

The Effect of Jigsaw Type Cooperative Learning Strategy to Improve Students' Critical Thinking Patterns

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ABSTRACT

The purpose of this study was to determine the effect of the jigsaw type cooperative learning strategy on students' thinking skills and to determine the thinking skills of sixth graders at SD Bina Taruna I. The type of research applied was quantitative research using the "One Group Pretest and Posttest" design (initial test and final test).) which was held on January 25 – March 25, 2022 at SDS Bina Taruna 1 Medan Marelan FY2021/2022. The data collection instrument was carried out through an essay test with a total of 15 test questions. The results of this study can be concluded based on the t value, it is known that the t-test value is $60,586 > t_{table} 1,729$. t table is taken from the t-distributed table with a significant level used is 5% or 0.05 there is an influence Jigsaw cooperative learning strategy to improve students' critical thinking patterns in class VI SDS Bina Taruna 1 Medan Marelan. This is obtained from the student's score before being given treatment (pretest) obtaining a score of 64 to 79 with an average score of 71.75 in the sufficient category. While the results (posttest) after implementing the cooperative learning strategy, it is known that the value obtained is 82 and the highest score is 100 with an average of 90.40 in the very good category. So that the hypothesis proposed in this study is accepted.

Introduction

Education in this day and age plays an important role in people's lives, because there are factors that influence it to develop the abilities that exist within itself with the aim of being able to understand and act better and more mature. It can indirectly raise our dignity as citizens of the state. One of the government's efforts has been mentioned in Law no. 20 of 2003 concerning the National Education System which states "Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and good skills. needed by himself, society, nation and state". One of the most important skills in jigsaw cooperative learning for students to have and develop is the ability to think critically. Students should become more active and directly involved, so they can understand the concepts of various learning content well. In thematic learning, students should be faced with realities and problems that occur in everyday life. With the current K13 curriculum, critical thinking in every child, especially elementary schools, is expected to foster curiosity and share knowledge with each other. Therefore, the government requires educators/teachers to carry out learning by honing children's critical thinking skills. Starting from learning with a pattern of High Order Thinking Skill (HOTS) and questions at a high level. (Astuti, 2021:84). The following is a table of the average value of thematic learning content for the 2020/2021 academic year:

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Table 1 Thematic Average Score

2020	Average	year 2021	Average
Semester I	60.0	Semester I	62.0
Semester II	61.5	Semester II	63.0

Source: SDS Data Bina Taruna 1 Medan Marelan

When the researcher made initial observations on September 11, 2021 based on the results at SDS BINA TARUNA 1, it turned out that the average grade VI grade was almost all below the KKM, which was 70, the teacher only used conventional strategies and strategies in the teacher's learning process only as a facilitator (teacher centered).) teacher-centered learning so that students are less active. And only using conventional learning which tends to only explain the lecture method and has not varied. As a result, there is a lack of student interaction in the learning process in the classroom so that students' critical thinking skills are low. There are many ways that we can do to improve students' critical thinking patterns in class, one of which is to determine the appropriate and appropriate strategy for class students. One of the learning strategies that can support this is the jigsaw type cooperative learning strategy. Strategy is a teacher's effort that is carried out effectively to achieve learning objectives and student achievement in the learning process. The Jigsaw type cooperative learning strategy is expected to be one of the interesting solutions to be practiced in the classroom in order to minimize various barriers to student learning when conventional learning strategies tend to only associate with one type of learning modality. In addition, the teacher's task is an influencing factor to determine students' critical thinking skills. By using the Jigsaw strategy. The use of fun Jigsaw learning techniques is needed by students, because in the learning system students are required to be more dynamic and independent. Based on the background of the problem above, the researcher is interested in conducting research and wants to know how students work together and are responsible for solving a problem with " The Effect of Jigsaw Type Cooperative Learning Strategies to Improve Students' Critical Thinking Patterns " which is effective and efficient in class VI SD BINA CAD 1 YEAR. 2021/2022 Medan Marelan.

Research Methodology

This research was carried out at SDS Bina Taruna 1 Rengas Pulau, Medan Marelan District, Medan City, North Sumatra Province 20256. The time used in this study was for 3 months, namely February - April FY 2021/2022. In the main discussion of the Effect of Jigsaw Type Cooperative Learning Strategy to Improve Critical Thinking Patterns for VI grade students of SDS Bina Taruna 1 Medan Marelan. The population needed in this study were all students of class VI SD Bina Taruna 1 Medan Marelan, totaling 48 students. In this study, researchers took a sample of 1 class, namely class VI A which consisted of 20 students. The class chosen is the experimental class which will be given pre-test and post-test treatment. In this study, the researcher used the pre-experimental method which is a method to obtain accurate data from the data to be studied, namely by conducting direct experiments on the object being studied. will be investigated, to find the effect on treatment in controlled situations (Sugiyono, 2019:74). The study was only carried out using an experimental class without a control class. This study uses One Group Pretest and Posttest (initial test and posttest), where the sample group is given treatment (independent variable) but the initial ability is known through the pre-test before the jigsaw cooperative learning strategy is used in the study. Then after the jigsaw model treatment was given, the results of the study were observed by giving a post-test.

Results and Discussion

This research is a quantitative study using the design of "One Group Pretest and Posttest (Pretest and Posttest) which was carried out on January 25 - March 25, 2022 at SDS Bina Taruna 1 Medan Marelan TA2021/2022 entitled "The Effect of Jigsaw Cooperative Learning Strategies for improve critical thinking patterns of sixth graders at SDS Bina Taruna 1 Medan Marelan". This study has independent variables (jigsaw cooperative strategy) and dependent variable (critical thinking).

a. Validity test

Test the validity of the 15 test questions using SPSS 25 with a significance level of $= 0.05$. The results were obtained. Based on the research instrument testing, it showed that $r_{count} > r_{table}$ from item 1 to 15 items there were 10 valid questions and it was greater than r_{table} with a significant level of 5 % which is 0.444 by following the number of $N = 20$ (table value of r Product Moment). The question is said to be valid because 10 questions are greater than r_{table} , so it can be concluded that 10 valid questions can be used as research instruments

b. Reliability Test

From the results of the reliability of the items using Windons SPSS 25 with the formula Cronbach's Alpha 0.811. Then it can be stated reliably that $r_{\text{arithmetic}} > r_{\text{table 5\%}}$ is equal to $0.811 > 0.05$. This means that it is stated that the overall question is said to be reliable or consistent and trustworthy.

c. Test Result Data Description Test

The purpose of this study was to determine the effect of the jigsaw type of cooperative learning strategy to improve students' critical thinking patterns in elementary schools. Critical thinking test analysis. Analysis of the Critical Thinking Test Students in the experimental class are shown in. From the results of data analysis, it is known that the experimental class that uses the Jigsaw Cooperative Learning Strategy has increased by 7 active students and 13 students who are very active in the learning process.

Table 2 Critical Thinking Test Results

Experiment Class	Student Critical Thinking Test Results			
	Experiment Class			
	Not enough Active	Active Enough	Active	Very active
Pretest (Initial Test)	5	13	2	0
Posttest(Final Test)	0	0	7	13

Table 3 Description of Research Data Results

Descriptive Statistics					
Experiment Class	N	Min	Max	mean	Std. Deviation
Pretest (Initial Test)	20	64.00	79.00	71.7500	5.29250
Posttest (Final Test)	20	82.00	100.00	90.4000	6.74244
Valid N (listwise)	20				

Based on table 4.4 above, it can be concluded that an average of 20 students was obtained for the test of the average value of students' critical thinking with the Jigsaw Type Cooperative Learning Strategy. Before being given the pretest treatment it was 71.75 with a minimum score of 64 and a maximum of 79 and the standard deviation of 5.292 while after being given the posttest treatment it was 90.40 with a minimum score of 82 and a maximum value of 100 and a standard deviation of 6.742

d. Normality test

Normality test was conducted to determine whether the data obtained came from a normally distributed population or not. the following are the results of the normality test:

Table 4 Normality Test

Tests of Normality						
Experiment Class	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistics	f	Sig.	Statistics	df	Sig.

Student Critical Pretest (Initial Test)	.161	20	.185	.942	20	.326
Thinking Posttest (Final Test)	.167	20	.187	.947	20	.258

a. Lilliefors Significance Correction

e. Homogeneity Test

The homogeneity test of the data was used to determine whether the data had the same variance (homogeneous) or not. The following is a table of research homogeneity:

Table 5 Homogeneity Test

Test of Homogeneity of Variances

		Levene Statistics	df1	df2	Sig.
Results Experiment Pretest	Based on Mean	.124	1	38	.727
	Based on Median	.072	1	38	.790
	Based on Median and with adjusted df	.072	1	34,024	.791
	Based on trimmed mean	.130	1	38	.720

Based on the output table of the homogeneity test results "Test of Homogeneity of Variances" it can be seen that the significance value (Sig.) of the experimental class critical thinking variable (Jigsaw Type Cooperative Learning Strategy) Before treatment (pretest) and after being given treatment (posttest) is 0.727. Because the value of Sig. $0.727 > 0.05$, it can be concluded that the variance of the experimental class pretest posttest data is said to be homogeneous or H_0 is accepted and H_a is rejected.

f. Trends in Research Variables

Based on data analysis, the level of tendency of students' critical thinking variables in the experimental class with the average value (mean) is 90.40 and the standard deviation is 6.742. From the results of the students' Critical Thinking test using the Jigsaw Type Cooperative learning strategy (pretest-posttest) it can be seen in the following table:

Table 6 Tendency Level of Critical Thinking Test Variables

No	interval	Frequency	Percentage	Information
1	90	10	82.00	Tall
2	81 – 89	5	25.00	Currently
3	79	5	25.00	Low
Amount		20	100.0	

From the table above, it can be concluded that the data on the results of the Critical Thinking Test of students with the Jigsaw Cooperative Learning Strategy at SDS Bina Taruna 1 are mostly at a high level with 10 respondents, 5 respondents in the medium category and 5 in the low category.

g. Hypothesis testing

If the tcount is in the H_0 rejection region and the 2-tailed Sig value < 0.05 , then there is an influence between the independent variable (X) on the dependent variable (Y) or the hypothesis is accepted, and vice versa. The following can be seen in the T-Test test table:

Table 7 Results of Students' Critical Thinking Pre-test and Post-test

One-Sample Test					
Test Value = 0					
Jigsaw Strategy	df	Sig. (2-tailed)	(2-Mean Difference	95% Confidence Interval of the Difference	
Experiment ClassT				Lower	Upper

Pretest Critical Thinking Results	56,545	19	.000	71,750	69.22	74.18
Posttest Critical Thinking Results	60,586	19	.000	90,400	82.09	88.41

Based on the results of the t-test, it can be seen that: 1) The significance value is 0.000, which is $0.000 < 0.05$. it is stated that there is a significant difference between the posttest experimental class (Jigsaw Type Cooperative learning strategy) pretest (before being treated) Thus there is an influence on students' critical thinking patterns. 2) The t-test value is equal to which $t_{count} 60,586 > t_{table} 1,729$. t_{table} is taken from the t-distribution table with the significance level used is 5% or 0.05 and $dk = n-1$, $20 - 1 = 19$, then the value of $t_{table} = 1.729$.

Learning strategy is a systematic effort by teachers to make the learning process run effectively and efficiently starting from planning, implementation and evaluation. (Hadi, 2021: 186). According to Panggabean, et al (2021:2) learning strategy is a learning implementation plan which is then derived from the learning method, the teacher plays a very important role in determining what strategies will be applied to the learning process that is carried out while taking into account the level of students' cognitive development. The types of learning strategies are divided into several types, namely: 1) direct learning strategies, 2) indirect learning strategies, 3) interactive learning strategies, 4) experiential learning strategies, 5) independent learning strategies (Abdul Majid (2016:17)). The application of learning strategies, according to Abdul Majid (2016: 97) a teacher understands the operational stages of a learning strategy, but a teacher is not necessarily able to successfully implement these learning strategies in carrying out classroom learning. The success of teachers in implementing learning strategies is highly dependent on their ability to analyze existing learning conditions, such as student learning objectives that are constrained by learning resources, the learning environment.

a. Jigsaw Cooperative Learning

According to Wati and Anggraini (2019:99) jigsaw cooperative learning is a learning strategy through small groups of students who work together in maximizing learning conditions to achieve learning goals. Students in cooperative learning work in small groups in collaboration with members from 2 to 5 people with heterogeneous group structures. Based on the expert opinion above, the researcher concludes that jigsaw cooperative learning is a learning strategy through small groups of students who work together in maximizing learning conditions to achieve learning goals. so this makes the learning situation interesting because the learning process students will interact with each other so as to increase the attitude of caring for each other in social behavior. The characteristics of the Jigsaw type of cooperative learning that require Handayani (2020:29) are: 1) Students work in groups to complete learning materials, 2) Groups are formed from students who have high, medium and low skills, 3) Then group members come from race, culture, different ethnicities, and genders, 4) Rewards are group oriented rather than individual.

b. Ability of Critical Thinking Patterns (Critical Thinking)

According to Wati and Anggraini (2019:101) thinking ability in Bloom's Taxonomy is defined as intellectual ability, namely the ability to analyze, synthesize, and evaluate. In other languages, these abilities can be said to be critical thinking skills. According to Zakiah (2019:7) In modern times and sophisticated technology that facilitates all information, critical thinking is very important for everyone's life. Critical thinking allows the reader to judge evidence against what is read and can identify false or illogical reasoning.

Conclusion

Based on the formulation of the problem from this research, it can be concluded that based on the t value, it is known that the t-test value is $60,586 > t_{table} 1,729$. t_{table} is taken from the t-distributed table with a significant level used is 5% or 0.05 there is an influence Jigsaw cooperative learning strategy to improve students' critical thinking patterns in class VI SDS Bina Taruna 1 Medan Marelan. This is obtained from the student's score before being given treatment (pretest) obtaining a score of 64 to 79 with an average score of 71.75 in the sufficient category. While the results (posttest) after implementing the cooperative learning strategy, it is known that the value obtained is 82 and the highest score is 100 with an average of 90.40 in the very good category. So that the hypothesis proposed in this study is accepted.

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