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RESEARCH ARTICLE

THE EFFECT OF THE THINK TALK WRITE TYPE COOPERATIVE LEARNING MODEL ON CRITICAL THINKING SKILLS IN ELEMENTARY SOCIAL STUDIES LEARNING

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ABSTRACT

This study aims to determine the influence of the *Think Talk Write type cooperative learning model* on students' critical thinking skills in elementary social studies learning. The researcher used a quasi-experimental method. The population of this study is grade V students of SDI Watu Benta. The technique of taking research subjects uses purposive sampling, where research subjects are assigned to two classes that have relatively equivalent average values. One class is an experimental class and the other is a control class. The research instrument is in the form *of an essay test* to test critical thinking skills. The statistical analysis used is the t-test. The results of the study show that there is an influence of the *Think Talk Write* type cooperative learning model on students' critical thinking skills in social studies learning. This is evidenced by *the post-test* scores of students who applied the *Think Talk Write* type cooperative learning model that were superior to the scores of students who used conventional learning. The results of this study can be used as a reference for future researchers in testing the influence of the *Think Talk Write type cooperative learning model* at the level of education, location, and other materials.

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INTRODUCTION

The current teaching and learning process is no longer presented with a method that only includes knowledge, but must be able to develop thinking skills in solving problems. The development of thinking skills in solving problems in the learning process is carried out through learning that focuses on solving problems in the environment around students (Hayati, Utaya, & Astina, 2016). Educators should be able to integrate the material with appropriate learning models (Susetyo, Sumarmi, & Astina, 2017). Social Sciences (IPS) is one of the subjects taught at both the elementary, junior high and high school levels. According to *the National Council for the Social Studies (NCSS),* social studies is an integrated study of the social sciences and humanities. In the school program, social studies systematically and coordinated studies various social disciplines, and the materials presented in accordance with the humanities (Wahidmurni, 2017; Sapriya, 2009). Thus, social studies is formulated based on reality and social phenomena that are manifested by an interdisciplinary approach from the branch of social sciences. The essence of social studies in the field of Education is to develop a concept of thinking based on the reality of the social conditions that exist in the environment around students, so that it is expected to produce good and responsible individuals for themselves and the surrounding community. According to Purwanto (2010), social studies learning is still centered on teachers, theoretical, and abstract. The fundamental principle in overcoming this is that teachers do not only provide knowledge to students but students need to be accustomed to thinking and playing an active role in building their own knowledge. Teachers need to give students the opportunity to think in discovering and applying ideas that train them to a higher level of understanding. Thus, teachers are required to create a learning process that can facilitate students to have the ability to think critically in understanding problems, identifying, and formulating their findings in the form of descriptions and conclusions. Thinking is one of the mental activities of humans that cannot be separated in their daily lives. Johnson (2014) revealed that critical thinking is emphasized on a clear process to solve problems based on decision-making, analyzing assumptions, and evaluation. In line with that, Ennis (1993) explained that critical thinking is thinking reflexively with emphasis on the formulation of decisions on what to believe or do. Some indicators of critical thinking ability are: (1) focusing on questions, analyzing and clarifying questions, answers, and arguments; (2) consider reliable sources; (3) observing and analyzing deductions; (4) induce and analyze induction; (5) formulate explanatory statements, conclusions, and hypotheses (Ennis, 1993). Thus, students' low critical thinking skills can be overcome with the right learning model. The learning model is a strategy to achieve learning goals and improve students' critical thinking skills (Mushoddik, 2016; Matroji, 2016; Hayati, 2016). Reiser

(2002) stated that teachers can use various teaching strategies to achieve teaching and learning goals and also help students in the classroom to have critical thinking skills. Choosing the right strategy allows teachers and students to achieve learning goals. In addition, according to Astrini et al., (2020), the use of the right teaching strategies can motivate students throughout the learning process. However, this cannot be done optimally in elementary school students. This is reflected in the low critical thinking of students in solving problems that lead to critical thinking. In line with that, Murni et al. (218) stated that one of the causes of low critical thinking of students is the use of learning models that do not provide opportunities for students to empower their thinking skills and actively engage in the learning process. One of the efforts to improve students' critical thinking skills is to apply a *Think Talk Write type cooperative learning model* to the learning process in the classroom.

Think Talk Write is one type of cooperative learning model. Cooperative learning expects students to be able to help, discuss and argue to hone the treasures of knowledge they have mastered and close the gap in their understanding (Sanjaya, 2008). According to Slavin (in Sumarmi 2012), cooperative learning is*: "cooperative learning methods share the idea that students work together to learn and are responsible for one another's learning as well as their own".* The essence of cooperative learning is the responsibility of individuals as well as groups so that in students a positive attitude of interdependence is formed which in the end the learning can run optimally.

The Think Talk Write *learning model* (hereinafter referred to as TTW) is a learning model that uses actively involving students in several learning flows, namely thinking, speaking, and writing. This learning model was first introduced by Huinker and Laughlin in Communication in Mathematics K-12 and Beyond, 1996 *National Council of Teachers of Mathematics (*USA). which states that:

"The Think-Talk-Write strategy builds in time for thought and reflection and for the organization of ideas and the testing of those ideas before students are expected to write. The flow of communication progresses from students engaging in throught or reflective dialogue with themselves, to talking and sharing ideas with one another, to writing"

Based on the statement above the model, *TTW* learning is basically building students' knowledge through thinking, speaking, and writing. In this learning model, it begins with reading material that has been packaged with a constructivist approach to understand the content (*think*). Next, students have discussions in groups or share with their friends to get a common understanding (*talk).* Next, students write down the results of their thoughts in the form of a summary. Huinker and Laughlin (in Yamin and Ansari, 2008) explain that the learning process of *the TTW* model is to build an understanding of thinking, speaking, and writing by involving students in thinking and dialogue with themselves after going through the process of reading, then speaking, and sharing ideas with their friends *(discussing*) before writing. The steps in the *TTW* learning model are as follows: (1) thinking, students read a material, then make a small note of what has been read about what is known and not known about the material, as well as how the steps are in solving problems; (2) speaking, students are divided heterogeneously into several discussion groups consisting of 3-5 students; (3) writing, students write the results of the discussion on the student's worksheet (Hartanto. 2017). Based on the Step, each stage students are asked to understand what they are reading, speaking and writing using words that are easy for them to understand. Teachers have a very important role in determining the success of the learning process. The roles and duties of teachers in an effort to make *the TTW* learning model effective are: (a) asking questions and providing tasks that allow students to be actively involved in thinking; (b) encourage and listen to the ideas put forward by students orally and in writing; (c) consider and inform what students explore in the discussion; (d) monitor, assess, and encourage students to participate actively (Silver and Smith, 1996). The results of research by Masruddin et al (2021) found that the application of the TTW-type cooperative learning model can be an alternative to actively increasing student intensity, especially in optimal writing, critical thinking and achievement skills. Other research was conducted by Putri (2015); Rudi, et al. 2017) showed that the use of *the TTW* learning model has a positive influence on students' social studies learning outcomes. Based on some of the results of the research, they generally research at the high school level and no one has specifically researched the application *of TTW* at the elementary school level. Thus, the researcher tries to fill these shortcomings by focusing on the influence of *TTW* on the critical thinking ability of elementary school students.

RESEARCH METHODS

The design used in this study is a quasi experiment with a research design *Pretest and Posttest Control Group Design*. In this research design, the experimental group and the control group were tested twice, namely *Pretest* and *posttest.* The difference between the two classes is the use of a cooperative learning model *WNB* and the use of conventional learning (lectures, questions and answers, and discussions). Experimental classes are taught using a cooperative model of *WNB*, while the control class was given conventional learning. The subject in this study is a grade V student of SDI Watu Benta, Manggarai (NTT) for the 2024/2025 school year. The technique of taking the subjects of this study uses purposive sampling, namely the selected research subjects are two classes that have relatively equivalent average values. The experimental class is the VA class, while the control class is the VB class. The research instrument uses the test *Essay* There are 6 questions. The data collection techniques used in this study are in the form of tests, namely pretest and posttest. The data analysis technique uses inferential statistics. The data analysis used was a prerequisite test, namely: normality test, homogeneity test, and hypothesis test. Before the hypothesis test, a prerequisite test is carried out to determine whether the data is truly distributed normally and homogeneously.

RESULTS AND DISCUSSION

The primary data obtained in this study is the critical thinking ability of students. Students' critical thinking skills are obtained from *Gain Score* which is the difference between the values *Pretest* and the value *Posttest*. The number of students in this study is 46 students divided into 2 classes. The experimental class was 24 students, while the control class was 22 students. The data of the results of the study include: (1) initial ability (*Pretest*) critical thinking experimental class and control class; (2) the results of the final test (posttest) of critical thinking ability of the experimental class and the

control class; (3) Data *Gain Score* obtained from the difference in score *Posttest*and *Pretest*; (4) data on critical thinking skills for each indicator

Description of the Pretest Score of Critical Thinking Ability: The initial data of the two classes is expressed in the form of an interval with five criteria, namely; very good, good, enough, less, and less once. The following is presented with a presentation of data on the pretest scores of the experimental class and the control class.

Table 1. Description of the Critical Thinking Ability Pretest Results

Class	Minimum Grade	Maximum Value	Average
Experiment	35	67	49,94
Control	17	72	50,03

Based on the table, it can be concluded that the average score of the two classes has a difference of 0.09 with the average score of the control class being higher than that of the experimental class.

Posttest Score Description: The final score of students' critical thinking skills can be seen after receiving treatment. The data obtained from the two classes is expressed in the form of intervals. The following is an exposure of data from the value of critical thinking skills in the experimental class and the control class.

Table 2. Posttest Score Description

Class	Minimum Grade	Maximum Value	Average
Experiment	75	100	82,59
Control	55	95	73,90

Table 2 Postest value distribution It is known that both classes experience an increase in value, as evidenced by the achievement of an excellent maximum value

Gain Score: The gain *score data* is obtained from the difference between posttest and pretest scores. Based on *the gain score data*, it can be seen whether or not the students' critical thinking ability test is improved after being given treatment. The treatment of gain score data can be seen in the following table.

Table 3. Description of Gain Score

Class	Average Score Pretest	Average Score Posttest	Average Score Gain Score
Exhibitions	49,94	82,59	32,65
Control	50,03	73,90	23,87

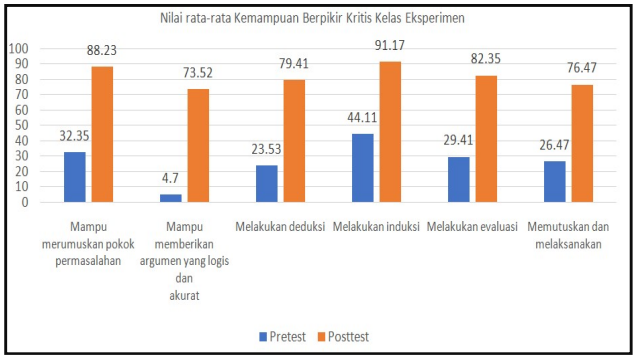
The average difference between the experimental class and the control class was 8.69.

Critical Thinking Ability of each Indicator: The critical thinking score of each indicator using the table has been described with the range of values below:

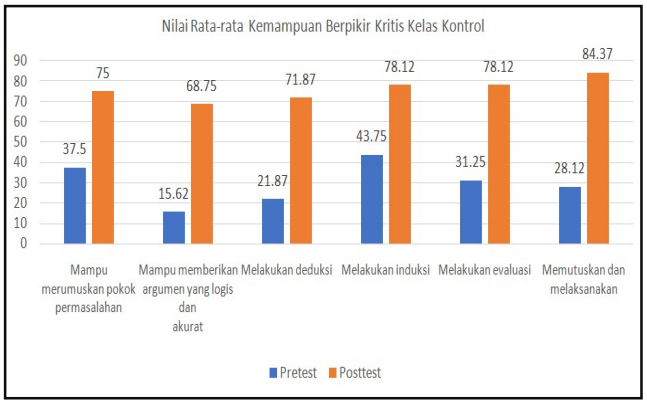
Table 4. Classification of Critical Thinking Skills

Average Score	Category
0-40	Very less
41-55	Less
56-65	Keep
66-80	Good
81-100	Excellent

(Source: Arikunto, 2001)



Graph of the average value of critical thinking ability of each indicator



Average Graph of Critical Thinking Ability Values of Control Class

The ability to think critically in this study consists of six indicators, namely: being able to formulate the main problem; able to provide logical and accurate arguments; make deductions; perform induction; conducting evaluations; decide and implement. Each indicator of critical thinking ability can be presented with an average score to find out the improvement that occurred in both classes. The average score of the experimental class pretest on each indicator, namely, being able to formulate the subject matter: 32.35; able to provide logical and accurate arguments: 14,70; making deductions: 23.53; induction: 44.11; evaluating: 29.41; and decide and implement: 26.47. Based on the graph above, the average value of critical thinking skills looks different from each indicator. The increase in each indicator averaged around 53.43. The most increase in the indicator is able to provide a logical and accurate argument, with an initial value of 14.70 while the final value is 73.52, the difference between the two is quite large, which is 58.82. Furthermore, the elaboration of the pretest score of the control class on each indicator is able to formulate the main problem: 37.5; able to provide logical and accurate arguments: 15,62; making deductions: 21.87; induction: 43.75; evaluating: 31.25; and decide and execute: 28,12. The description of the values of each indicator can be seen in the table below. Average Graph of Critical Thinking Ability Values of Control Class. Based on the graph above, the average score increase of each critically thinking indicator of the control class is different from that of the experimental class. The increase in each indicator averaged around 46.35 lower than the experimental class which ranged around 53.43. The highest increase in the indicator of deciding and implementing, in contrast to the experimental class of the highest value in the indicator, is able to provide logical and accurate arguments. The results of the overall posttest average

score showed that the experimental class was higher when compared to the control class. This is because the experimental class has been given a different treatment in the learning process, namely using a cooperative learning model *Think Talk Write*, while the control class used conventional learning without special treatment. The results of the increase in each critical thinking ability indicator can be seen in the area of the difference in the value increase of each critical thinking ability indicator can be seen in table 10.

Table 5. Average Difference in Pretest and Posttest Scores for Critical Thinking Ability

Indicators	Average difference in pretest and posttest scores	
	Experiment	Control
Able to formulate the main problem	55,88	37,5
Able to provide logical and accurate arguments	58,82	53,13
Deducting	55,88	50
Inducing	47,06	34,37
Conducting an evaluation	52,94	46,87
Decide and execute	50	56,25

The data in the table show a good improvement between the experimental class and the control class. In the experimental class, a higher increase in the indicator was able to provide a logical and accurate argument, which was 58.82, while the low increase in the indicator induced 47.06. In contrast to the control class, the high increase in the indicator of deciding and implementing was 56.25, while the low in the indicator of induction was 34.37.

The hypothesis test of this study uses an independent sample t-test, with the application SSPS for Windows version 16.0. The variable measured in this study is the critical thinking ability of students in social studies learning. The data that will be tested for the hypothesis is *the gain score* data of students' critical thinking ability obtained from the difference in *posttest* and *pretest scores* of the two classes, both the experimental class and the control class. Before the hypothesis test is carried out, a prerequisite test is first carried out which includes a normality test and a homogeneity test.

Prerequisite Test: The prerequisite tests used include the *Kolmogorov Smirnov Test* normality test and *levene's test for equality of varience.*

Normality Test: The data that will be tested for normality is the *gain score of* students' critical thinking ability from the experimental class and the control class. The normality test is carried out to find out whether the data is normally distributed or not. The results of the normality test *gain score* with the help of SSPS 16.0 for windows.

Table 6. Data on the Normality Test of Critical Thinking Ability

Class	Significance	Conclusion
Experiment	0,795	Usual
Control	0,677	Usual

The data from the normality test of critical thinking ability can be seen in the significance of the experimental class and the control class. The results of the normality test of critical thinking ability showed that the significance value of the experimental class was 0.795 > 0.005 while the control class was 0.677 > 0.005, meaning that the two classes were normally distributed. The normality test uses *the Kolmogorov Smirnov Test* at a significance level of 95% or alpha (α) 5%. The homogeneity test used in this study is *the levene's test for equality of variances*with the help of SPSS 16.0 for windows. The results of the homogeneity test for the gain score of critical thinking ability of the two classes can be seen below.

Table 7. Data on the Homogeneity Test of Critical Thinking Ability

Test of Homogeneity of Variances			
Berpikir_Kritis Living Statistic	df1	df2	Sig.
.632	6	14	.703

Table 7. The homogeneity test of critical thinking ability in the experimental class and the control class had a significance value of 0.703 > 0.005, so the data can be said to be homogeneous. So the critical thinking ability of the experimental class and the control class have the same variance (homogeneous).

Hypothesis Test: Hypothesis testing was carried out with the help of SPSS 16.0 for wondows. The calculation was carried out using the t-test (independent sample t-test), because the data from the prerequisite test was distributed normally and had the same variance (homogeneous).

Table 8. Critical Thinking Ability T-Test Data

Class	Number of Students	Average	Sig.
Experiment	34	82,59	0,000
Control	32	73,90	

The results of the study show that the Think Talk Write type cooperative learning model has a positive influence on students' critical thinking skills. Based on the results of data analysis, the influence was caused by the different treatment of the two classes. Experimental classes using the Think Talk Write type cooperative learning model had higher scores compared to control classes using conventional learning (lectures, questions and answers, and discussions). This is in line with the research of Zulkarnaini, 2011; Rudi, et al. 2017; Sri Wahyuni. 2015; Riski, et al. 2017, that learning achievement using the Think Talk Write *type cooperative learning model* can have a positive impact on students' critical thinking skills and can also improve student learning outcomes. Furthermore, TTW also improves students' communication skills (Dewayani, Ayu, 2016. In addition to these two things, it is also accompanied by the emergence of new ideas that students express based on their critical thinking process. The improvement of students' critical thinking skills using the Think Talk Write type cooperative learning model in this study is based on three stages, namely think, talk, and write. The three stages of the Think Talk Write type cooperative learning model will be explained each stage and its influence on critical thinking skills. The first stage in the Think Talk Write type cooperative learning model is think. At this stage, students individually think about possible answers or solution strategies after reading. Sadirman (2007) revealed that thinking is a mental activity to formulate understanding, formulate, synthesize, and draw conclusions. Utomo (2017) also revealed that the improvement of critical thinking skills is a result of the consequences of learning on learning activities. Next, students make small notes about important ideas contained in the reading and things that they do not understand according to their own language. The research conducted

discusses material on the distribution of flora and fauna in Indonesia and the world. The material discussed in this study is that students are given problems contained in the LKPD regarding the factors that cause the spread of flora and fauna in each different area, the impact of forest fires on flora and fauna life, the use of biodiversity, and efforts in the conservation of flora and fauna.

The second stage in the Think Talk Write type cooperative learning model is talk. At this stage, students are given the opportunity to discuss their investigation at the think stage. In this stage, students reflect, arrange and test (negotiate, share) ideas in group discussion activities. Discussing an idea is a good way for students to achieve success in thinking (Baroody, 1993). The material discussed in this stage is based on the talk stage, namely the factors that cause the spread of flora and fauna in each different area, the impact of forest fires on flora and fauna life, the use of biodiversity, and efforts in the conservation of flora and fauna. The third stage in the Think Talk Write type cooperative learning model is write. At this stage, students individually deduce the things that have been gained from the activities *Think* and *Talk* on the Student Worksheet (LKS) that has been provided. In this stage, students conclude by writing based on the material the factors that cause the distribution of flora and fauna in each different area, the impact of forest fires on flora and fauna life, the use of biodiversity, and efforts in the conservation of flora and fauna. Writing activity means constructing ideas, because after discussing with the group members and students are able to express them through writing. According to Eanes (1997), writing is a valuable tool for learning in several ways. Writing can help students to express their knowledge of ideas and stored knowledge so that they can see and reflect on their ideas and knowledge (Masingila, 1996; Kuswari, 2011). Furthermore, Oshima & Hougue (2006) explain that writing is a progressive activity, meaning that when you first write something, you already think about what you are going to say and how you are going to say it, then after you finish writing, you reread what you have written and make changes and corrections, so that writing is never a step of action. because writing is a process that has several steps. This is also supported by Huinker and Laughlin (1996) who found that the application of TTW strategies in learning will provide experience for students in solving contextual problems and to improve students' writing skills especially in organizing ideas.
The underlying cooperative learning model *Think Talk Write* Can improve students' critical thinking skills are discovery learning theory, constructivism theory and the among method. The theory of discovery studies emphasizes that learning is not only to acquire knowledge, but by learning students will have the opportunity to think and participate in acquiring knowledge. The theory emphasizes the learning process that is active, involves students directly (student centre learning), and makes the teacher as a facilitator. Constructivism theory involves students directly and actively in building their knowledge (Hamzah, 2012; *Utomo, 2017*). Students can do learning independently, such as reading, thinking, listening, discussing, observing, and carrying out experiments and reporting them.

CONCLUSION

Based on the results of data analysis and discussion of the research results, it can be concluded that the *Think Talk Write* type cooperative learning model has an effect on students' critical thinking skills in social studies learning for elementary school students. This is evidenced by *the posttest scores of students who applied the Think Talk Write type cooperative learning model that were superior to the scores of students who used conventional learning.*

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