The Effect Of Think Talk Write (TTW) Towards On Ability To Solve Math Story Questions In SD Negeri Tidung Rappocini District Makassar City

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ARTICLE INFO	ABSTRACT
	This research aim to find out the effect of *Think,Talk,Write* (TTW) Learning Model Toward On Ability to Solve Math Story Questions in IV grade at SD Negeri Tidung Kecamatan Rappocini Kota Makassar. The Problem of this research were (1) How was the description of implementation *Think,Talk,Write* (TTW) Learning Model ? (2) What was the extend of the effect of *Think,Talk,Write* (TTW) Learning Model Toward On Ability to Solve Math Story Questions?. The purpose of this research were (1) to know the description of implementation *Think,Talk,Write* (TTW) Learning Model (2) to know the extend of the effect of *Think,Talk,Write* (TTW) Learning Model Toward On Ability to Solve Math Story Questions. The approach used in this research was quantitative with the type of experimental research. The research design used quasi experiment. The research variables consist of independent variables were Think, Talk, Write (TTW) learning models and the dependent variable was the ability to solve Math Story Questions. Data collection techniques using tests, observations and documentation. Data analysis techniques used descriptive statistical analysis and inferential statistical analysis. The results showed that: (1) The implementation of Think, Talk, Write (TTW) models on teacher observation activities took place very effectively and observations of student activities took place effectively. (2) Think, Talk, Write (TTW) learning model significantly influences the ability to solve Math Story Questions for IV grade students of SD Negeri Tidung Rappocini District, Makassar City. The effect can be seen from the differences in posttest results between the control group and the experimental group. The conclusion in this research was the use of Think, Talk, Write (TTW) learning model there is significant influence Toward On Ability to Solve Math Story Questions in Fourth Grade in SD Negeri Tidung Rappocini District, Makassar City.

INTRODUCTION

Successful education will create a decent and worthy human being in the community and not distress others (Suprihatin, 2015). Education is a process of growth and development, as a result of the interaction of individuals with the social environment and the physical environment, lasting throughout life since humans were born (Law No. 23 of 2006).

The process in education includes informally, formally, and informally. Formal education takes place at school. School is a place where students get knowledge they don't know yet and will know and implement in real life. The exact primary school in Tidung State Elementary School was the school chosen because at the time of apprenticeship II the students in this school had less cognitive abilities in learning. In communication with teachers at school, fourth grade students have difficulty in solving math story problems. Direct learning is done in class. Of course, direct learning is carried out by the teacher or homeroom teacher who act as a facilitator.

The current era of globalization is increasingly needed and also increased expensive education. In creating an intelligent and independent generation, the need for education itself is given to anyone as a guide in humanizing human.

Potential or abilities possessed by different people. Likewise with abilities possessed by students. Ability

can be seen and developed starting with a way that needs to be done or the existence of a process that is by learning. Dimyati and Mudjiono (2009: 17) interpret learning as everyday events at school. Learning can develop students' potential or abilities by implementing a learning process and as such it is supported in Permendikbud No. 22 of 2016 Article 1 concerning Basic and Secondary Education Process Standards which states that the Process standard is a criterion regarding the implementation of learning in basic education units and secondary basic education units to achieve graduate competence.

The teacher guides and facilitates learning in the classroom. Students will not know knowledge without teach conducted by the homeroom teacher or the teacher itself. In dealing with students who experience problems in learning, the teacher must pay attention to the strategies, methods, approaches, models, and media used must be clear in order to implement learning and students are not difficult to accept or complete the tasks in learning. Especially in the selection of models to overcome problems in learning.

Students consider learning mathematics very difficult, some even consider mathematics as a scary subject, and mathematics were bored learning. Though mathematics is an important lesson for students, because subjects function to develop the ability to communicate using numbers, symbols and reasoning to help solve problems of daily life, especially to the problem of solving math story problems. Even Hudojo (Salma and Amin, 2008) said that understanding and solving story problems was the most difficult thing at the elementary school level.

The right model to used was the Think, Talk, Write (TTW) Model. The Think, Talk, Write (TTW) model is a constructivist learning design through self- communication activities, students and teachers that encourage students to think, talk, express opinions, and write the results (Isrok'atun and Rosmala, 2018: 154). The first Think, Talk, Write (TTW) model was introduced by Huinker and Laughlin in 1996. Isrok'atun and Rosmala (2018: 156) say that the TTW learning model has stages of completing a task.

The Think, Talk, Write (TTW) model is the right model to help students solve mathematical story problems (Kusumaningrum, 2016: 8). Students play an active role during learning and accustom students to communicate with friends, teachers and even themselves, and use media that attract students' attention in learning.

Based on the above symptoms, prospective researchers were interested in studying and knowing the effect of Think, Talk, Write (TTW) Learning Model Towards on Ability to Solve Math Story Questions in IV Grade at SD Negeri Tidung Rappocini District, Makassar City

1. Think. Talk, Write (TTW) Learning Model

a. Definition of *Think Talk Write* (TTW) Learning Model

The TTW Learning Model was first introduced by Huinker and Laughlin in 1996. The TTW Learning Model is based on constructivist learning which is applied throgh thinking, speaking and writing activities.Huinker and Laughlin (in Hamdayana, 2014: 217) state that:"The TTW learning process can build understanding through thinking, speaking, writing by involving students in thinking and dialoguing with themselves after going through the process of reading, and subsequently speaking and sharing ideas (sharing) with friends before writing".

The core of the TTW learning model according to Isrok'atun and Rosmala (2018:153) is a constructivist learning design through self-communication activities, students and teachers that encourage students to think, talk, express opinions, and write the results. When the teacher gives an assignment, students will often find the answer directly. The answers written can be understood by themselves but not necessarily understood by other students. Therefore, it would be better before writing the answers, students do the thinking process, arrange ideas, and ways to solve them. This certainly helps other students to understand the answers they write. Think Talk Write can be interpreted as thinking, speaking, and writing.

2. Ability to Solve Math Story Questions

a. Definition of Math Story Question

The story revealed can be a matter of daily life or other problems. The weight of the problem revealed will affect the length of the story. The greater the weight of the problem expressed, allowing the longer the story presented.Rostika and Junita (2017: 175) interpret the problem story is one form of the problem stated in the form of sentences that need to be translated into mathematical notation and generally associated with everyday life.

Solving story problems requires several abilities that students must master. One of them was the

ability to translate sentences in mathematical notation. Storytelling problem solving means according to Laily (2014) a person's way to solve problems in the form of mathematical problems that are presented in the form of stories. While the ability to solve story problems means someone's ability to solve math story questions in the form of mathematical questions presented in the form of stories.

3. Mathematics

a. Definition of Mathematics

The word mathematics comes from several terms. In the writings of Suwaningsih and Tiurlina (Isrok'atun and Rosmala, 2018: 3) the mathematical term originates from the Greek word mathematike which means to study. The word mathematike comes from the word mathema which means knowledge or science (knowledge, science). In addition, the word mathematike also deals with other words that are almost the same, namely mathein or mathenein which means to think Mathematics according to Isrok'atun and Rosmala (2018: 3) as deductive science means that mathematics required proof of truth. Mathematics as a structured science means that mathematical concepts are arranged hierarchically and begin with undefined elements, undefined elements, action, and theorems. Mathematics has order so that it can be generalized based on the patterns found, as well as from mathematical concepts that were still related (Isrok'atun and Rosmala, 2018: 4). Isrok'atun and Rosmala (2018: 4) interpret Mathematics as the language of symbols, meaning that mathematics is written using symbols that were comprehensive and have dense meanings.

METHOD

The problem approach used in this research is to use a quantitative approach. Quantitative approach used in this study because it will test the truth or strength of a theory that is still hypothetical through quantitative data analysis using statistics.

This type of research was experimental research. The type of research used Quasi Experimental Design (nonequivalent), with the research method used to look for the effect of certain treatments on others under controlled conditions. The intended treatment was the giving of Think, Talk, Write (TTW) learning models to students' ability to solve math story questions.

This study examines two variables, namely Think, Talk, Write (TTW) learning models as independent or influential variables, while the ability to solve math story questions as dependent or dependent variables.

This study used research design that is Quasi Experiment (the existence of a pretest before being treated) because it compares with the situation before being treated. The Quasi Experiment form used Nonequivalent Control Group Design which consists of a control group and an experimental group. Experimental group was group that give the treatment or treatment in the form of Think, Talk, Write (TTW) learning models. The control group did not use the Think, Talk, Write (TTW) learning model. The terms used follow.

1. Think, Talk, Write (TTW) learning model as a learning model that used when treatment is a model where T is for think which means students individually think of possible answers and make small notes, T for talk which means students interact and exchange opinions, and W to write which means students write the results of the discussion using mathematical language.
2. The ability to solve math story questions were the ability of students to understand math story questions by formulated mathematical symbols and making conclusions used mathematical language.

The population in this study were all high class students that classes 4.5, and 6 Elementary School in Tidung. The sampling technique used purposive sampling. Purposive sampling technique. This study has no sampling and there is no generalization of the population. To determine which belongs to the experimental group is to look at the value of the results of pretest classes 4a and 4b.

The techniques and procedures used in collecting data in this study were tests, observations and documentation.

The instrument validation was matter validation test which generally determined through expert judgment. The questions to be validated contain a description of the form of stories in Mathematics. The instrument expert validators in this study were experts in Mathematics.

The prerequisite tests conducted were normality test and homogeneity test. And the hypothesis test used the Independent Sample t test. Size the effect of a variable on other variables, the magnitude of the difference and the relationship that is free from the influence of the sample size can be calculate using the effect size Cohen's d.

RESULTS AND DISCUSSION

The results of this study will describe the purpose of the research conducted, which is to find out the description of the implementation TTW learning model on the ability to solve math story questions in fourth grade at SD Negeri Tidung, Rappocini District, Makassar City, and find out how much influence the TTW learning model has on the ability to solve math story questions in Fourth Grade at SD Negeri Tidung, Rappocini District, Makassar City

The first thing to do is test validation. The test is one of the instruments to test the ability to solve students' story questions and observation sheets to find out the description of the implementation of the TTW learning model and how much influence the TTW learning model has on the experimental group. Observation sheet is used during the process of giving treatment to the experimental group. While the test instrument used in the pretest and posttest activities to measure the ability to solve math story questions in the experimental group and the control group. In this study, there were 21 subjects in the experimental group and 21 in the control group in the pretest and posttest activities.

The test instrument has been validate by experts to assess the mathematical language in the form of a description of the story and the suitability of the item with a predetermined grid. The expert validation was Mr. Bahar, S.Pd., M.Pd. Researchers have made a number of 10 test instruments in the form of description of the story in everyday life. Then analyzed mathematical language in the story questions by expert validation and obtained test instruments that were declared valid are 10 item description of the story form. The valid question story used an instrument to measure students ability to solve math story questions before use treatment (pretest) and after procuring pretest, the researcher used TTW learning model as a treatment for students ability to solve math story questions in fourth grade.

The study was conducted by researchers for approximately 2 weeks with 2 meetings both in the experimental group and the control group. The first meeting the researchers conducted a pretest on 2 classes on the same day. The next meeting is a learning process. The learning process in the experimental group used TTW learning model, while the control group used the conventional model. At the end of the meeting, the researcher gave a posttest in 2 classes to find out whether there were differences in the ability to solve math story questions. More detailed research results were described as follows:

1. Overview of the Implementation of Think, Talk, Write (TTW) Learning Models

The process of learning mathematics in the experimental group with the same and interconnected material, namely fractions and FPB and KPK, was conducted during 2 meetings. The implementation of the TTW learning model on the Ability to solve Math Story Questions in the experiment group is described through observation sheets of teacher and student activities. The learning steps observed were 1) the core learning activities. The Activities result of the implementation of teachers and students can be seen as follows:

a. Observation Teacher Activities

The implementation of Mathematics learning used TTW model conducted by the teacher can be known through observations. Recap the results of teacher bservation activities can be seen through table 1.

Table 1 Result of Observation Teacher Activities

No	Aspek yang Diamati	Skor	
		Pertemuan	Pertemuan 2
1.	Total	2	42
2.	Total Percentage	5	88%
3.	Category	Effective	More Effective

The results of observations above table can concluded that the existence of a learning process was quite effective at the first meeting can be seen in the data above with a percentage of 55% shows that the delivery of material used the TTW learning model is quite effective in its implementation. At the second meeting the learning process took place very effectively because it showed a large improvement can be seen from the percentage of the second meeting by 88%. In this case, teaching conducted by teachers used TTW model was implemented very well on students in learning mathematics.

b. **Student Observation Sheet**

The process of student learning activities known through the results of the observation sheet of student activities. The results calculation of observations for these student activities can be known through table 2 below.

Table 2 Description Students Observation Sheet

No	Aspek yang Diamati	Skor	
		Meeting	**Meeting 2**
1.	Total	1	226
2.	Total Percentage	4	67%
3.	Category	Effective	Effective

The above data can be concluded that the learning process of the first meeting was held with a percentage level of 43% categorized as quite effective. The learning process of the second meeting was held with a percentage level of 67% effective category. The percentage of achievement was obtained from two meetings by determining the percentage of student activities in all aspects by summing the percentage of each aspect divided by the number of aspect. The explanation show that the implementation of learning used TTW learning model conducted by students took place well by showed an increase in the percentage of meetings I and II.

Description of Ability to Solve Math Story Questions

The results of the initial test (pretest) about the ability to work on math story questions before given TTW learning model treatment of ability to solve math story questions in fourth grade at SD Negeri Tidung, Rappocini District, Makassar City were obtained from the results of tests given to students totally 21 students

Tests to determine ability to solve math story questions there were 10 questions in the form of storytelling on 2 similar and interrelated material. Each problem has an alternative solution in the form of: 1) writing what is known in the problem, 2) writing the formula contained in the problem, and 3) writing all the elements identified and each has a problem that has a different value or weight. Where the questions number 1,3,5,7,9 weighted 2 while the numbers 2,4,6,8,10 weighed 1. When students answered correctly and wrote down all the elements then got a value of 10 in 1 problem. When students answer in a question without writing down all the elements, they get a value of 5, while writing the answers and have not completed in full then get a value of 2. The test results were entered into a table to be processed into quantitative data.

a. Description of Reserch Results

1) Pretest **Data of Ability to Solve Math Story Questions in experimental dan control group**

Pretest data of ability to solve math story questions in the experiment and control groups The initial test or pretest on ability to solve math story questions in the experiment group was first held on July 23, 2019 with a total of 21 research subjects. Pretest data was obtained and then processed use the IBM SPSS Version 22 program to find out the description data of the pretest scores of the experimental group and control group.

Data from the pretest results of the experimental group and control group students can be seen in the following table:

Tabel 3 Description of Value *pretest* students in experimental dan control group

Descriptive Statistical	Nilai	
	Experiment	**Control Pretest**
Subjects	2	21
High Value	4	50
Small Value	1	25
Mean	3	35,48
Median	3	34
Mode	4	25
Standart Deviation	9	8,116

Descriptive data values in table 3 above can be concluded the average value in ability to solve math story questions in the experimental group is lower than the control group, where the experimental group is given treatment, named Think, Talk, Write (TTW) learning model. While the control group has a high average value so that give a conventional learning model.

The results of descriptive analysis for the results of the pretest answers of students in the experimental group related to the dependent variable named ability to solve math story questions in fourth grade can be seen in the following table

Table 4. Frequency Distribution On Mean Values Of Ability To Solve Math Story Questions In Pretest Data Experiment Group

No	Categories	Interval	Frequency	Percentage
1	Very High	$78,75 < x \leq 100$	0	0%
2	High	$57,5 < x \leq 78,75$	0	0%
3	Medium	$36,25 < x \leq 57,5$	7	33%
4	Small	$15 \leq x \leq 36,25$	14	67%
	Totally		21	100%

Frequency distribution on mean values of ability to solve math story questions in pretest data experiment group on table 4 explain that there were 14 students that got low value on ability to solve math story questions. Atleast first test show nothing grow up on value.

Next is the result of descriptive analysis for the result pretest answers of students in the control group related to the dependent variable, named ability to solve math story questions in fourth grade can be seen in the following table:

Table 5 . Frequency Distribution On Mean Values Of Ability To Solve Math Story Questions In Pretest Data Control Group

No	Categories	Interval	Frequency	Percentage
1	Very High	$81,25 < x \leq 100$	0	0%
2	High	$62,5 < x \leq 81,25$	0	0%
3	Medium	$43,75 < x \leq 62,5$	4	19%
4	Small	$25 \leq x \leq 43,75$	17	81%
	Totally		21	100%

Frequency distribution of the average value of the ability to solve math story questions in the pretest data of control group in table 4.5 can be concluded that the 17 students who got low scores which showed the ability to solve math story questions of the control group students did not increase.

2) Posttest data ability to solve math story questions in the experimental and control groups

Final Test or Posttest on ability to solve math story questions in the experimental group was first held on July 24, 2019 with a total of 21 research subjects. Posttest data was obtained and then processed use the IBM SPSS Version 22 program to find out the description data of the posttest scores of the experimental group and control group students. Data posttest results of the experiment group and control group can be considered in the following table:

Table 6 Descriptive Pretest Scores Of Students In The Experimental And Control Groups

Descriptive Statistical	Nilai	
	Experimental Posttest	Control Posttest
Subjects	21	21
High Value	77	51
Small Value	25	26

Mean	60,43	36,86
Median	61	36
Mode	53	26
Standart Deviation	10,893	7,825

Descriptive posttest score of students in the experimental and control groups Table 6 above can be noted that the mean value of the experimental group is higher than the average value of the control group. Thus it can be concluded that the groups treated with Think, Talk, Write (TTW) learning models in the ability to solve math story questions experienced an increase from the initial tests that had done previously. Also can be seen in the results of student tests that answer each element identified in each test questions that have been given stories.

The results of descriptive analysis for the results of the students' posttest answers in the experimental group related to the dependent variable namely the ability to solve math story questions in fourth grade can be seen in the following table:

Table 7 Frequency Distribution Of Average Values Ability To Solve Math Story Questions In Experiment Grou

No	Categories	Interval	Frequenc y	Percentage
1	Very High	$79,25 < x \leq 100$	0	0%
2	High	$61,5 < x \leq 79,25$	11	52,4
3	Medium	$43,75 < x \leq 61,5$	9	42,9
4	Small	$25 \leq x \leq 43,75$	1	4,7%
	Ummar		21	100%

Frequency distribution of the average value of the ability to solve Math story questions in the posttest data of the experiment group in table 7 can be concluded that ability of to solve math story quetions after giving treatment or treatment occurs very well, it can see as many as 11 students who scored high.

Next is the results of descriptive analysis for the results of the pretest answers of students in the experimental group related to the dependent variable, named ability to solve math problem questions in fourth grade can be seen in the following table:

Tabel 8 Frequency Distribution Of Mean Values Ability To Solve Math Story Questions In The Control Group Posttest Data

No	Categories	Interval	Frequency	Percentage
1	Very High	$79,25 < x \leq 100$	0	0
2	High	$61,5 < x \leq 79,25$	11	52,4%
3	Medium	$43,75 < x \leq 61,5$	9	42,9
4	Small	$25 \leq x \leq 43,75$	1	4,7%
	Summary		21	100%

Frequency distribution of the average value of the ability to solve math story questions in the posttest data of the control group table 8 above can be concluded that the ability of students to solve math story questions used conventional models did not increase.

1. **The Effect of Think, Talk, Write (TTW) Learning Model on the Ability to Solve Mathematical Story Problems of Grade IV Students in SD Negeri Tidung, Rappocini District, Makassar City**

     The influence of the Think, Talk, Write (TTW) learning model on ability to solve math story questions can be identified through the results of inferential statistical analysis. Inferential statistical analysis consists of test assumptions and hypothesis test. A more detailed explanation as follows:

   a. **Test Data Assumptions Analysis**

          The results of inferential statistical analysis were interpreted to answer the hypotheses that have

been formulated. Before conducting inferential statistical analysis, the assumptions test was normality and homogenity.

1) **NormalityTest**

Normality test used standard deviation and the mean as parameters and find out whether the sample used in this study was from a normally distributed population or not. Normality test was conducted on the data of students' ability to solve math story quetions in each group both the experiment group and the control group was tested use the Statistical Package for Social Science (SPSS) version 22 with the Kolmogorov-Smirnov Normality Test.

The normality test results can be seen in the output of the Kolmogorov- smirnov Test of Normality session on the Sig. (significance). Data is normally distributed if sig> α, where the significance of α is 5% or 0.05. If the significance is greater than 0.05 then the data is normally distributed. If the significance is less than 0.05 then the data is not normally distributed.

Table 9 Test Normality Test Results for Pretest and Posttest Experiment Group and Control Group

Data Kelompok	Kolmogorov- Smirnov Probabilitas	Keterangan
Pretest Experimen	0,	0,200 > 0,05 = Normal
Posttest Experimen	0,	0,200 > 0,05 = Normal
Pretest Control	0,	0,200 > 0,05 Normal
Posttest Control	0,	0,200 > 0,05 = Normal

T h e normality test results of the pretest and posttest experimental and control groups above show that the results obtained were normally distributed. This can be seen from the results of the normality test on the four data group where the probability value obtained is greater than 0.05. Thus it can be concluded that the experimental and control group data were normally distributed.

2) **Homogenity Test**

H o m o g e n e i t y test was performed to determine whether the data obtained from the two group were homogeneous or not. Homogeneity test was processed use the IBM SPSS Version 22 program used Levene Test. Group data was said to homogeneous if the probability value is greater than the value α o0.05, and vice versa. The results of the pretest and posttest homogeneity tests in the experiment and control groups can be seen in the following table:

Table 10 Homogeneity Test Results of Pretest and Posttest Experiment Groups and Control Groups

Data Kelompok	Nilai Probabilitas	Keterangan
Pretest Experiment dan Kontrol	0,481	0,481> 0,05 = Homogen
Posttest Experimen dan Kontrol	0,588	0,588 > 0,05 = Homogen

Homogenity test results of the pretest and posttest of the experimental group and the control group table 10 show the probability value in the Levene Test was greater than α or 0.05. Then the parametric test or t test is performed because it is one of the prerequisites that must be met. And the two data groups that have been tested were homogeneous.

3) **Hypothesis Test**
   a. *Independent Sample T-test*

Independent Sample T-test is a comparative test or different test to find out whether there was a meaningful difference in mean or mean between 2 free groups with interval data scale. The two free groups in question were two groups that were not paired, meaning the source of data comes from different subjects. This test will be assisted by IBM SPSS Version 22.

Independent Sample T-test Pretest Experiment Group dan Control Group

This analysis aims to determine the differences in the ability to solve math story questions between groups of students who take learning with Think, Talk, Write (TTW) learning models and those used conventional models. This analysis was test the results of the experiment and control group pretest used the IBM SPSS Version 22 program. The interpretation of this test is if the probability value is less than 0.05 then there was a difference. The results of the independent analysis of the sample t- test pretest of the experimental group and the control group were available in the following table:

Table 11 Analysis Results Of *Independet Sample T-Test Pretest* Experiment And Control Group

Group Data	T	Df	Probability Value	Evidence
Pretest Experiment and Control Group	**-,884**	**40**	**0,382**	**0,382<0,05 =Nothing Differences**

Independent Sample T-test Posttest Experiment Group and Control Group

This analysis aims to determine the differences in the ability to solve math story questions between groups of student who take learning with Think, Talk, Write (TTW) learning models and those use conventional models. This analysis is to test the results of the experiment and control group pretest used the IBM SPSS Version 22 program. The interpretation of this test is if the probability value is less than 0.05 then there is a difference. The results of the independent analysis of the posttest sample t-test of the experiment group and the control group were available in table 12:

Tabel 12 Results of *Independet Sample T-test Posttest* Experiment and Control Group

Data Kelompok	T	Df	Nilai Probabilita s	Keterangan
Posttest Eksperimen Dan	**8,054**	40	0,000	0,000<0,05 = Ada Perbedaan

The results of the independent test posttest sample t-test experimental and control groups in table 4.12 can be concluded the probability value was smaller than α or 0.05. This show that there was a difference in the average ability to solve math story questions between Think, Talk, Write (TTW) learning model and conventional model. By looking at the tcount of 8.054 and by looking at α is 0.05 and df is 40 then t arithmetic has a value that is greater than ttable is 8.054> 1.68385, it can be concluded that the posttest data obtained shows that there are significant differences.

Based on the description above, the hypothesis at a significant level α is 0.05 obtained tcount> ttable is 8.054> 1.68385 then H0 is rejected and Hα is accepted, meaning that there is an influence of the Think, Talk, Write (TTW) learning model on the ability to solve math story in fourth grade at SD Negeri Tidung, Rappocini District, Makassar City.

The results obtained that the Think, Talk, Write (TTW) learning model has a significant

influence on the ability to solve Math story questions, then the measurement of effect size was calculated use the Cohen's d formula. The magnitude of the effect of giving Think, Talk, Write (TTW) learning models to the ability to solve Math story questions were available in the following

DISCUSSION AND RESEARCH RESULTS

This study used two different learning models, named the Think, Talk, Write (TTW) learning model and the conventional learning model implemented on July 23, 2019 to August 7, 2019 in class IV B (experimental) consisting of 21 students, while the conventional learning model is implemented in Class IV A (conventional) consists of 21 students. The experimental class learning process takes place 2 times by teach Mathematics 2013 Curriculum material, named fractions and FPB and the KPK using Think, Talk, Write (TTW) learning models.

1. **Overview of the Implementation *Think, Talk, Write* (TTW) Learning Model**

Initial research was give treatment with the stage of carrying out the opening, core and closing activities. The opening activity was carried out as usual by reading prayers, checking student attendance, apperception and associating with learning material, conveying learning objectives, conveying the benefits of learning, and conveying learning activities. In the core activities of thinking (thinking), talking (talk), and writing (writing) the learning process by dividing students into 3-5 people in one group heterogeneously by looking at the results of the initial test (pretest) students. Activities carried out before dividing students into several groups, the teacher explains a little of the material learned by using learning media as a support. After that, each group is given a Student Worksheet (LKS). The worksheet contains steps for solving Mathematical story problems which are carried out in groups. This activity in solving math story quetions will prove the effect of the ability to solve math story questions in the form of valuable fraction stories and will be discussed by students in groups. Students discuss with classmates and the teacher walks around while guiding student discussion groups. This activity contains elements of think, talk, and write. Think looks at each student in 1 group reading the problem then thinking about what is known in the problem. Talk is seen when students ask the teacher and their group friends what is unknown and discuss in solving problems that will be solved. Hamdayana (2014: 222) states that the interaction activities that students do aim to develop the concept of material independently and also get used to communicating well. With these activities students become confident, think critically, creatively and passion for learning Mathematics, especially in solving story problems. Write is seen when students have discussed with a group of friends and then write in the formula answer column and everything identified in the Math story questions. Next is the presentation in front of the class after the group discussion. Each group advanced to present the results of the discussion then the other groups were given the opportunity to ask questions if there were still unknowns or lack of understanding. The teacher responds to the results of student discussions and aligns students' answers and then rewards groups of students who answer well and correctly. Furthermore, the closing activity, in this activity the teacher reviews the activities that have been carried out in the learning and asks students to reflect by answered the question how they feel after participating in the learning activities. Next the teacher gives reinforcement, conclusions and moral messages on the learning that has been done, and ends the learning by appointing one of the students to lead to read the prayer.

The learning process in the experimental group uses observation sheets to observe the activities of the teacher and students to get a picture of the implementation of the Think, Talk, Write (TTW) model. Assessment for teachers is assessed by one aspect, namely core activities. The learning process at the first meeting using the Think, Talk, Write (TTW) learning model is quite effective. The learning process at the second meeting was classified as very effective. By used the Think, Talk, Write (TTW) learning model, teacher activity has increased.

Students activities were observed by several aspects, named think, talk, and write consisting of several indicators, namely students discussing following the learning steps in the worksheet. The learning process at the first meeting using the Think, Talk, Write (TTW) learning model is in the quite

effective category. The learning process at the second meeting use the Think, Talk, Write (TTW) learning model is in the effective category. By using the Think, Talk, Write (TTW) learning model, student activity has increased.

2. Overview of Ability to Solve Math Story Questions

The description on the implementation of Think, Talk, Write (TTW) models is known, the next step is to do a descriptive statistical analysis to find out the ability to solve Mathematical story problems in the experimental and control groups. Data on students' ability to solve mathematical story problems is calculated based on alternative problem solving. When students answer correctly and write down all the elements, they get 10 in 1 question When students answer in a question without writing down all the elements, they get a value of 5, write an answer and haven't completed it in full, then get a value of 2, while answering but wrong value 1. The results of the calculation of the ability to solve story problems for the experimental group before giving treatment (treatment) the initial ability test (pretest) is in the low category and for the control group is in the low category. The results of the calculation of the ability to solve story questions for the experimental group after giving treatment (treatment) on the final ability test (posttest) are in the medium category and for the control group are in the low category.

The statement above can be interpreted that the Think, Talk, Write (TTW) learning model is successfully used to solve math story questions stated by Hamdayana (2014: 222) states the presentation of an interesting and challenging event for students at the beginning of learning can develop abilities think critically, of a phenomenon and try to find a solution.

3. Effect of *Think, Talk, Write* (TTW) Learning Model Ability to Solve Math Story Questions in Fourth Grade at SD Negeri Tidung Rappocini District Makassar City

The ability to solve math story questions in the experimental group has increased indescriptive analysis. The next analysis conducted is inferential statistics to see the probability values in the two data, named the pretest and posttest that have been collected. In inferential statistical analysis, various tests such as the assumption test consist of tests of normality and homogeneity and hypothesis testing. Test for normality in the pretest and posttest data the ability to solve math story questions in the experimental and control groups using the Kolmogorov-Smirnov test where the data show normal distribution. Next is to test the homogeneity of the pretest and posttest data the ability to solve math story questions in experiment and control groups used Levene's test with the results of the two data groups declared to homogeneous. Next is hypothesis test in this case used the Independent Sample T-test which shows that there was a significant influence on ability to solve math story questions after use of Think, Talk, Write (TTW) learning models in the learning process.

The results of hypothesis testing are carried out in two ways, named comparing t_{table} and t_{count} and comparing probability values. Statistical results used manual calculations for the Independent Sample T-test test combined with IBM SPSS Version 22 program with t_{table} value with df indicating the number 40, 1.68385. While the t_{count} on the ability to solve Math story questions was 8.054. With the meaning that $t_{count} > t_{table}$ is 8.054 > 1.68385 so that H0 was rejected and Hα was accepted. The way to compare probability value was obtained from the significance value of the ability to solve students' Mathematics story questions (posttest) in the experiment group and the control group at 0.025. That means $t_{count} > t_{table}$ so H0 was rejected and Hα was accepted. Whereas by comparing the probability values obtained the significance value of the ability to solve Math story questions (posttest) in the experiment group and the control group, the probability value obtained was less than 0.05 ie 0,000 so it can be concluded that there was a significant difference between the experiment group posttest and control group.

The results of the measurement of the effect size of the TTW model on the ability to solve Math story questions calculated use Cohen's formula d obtained an effect size of 2.5 in the interpretation table where the implementation of the Think, Talk, Write (TTW) learning model towards on ability to solve Math story questions affect students very well with a percentage of 99%

The research findings can be said that there was a positive and significant influence on the Think,

Talk, Write (TTW) learning model towards on the Ability to Solve Math Story Questions in Fourth Grade at SD Negeri Tidung, Rappocini District, Makassar City. This is in line with research conducted by Putri Dewi Andriani (2016, Journal of PGSD FKIP Journal of Eleven March niversity) which states that by applying the Think, Talk, Write (TTW) learning model successfully improves the ability to solve math story questions. And as stated by Huinker and Laughlin (1996: 82) states that the learning model of think, talk, write (TTW) builds thought, reflects, and organizes ideas, then tests these ideas before students are expected to write.

CONCLUSION

Conclusion

1. The Think, Talk, Write (TTW) learning model was implemented during two meetings and was observed use teacher observation sheets and student learning activities. Based on the results of the implementation of Think, Talk, Write (TTW) learning models in the learning process in the observation of teacher activities that is 88% with a very effective category. On the results of observations of student learning activities that is 57% with the effective category.

2. The extend of Think, Talk, Write (TTW) learning model towards on the ability to solve math story qestions in fourth grade at SD Negeri Tidung, Rappocini District, Makassar City is shown by the results of hypothesis testing which obtained $t_{count} > t_{table}$ with the acquisition of t_{count} from the posttest results of students and t_{table} were at df 40, and the measurement percentage of the effect is 99%.

Recommendation

Suggestions that can give based on the implementation and results of this study were more attention to models and instructional media according to the material to be discussed. As well as mastering the subject matter taught so that the success of learning is achieved and pay attention to the allocation of time so that all stages of learning were taught properly so that the effect towards on the ability to solve Math story questions were more optimal.

REFERENCES

Chandra, S. H., Fauzan, A., & Helma. (2014). Pengaruh Model Pembelajaran Tipe Think Talk Write Dan Gender Terhadap Kemampuan Komunikasi Matematis Siswa Kelas VII SMPN 12 Padang. *Jurnal Pendidikan Matematika.*

Cohen, L. Manion & Marisson, Lawrence. 2011. *Reseacrch Methods in Education.* London: Routledge.

Dimyati dan Mudjiono. 2009. *Belajar dan Pembelajaran.* Jakarta: Rineka Cipta.

Hamdayana, Jumanta. 2014. *Model dan Metode Pembelajaran Kreatif dan Berkarakter*. Jakarta:Ghalia Indonesia.

Isrok'atun dan Rosmala (Ed.). 2018. *Model-model Pembelajaran Matematika*. Jakarta: Bumi Aksara.

Laily, I. F. 2014. Hubungan Kemampuan Membaca Pemahaman dengan Kemampuan Memahami Soal Cerita Matematika Sekolah Dasar, (Online), Vol.33 No.11, 5262.http://www.syekhnurjati.ac.id/jurnal/index.php/eduma/article/download/8/7.(diakses 1 Juli 2014).

Permendikbud Nomor22 Tahun 2016 Pasal 1 tentang Standar Proses Pendidikan Dasar dan Menengah, https://luk.staff.ugm.ac.id/atur/bsnp/Permendikbud22 2016SPDikdasmen.pdf. Online (diakses 25 Maret 2019).

Rostika, D., & Junita, H. 2017. Peningkatan Kemampuan Pemecahan Masalah Siswa SD Dalam Pembelajaran Matematika Dengan Model Diskursus Multy Representation (DMR). *Jurnal Ilmiah Pendidikan Matematika, 9(*1),172-180 Nila, Merdekawati .2014 Pengaruh Penerapan Model *Contextual Teaching And Learning* Terhadap Motivasi Belajar Ipa Siswa Kelas V Sd Negeri 1 Kebondalem Lo.

S Salma dan Amin. 2008. *Prinsip Desain Pembelajaran*. Jakarta: Kencana.Sinring, Abdullah, dkk. (2016). *Pedoman Penulisan Skripsi Program S-1 Fakultas Ilmu Pendidikan UNM*.Makassar: Fakultas Ilmu Pendidikan UNM.

*Undang-undang Republik Indonesia Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional.*Jakarta: PT Amas Duta Jaya.