the critical thinking skills of fourth grade students are strongly influenced by the Quick On The Draw learning strategy.

3.2 Discussion

Judging from the effect of the Quick On The Draw learning strategy on students' critical thinking skills, the results of data analysis show that there is a significant difference between the control group and the experimental group. Judging from the level of student attention to the learning material presented, the learning method or model used does not affect student concentration. However, choosing the right learning strategy helps to increase students' concentration and motivation in following the learning process. Thus, learning is said to be successful if it exceeds the standard provisions set in the education unit (Abdul Rahman et al, 2022).

According to Huriyanti and Rosiyanti (2017), the Quick On The Draw strategy is learning that emphasizes the critical thinking skills of students, as evidenced by the average value of the critical thinking skills of the experimental class higher than the control class (78.23% versus 58.23%) which indicates that the use of this strategy encourages students to be more active during the learning process and prioritizes student activeness and group cooperation to find, answer questions, and report information in a game atmosphere.

The results showed that the effect of the Quick On The Draw strategy was declared valid because it produced data that was by the theory or concept to be measured. We can also see through research that has been conducted by previous researchers recognizing the application of the Quick On The Draw strategy to the

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learning process, such as research conducted by Torang Siregar, et al (2023) and Fitria Ekawati, et al (2020) recognizing the effect of applying the Quick On The Draw strategy on student interest and learning outcomes. Where the results of the research that has been done show a significant increase before and after the application of the Quick On The Draw strategy. This is slightly different from the research conducted by Maya Nurjanah (2022) and Z Fakhruddin, et al. (2024) which focused more on students' cognitive learning outcomes. However, the results showed that there were differences in students' cognitive learning outcomes before and after applying the Quick On The Draw strategy. In addition, research conducted by Putri Oktaviana (2020) which discussed the effect of the Quick On The Draw strategy on students' understanding of mathematical concepts also showed a significant increase before and after the application of this Quick On The Draw strategy.

Of these studies, the research conducted by Monica Khairunissa (2021) is slightly different from the research I conducted. The comparison lies in the variables and focus of the research conducted. Where the research I did reviewed the effect of the Quick On The Draw strategy on students' critical thinking skills. Meanwhile, Monica's research discusses efforts to increase learning interest and problem-solving skills through the Quick On The Draw model. Despite having different variables and research focuses, the results of the research conducted showed significant results before and after the application of the Quick On The Draw strategy and model.

Based on the analysis of several studies, it has been shown that learning supported by the Quick On The Draw approach is superior to learning without its use. This is because this approach provides several benefits, including the ability to increase students' passion for learning, foster critical thinking skills, improve effective communication, reduce boredom, and motivate them to participate more actively in classroom activities. In addition, this approach emphasizes the capacity for quick decision-making, which can be achieved through group discussions. By using this approach, students are not only taught to make decisions quickly but also to solve problems creatively and innovatively and build critical and analytical thinking skills to assess information and reach appropriate conclusions.

Therefore, it can be concluded that the application of the Quick On The Draw strategy affects improving students' critical thinking skills, especially on critical thinking indicators such as interpretation, analysis, evaluation, inference, explanation, and self-regulation. In the research I did, the comparison of scores was 20% before and after applying the Quick On The Draw strategy. In addition, this strategy also affects increasing students' interest in learning, learning motivation, learning outcomes, and mathematical solution skills.

4. CONCLUSION

The results of the analysis and discussion showed that students benefited from the Quick On The Draw-based learning technique. This is indicated by the fact that the experimental class post-test results are higher than the control group. In addition to the post-test results, the hypothesis test results also show that H_a is accepted or there is an influence on students' critical thinking skills after applying the Quick On The Draw strategy. Using the Quick On The Draw technique during the learning process helps students develop their critical, cooperative, and creative thinking abilities as well as their group problem-solving and communication skills. Students will work on problems in a game-like environment, which can increase their enthusiasm and actively engage them during learning activities, making this method interesting to do during the learning process. So this strategy can be used as an alternative learning strategy to increase students' enthusiasm for learning, especially to develop and improve students' critical thinking skills.

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