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The Relationship of Student Process Skills to Student Responses with the Student Team Achievement Division (STAD) Learning Model

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ABSTRACT

Effective learning can be increased by forming several groups that have diversity in abilities, gender, and ethnicity. So this research was conducted with the aim of knowing the relationship between students' process skills on student responses to the Student Team Achievement Division (STAD). learning model for the volume of blocks and cubes. This research is a survey research, this study uses quantitative data analysis with the help of SPSS statistics 25, to find descriptive statistics, test assumptions and test hypotheses. The results obtained from this study were conducted in 4 schools, namely 2 SD and 2 MI with 36 students in each class. So the total number of students is 144 students. Based on the correlation test, it was concluded that there was a relationship between students' process skills on student responses with the Student Team Achievement Division (STAD). learning model for the inter-school volume of blocks and cubes. the writer gives suggestions, namely the implementation of the Student Team Achievement Division (STAD) cooperative learning model as an effort to improve Student Process Skills.

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1. INTRODUCTION

Education is very important in our life. Education is a very important thing in developing attitudes, achievements and the quality of human resources in order to create progress in the nation (Mahendra, 2017; Hekmah et al., 2019; Abdulah et al., 2021). Education is a continuous learning process in social activities to acquire knowledge, skills, attitudes and thinking abilities carried out by a person to develop individuals (Hidayat, 2017; Abbas & Yusuf Hidayat; 2018., Rosidin et al., 2019). Education can be interpreted as an approach to improve the quality of education, by focusing on methods, teaching and learning (Campbell et al., 2017; Quay, 2017; Cai et al., 2020). In education, we must be familiar with Mathematics.

Mathematics is a branch of education. Mathematics is part of education that studies natural phenomena and the way nature works (Susilawati et al., 2017; Suharta, 2019; Asrial et al., 2020; Laksana et al, 2020). Primary school mathematics learning can hone students' mathematical abilities to think logically, analytically, critically and systematically by improving the learning process (Kenedi, 2019; Nurlaily et al., 2019; Saleh et al., 2018). Mathematics subjects are less attractive because most students still think that mathematics is difficult (Arifah et al., 2019; Das, 2019; Safitri et al., 2017). One of the factors that determine the success of mathematical results is the learning model used.

Learning models are very diverse in education. The use of learning models greatly affects the process and learning outcomes (Brinus et al., 2019; Cahyaningrum et al., 2019; Hanifah et al., 2019). In learning students are required to experience for themselves, seek, try and draw conclusions on the process of the skills they do (Kruit et al., 2018; Solé-Llussà et al., 2019; Mutlu, 2020). In order for the learning objectives to reach the target properly, it is necessary to select appropriate learning methods and strategies (Dian & Sri, 2017; Anugraheni, 2018; Mansur & Rafiudin, 2020). There are several learning models that can be used, including Student Team Achievement Division (STAD).

Student Team Achievement Division (STAD) is one of the popular learning models used. The Student Team Achievement Division (STAD) model is a model that assigns students to form four or five member study teams mixed in performance level, gender, and ethnicity. (Prananda, 2019; Rangkuti et al., 2019; Rulyansah et al., 2019) . The development of learning models with the STAD model greatly affects learning outcomes, is expected to increase students' understanding of concepts (Slavin, 2005; Dewi, Arcy Suzana, Isnani, 2017; Septian et al., 2020) The Student Team Achievement Division (STAD) type learning model is one of the learning models that is useful for fostering cooperative, creative, critical thinking and helping skills (Ariawan, 2018; Israil, 2019; Jaelani et al., 2019). The use of the right learning model supports the formation of a learning process that is in line with the educator's plan.

Process skills are very important for every student to have. The process towards life skills requires an exercise and requires a process called process skills (Lusidawaty et al., 2020; Yusri, 2018; Asmi & Hasan, 2017). Skills are very important to generate new knowledge through learning activities to improve students' understanding (Vansteensel et al., 2017; Stender et al., 2018; Vartiainen & Kumpulainen, 2020). Process skills are processes designed in such a way that students understand facts, concepts, and relate them to the theories and attitudes of students themselves (Iswatun et al., 2017; Sakdiah et al., 2018; Gunawan et al., 2019). With good student skills, it will be easier for students to understand and succeed in accordance with educational goals.

Teaching is the activity of implementing the educational curriculum to achieve the educational goals that have been set. To achieve these educational goals, a teacher as an educator has a very important role and influence for students in building student character at school and must be able to create an active, fun teaching and learning atmosphere and impress students in learning activities so that students can absorb and receive the knowledge they learn. get it as a provision for life later (Sholihat et al., 2017; Widiana et al., 2018; Widiansyah, 2018; Astalini et al., 2020). It is hoped that the next generation of quality will emerge and be able to make changes for the better in the life of the nation and state so as to create a generation that has life skills. One of the skills needed is the ability to solve problems (A Widiansyah, 2019.; Anugrah et al., 2020; van den Heuvel et al., 2020). The existence of learning objectives can make it easier to deliver students to master concepts and relate these concepts to everyday life.

This research is in line with research (Mahmud, 2017; Siswono, 2017; Gasila et al., 2019; Halimah et al., 2019) that the implementation of Student Team Achievement Division (STAD). type cooperative learning has an effect on successful process skills that will increase student activity and understanding. However, there are some differences and updates, as in previous research it did not discuss more specifically about the indicators used in process skills as used in this study, the indicators used were Observation, classification and compiling tables and the material used in this study was volume material. blocks and cubes learned with the Student Team Achievement Division (STAD). pembelajaran learning model

Based on the background and research focus, the researchers took the problems in this study are:

1. How are students' responses to the Process Skills indicators (Classifying, Observing, and Compiling Tables) and student responses to the Student Team Achievement Division (STAD). model for the volume of blocks and cubes?
2. How is the relationship between student process skills and the Student Team Achievement Division (STAD) learning model for the volume of blocks and cubes?.

2. METHODS

This type of research is experimental quantitative research by comparing 4 classes that use the variable Process Skills and student responses with the Student Team Achievement Division (STAD). model for the volume of blocks and cubes. This research was conducted in 4 schools, namely 2 SD and 2 MI with 36 students in each class. So the total number of students, namely this research uses a type of comparative quantitative research. A procedure design in quantitative research in which you administer a questionnaire to a small group of people (called a sample) to identify trends in attitudes, opinions, behaviors, or characteristics of a large group of people (Creswell, 2013).

This research was conducted in 4 schools, namely 2 SD and 2 MI with 36 students in each class. So the total number of students is 144 students from SD Negeri 52/I Kilangan II, SD Negeri 63/I Simpang Karmio, MIS Nurul Ihsan, MIS Nurul Jadid. The sampling technique is purvosive sampling. Purposive sampling is a type of sampling in which a research more a less handpicks case (Stommel & Wills, 2004). The reason for taking this technique is because not all samples have criteria that match the phenomenon being studied. The most important thing in sampling should consider the analysis of the sample (Luppens et al, 1992). The samples taken consisted of 80 women and 64 men.

The research samples used in this study are as follows:

Table 1. Research Sample

SD Negeri 52/I Kilangan II	SD Negeri 63/I Simpang Karmio	MIS Nurul Ihsan	MIS Nurul Jadid
36	36	36	36

The instrument used in this study was a questionnaire distributed to 4 classes in 4 schools. The assessment instrument is one of the latest experimental field assessment instruments in the field of assessment (Caltagirone et al., 2005.; Purwanti et al., 2020). There are 47 process skills question items and 26 question items in the Student Team Achievement Division (STAD). learning model that uses a Likert 5 scale. The scale consists of 5 points for the learning model with 1 (very bad), 2 (not good), 3 (quite good), 4 (good), 5 (very good), while 4 points for process skills with 1 (very not good), 2 (not good), 3 (good), and 4 (very good). Each statement is representative of each process skill indicator and student response questionnaire with the Student Team Achievement Division (STAD). model for the volume of blocks and cubes.

The lattice of the process skills questionnaire instrument used in this study are as follows:

Table 2. Grid of Elementary and Middle School Process Skills Questionnaire Sheets on the volume of blocks and cubes

Variable	Indicator	No. Statement Items
Process Skills	Observation	1,2,3
	classify	8,9,10,11,12
	Arrange tables	25, 26, 27
Number of Statements		11

The categories of process skills used in this study are as follows:

Table 3. Category of Student Process Skills

Category Indicator Interval	Category Indicator Interval	Category INTEGRATION Indicator Interval
Very Not Good	3.0-5.3	5.0-8.8	3.0-5.3
Not Good	5.4-7.6	8.9-12.7	5.4-7.6
Good	7.7-10	12.8-16.2	7.7-10
Very Good	10.1-12.4	16.3-20.3	10.1-12.4

The description of the student response questionnaire instrument grid with the Student Team Achievement Division (STAD) model for the volume of blocks and cubes is as follows :

Table 4 . The student response questionnaire instrument grid with the Student Team Achievement Division (STAD) model for the volume of blocks and cubes

Variable	Indicator	Statement Item No.
Student responses with the Student Team Achievement Division (STAD). model for the volume of blocks and cubes	spirit in follow learning	1,2,3,4,5,6
	Media use	7,8,9,10,11,12,13
	interest in studying science	14,15,16,17,18,19,20
	easy to understand the concept and importance of science	21,22,23,24,25,26
Number of Statements		26

The description of the student response questionnaire instrument grid with the Student Team Achievement Division (STAD) model for the volume of blocks and cubes is as follows :

Table 5 . Category of student response with the Student Team Achievement Division (STAD) model for the volume of blocks and cubes

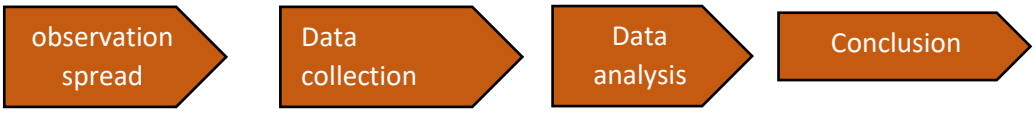
Category	Interval Indikator			
	zeal in following the lesson learned	Media use	interest in studying science	easy to understand the concept and importance of science
Sangat Tidak Baik	26,0-46,8	26,0-46,8	26,0-46,8	26,0-46,8
Tidak Baik	46,9-67,6	46,9-67,6	46,9-67,6	46,9-67,6
Cukup	67,7-88,4	67,7-88,4	67,7-88,4	67,7-88,4
Baik	88,5-109,2	88,5-109,2	88,5-109,2	88,5-109,2
Sangat baik	109,3-130	109,3-130	109,3-130	109,3-130

This study uses quantitative data analysis with the help of SPSS statistics 25, the test is used to find descriptive statistics. according to (Fuadi, 2020) Descriptive statistics discuss ways of collecting, summarizing, presenting data so that information is obtained that is easier to understand. The research method is basically a scientific way to obtain data with specific purposes and uses, one of which is to clarify various analytical processes using real calculation methods. (Suharsaputra, 2012). Next, identify the results for follow-up. At the data collection stage, questionnaires were given to 144 students at SD Negeri 52/I Kilangan II, SD Negeri 63/I Simpang Karmio, MIS Nurul Ihsan, MIS Nurul Jadid. From this data, data analysis is then carried out, namely data coding, filtering appropriate data and analyzing the data.

Research is using the data qualitatively . Then this data will be analyzed using descriptive test to find out student responses and then test assumptions starting from normality and linearity tests . If the

data being tested is normal and linear data, then it ends with a hypothesis test to see if there is a significant relationship and comparison by conducting a correlation test . Picture or representation of data in a number of large which includes the mean, median, max and min is statistically descriptive (Pramesti et al., 2018; Santoso et al., 2019; Wahyuni. 2020). There is also the procedure for collecting data for this research in accordance with the following diagram

Fig 1. Research Procedure



3. FINDINGS AND DISCUSSION

a. Descriptive Statistics Test

The description of the process skills of SD/MI students on the material volume of blocks and cubes on the Observation indicator

Table 6. Description of the process skills of SD/MI students on the volume of blocks and cubes on the Observation indicator

Student Response	interval	F	Percentage	Category	mean	median	Min	Max
SD Negeri 52/I Kilangan II	3.0-5. 25	5	13.9 %	Very not good	2, 5313	4	1	2
	5. 26 -7. 50	6	16.7 %	Not good				
	7. 51 - 9.75	14	38.9 %	Good				
	9.76-12.00	11	30.6 %	Very good				
SD N egeri 63 / I Simpang Karmio	3.0-5. 25	3	11.1%	Very not good	2, 7632	3	1	4
	5. 26 -7. 50	6	16.7 %	Not good				
	7. 51 - 9.75	14	38.9 %	Good				
	9.76-12.00	1 3	33.4%	Very good				
MI S Nurul Ihsan	3.0-5. 25	8	22.2 %	Very not good	2, 2443	5	2	3
	5. 26 -7. 50	6	19.4%	Not good				
	7. 51 - 9.75	14	36.1 %	Good				
	9.76-12.00	8	22.2%	Very good				
MIS Nurul Jadid	3.0-5. 25	5	13.9 %	Very not good	2, 5322	3	1	5
	5. 26 -7. 50	6	16.7 %	Not good				
	7. 51 - 9.75	1 2	3 6.1%	Good				
	9.76-12.00	1 3	3 3.4%	Very good				

Based on the table, the process skills of SD/MI students with observation indicators showed that the average response of students was in the good category with the percentage for SD N 52 38.9% good, SD N 63 38.9% good, MIS NI 36.1% good, MIS NJ 36.1% good.

The description of the process skills of SD/MI students on the material volume of blocks and cubes on the Classification indicator .

Table 7. Description of the process skills of SD/MI students on the volume of blocks and cubes on the Classification indicator

Student Response	interval	F	Percentage	Category	mean	median	Min	Max
SD Negeri 52/I Kilangan II	5.0.-8. 75	10	27.8 %	Very not good	2.8056	3	1	4
	8. 76 -12. 5	9	2 5.0%	Not good				
	12. 6 -16. 25	1 2	3 0.5%	Good				
	16. 26, - 20 ,0	5	1 6.7%	Very good				
SD Negeri 63 / I Simpang Karmio	5.0.-8. 75	5	13.9 %	Very not good	2,5278	3	1	4
	8. 76 -12. 5	6	16.7 %	Not good				

	12. 6 -16. 25	1 6	41.7%	Good				
	16. 26, -	9	27.8%					
	20 ,0			Very good				
	5.0.-8. 75	4	11.1 %	Very not good				
	8. 76 -12. 5	7	19.4 %	Not good				
MI S Nurul Ihsan	12. 6 -16. 25	17	47.2 %	Good	3, 3611	3	1	4
	16. 26, -	8	22.2 %					
	20 ,0			Very good				
	5.0.-8. 75	8	22.2 %	Very not good				
	8. 76 -12. 5	8	22.2 %	Not good				
MIS Nurul Jadid	12. 6 -16. 25	13	36.1 %	Good	2,5278	3	1	4
	16. 26, -	7	19.4 %					
	20 ,0			Very good				

Based on the table, the process skills of SD/MI students with measuring indicators found that the average number of students chose the good category with the percentage for SD N 52 30.5% good, SD N 63 41.7% good, MIS NI 47.2% good, MIS NJ 36.1% good.

The description of the process skills of SD/MI students on the material volume of blocks and cubes on indicators compose a table

Table 8. Description of SD/MI students' process skills on the volume of blocks and cubes on indicators Compiling a table

Student Response	interval	F	Percentage	Category	mean	median	Min	Max
	3.0-5. 25	10	27.8 %	Very not good				
SD Negeri	5. 26 -7. 50	9	2 5.0%	Not good	2.8056	3	2	3
52/I Kilangan II	7. 51 - 9.75	1 2	3 0.5%	Good				
	9.76-12.00	5	1 6.7%	Very good				
	3.0-5. 25	5	13.9 %	Very not good				
SD N egeri 63 /	5. 26 -7. 50	6	16.7 %	Not good	2,5278	2	1	4
I Simpang Karmio	7. 51 - 9.75	1 6	41.7%	Good				
	9.76-12.00	9	27.8%	Very good				
	3.0-5. 25	4	11.1 %	Very not good				
MIS Nurul Ihsan	5. 26 -7. 50	7	19.4 %	Not good	2.3611	4	2	2
	7. 51 - 9.75	17	47.2 %	Good				
	9.76-12.00	8	22.2 %	Very good				
	3.0-5. 25	8	22.2 %	Very not good				
MIS Nurul Jadid	5. 26 -7. 50	8	22.2 %	Not good	2,5278	3	1	4
	7. 51 - 9.75	13	36.1 %	Good				
	9.76-12.00	7	19.4 %	Very good				

Based on the table, the process skills of SD/MI students with indicators in compiling tables, it was found that the average number of students chose the good category with the percentage for SD N 52 38.9% good, SD N 63 38.9% good, MIS NI 36.1% good, MIS NJ 36.1% good.

The description of model of learning Student Team Achievement Division (STAD) against the material volume beams and cubes

Table 9. Description of student responses to the Student Team Achievement Division (STAD) learning model for the volume of blocks and cubes

ResponseStudent	interval	F	Percentage	Category	mean	median	Min	Max
SD Negeri 52/I Kilangan II	26.0-46.8	0	0%	Not very good	27,639	3	2	4
	46.9-67.6	18	25%	Not good				
	67.7-88.4	53	73.6%	Enough				

	88.5-109.2	1	1.45%	Good				
	109.3-130	0	0%	Very good				
	26.0-46.8	0	0%	Not very good				
SD Negeri 63/I Simpang Karmio	46.9-67.6	28	38.9%	Not good	26,111	3	2	3
	67.7-88.4	44	61.6%	Enough				
	88.5-109.2	0	0%	Good				
	109.3-130	0	0%	Very good				
	26.0-46.8	0	0%	Very bad				
	46.9-67.6	39	54.2%	Not good				
MIS Nurul Ihsan	67.7-88.4	33	45.8%	Enough	24,583	2	2	3
	88.5-109.2	0	0%	Good				
	109.3-130	0	0%	Very good				
	26.0-46.8	0	0%	Not very good				
	46.9-67.6	39	54.2%	Not good				
MIS Nurul Jadid	67.7-88.4	31	43.1%	Enough	24,861	2	2	4
	88.5-109.2	2	2.8%	Good				
	109.3-130	0	0%	Very good				

According to the table, description Model learning Student Team Achievement Division (STAD) against the material volume beams and cubes found that the average student many choose simply by percentage for SD N 52 73.6% enough, SD N 63 61.6% Enough, enough 45% NI MIS, MIS NJ 43.1% good.

b. Assumption Test

In the assumption test, normality and linearity tests are used, while the results of the assumption test are as follows.

Normality Test

Normality test is a test used to see whether the data is normally distributed , if the significance value is > 0.05 then the data is normally distributed, if the significance value is < 0.05 then the data is not normal . The results of the normality test are shown in the following table :

The test of the normality of process skills of students SD / MI students' responses with Student Team Achievement Division (STAD) model material volume of beams and cubes in the expose as in the table below :

Table 10 . Normality test of elementary/MI students' process skills on student responses using the Student Team Achievement Division (STAD) model for the volume of blocks and cubes

School Name	N	Statistics	Sig.
SD Negeri 52/I Kilangan II	3 6	0, 854	0, 213
SD Negeri 63/I Simpang Karmio	3 6	0, 798	0, 452
MI S Nurul Ihsan	3 6	0, 843	0, 235
MIS Nurul Jidad	3 6	0.9 33	0, 563

Based on the results of the table , in the obtained test for normality with Kolmogorov- smoniv test the value of significance > of 0:05, then it can be concluded the data distribution is normal

Linierity test

Linearity test is done in order to see the linear relationship between two or more variables . Conditions in this test , if the significance value > 0.05.

The test lineartitas process skills of students in SD / MI students' responses with Student Team Achievement Division (STAD) model material volume of beams and cubes in the expose as in the table below :

Table 11 . Linearity test of elementary/MI students' process skills on student responses using the Student Team Achievement Division (STAD) model for the volume of blocks and cubes

School Level	School	N	F	Sig.
SD	SD Negeri 52/I Kilangan II	3 6	1, 632	0, 335
	SD Negeri 63/I Simpang Karmio	3 6		
MI	MI S Nurul Ihsan	3 6	1, 352	0, 134
	MIS Nurul Jidad	3 6		

Based on the table is obtained, the results of the test linearity which get is the value of the significance of 0. 335 to 0.134 for SD and MI has meet the requirements > 0.05, it can be concluded there is a relationship that is linear between process skills of elementary school students and students of MI on student responses to the model Student Team Achievement Division (STAD) material volume of blocks and cubes.

c. Hypothesis Test

Correlation Test

In testing this is done in order to determine the relationship variables on material fractional multiplication. Terms of the test is if the value of the significance of > 0.05 then it can be said that the variables are not coined relationship. If the value of the significance of <0.05 then the variables that have a relationship that is significant. The results were obtained are shown in the table.

The test kore l ation Skills Process elementary school students and students of MI in the expose as in the table below :

Table 13 . Process Skills Correlation Test for Elementary School Students and MI students

School Level	N	Pearson Correlation	Sig. (2-tailed)
SD * MI	14 4	0, 632	0.0 42

Based on the results of correlation can be ter see that there is a relationship between process skills of elementary school students and students of MI. This is evidenced by the value of sig (2-tailed) < 0.05.

DISCUSSION

In this study, researchers used a test statistics descriptive, Statistics Descriptive are methods that relate to the collection and presentation of a Data that provide information that is useful and easy to understand. P enelitian this is the study of quantitative experiments by comparing the four classes that use variable Process Skills and models Student Team Achievement Division (STAD) with the material volume of beams and cubes. In this study, researchers used the variable process skills with indicators of Observation, Classification and compiling tables. In the Observation indicator, it was found that the presentation of students' process skills on the material volume of blocks and cubes in all dominant classes was in the good category with the percentage for SD N 52 38.9% good, SD N 63 38.9% good, MIS NI 36.1% good, MIS NJ 36.1%.

The classification indicator found that the presentation of students' process skills on the volume of blocks and cubes in all dominant classes was in the good category with the percentage for SD N 52 30.5% good, SD N 63 41.7% good, MIS NI 47.2% good, MIS NJ 36.1% good . And for the indicators of compiling tables, it was found that the presentation of students' process skills on the material volume of blocks and cubes in all dominant classes was in the good category with the percentage for SD N 52 38.9% good, SD N 63 38.9% good, MIS NI 36.1% good, MIS NJ 36.1% good. In descriptive test model of Student Team Achievement Division (STAD) with the material volume of beams and cubes found results that According to the table, description Model learning Student Team Achievement Division (STAD) against the material volume beams and cubes found that the average student many choose

simply by percentage for SD N 52 73.6% enough, SD N 63 61.6% Adequate, MIS NI 45% adequate, MIS NJ 43.1% good.

On the assumption test researchers used a test for normality and test Linearity, on the normality test process skills with material volume of beams and cubes in the obtained test for normality with Kolmogorov- smoniv test the value of significance > of 0:05, then it can be concluded the data distribution is normal. Based on the table obtained, the results of the linearity test obtained are a significance value of 0.335 for SD and 0.134 for MI which has met the requirements > 0.05, so it can be concluded that there is a linear relationship between the process skills of elementary school students and MI students on the volume of blocks and cubes.In the hypothesis test the researcher uses the correllation test, final results of correlation can be ter see that there is a relationship between process skills of elementary school students and students of MI . This is evidenced by the value of sig (2-tailed) < 0.05.

This research is in line with research (Mahmud, 2017; Siswono, 2017; Gasila et al., 2019; Halimah et al., 2019) that the implementation of Student Team Achievement Division (STAD) type cooperative learning has an effect on successful process skills that will increase student activity and understanding . However, there are some differences and updates, as in previous research it did not discuss more specifically about the indicators used in process skills as used in this study, the indicators used were Observation, classification and compiling tables and the material used in this study was volume material. blocks and cubes learned with the Student Team Achievement Division (STAD) learning model.

The research conducted by the researcher is about the process skills and student responses using the Student Team Achievement Division (STAD) model for the volume of blocks and cubes. In this study, the researcher uses the variable Process Skills with the indicators of Observation, Classification and compiling tables, so this can be a basis and reference in conducting research to further examine the process skills and Student Team Achievement Division (STAD) model with the volume of blocks and cubes. In this study, 3 indicators are used, 3 indicators of process skills and general indicators are used for Student Team Achievement Division (STAD). Because if students have a positive interest in process skills and the Student Team Achievement Division (STAD) model with block and cube volume material, it is expected that learning outcomes will improve. This research can also help students to understand students' problems in Process Skills, Student Team Achievement Division (STAD) or the volume of blocks and cubes in several educational development courses.

The researcher is very aware that there are many shortcomings in this study, because the researcher only conducted research on process skills and student responses using the Student Team Achievement Division (STAD) model for the volume of blocks and cubes. Using 3 indicators of process skills and For the Student Team Achievement Division (STAD) learning model used general indicators, in 4 classes from 4 schools. It is hoped that further research can be carried out with different variables, indicators, learning models or classes

4. CONCLUSION

Based on the results of testing hypotheses and analysis of data, then the conclusion of the study is the variable process skills and the students' response to the learning model Student Team Achievement Division (STAD) material volume of beams and cubes. Research is conducted in four schools namely 2 SD and 2 MI with each class numbered 3 6 students. So that students overall total is 144 students of the school SDN 52 / I Kilangan II, SD Negeri 63 / I Simpang Karmio, MIS Nurul Ehsan, MIS Nurul Jadid. Based on the correlation test, it was concluded that there was a relationship between students' process skills on student responses with the Student Team Achievement Division (STAD) learning model for the inter-school volume of blocks and cubes. the students in the school SDN 52 / I Kilangan II, SD Negeri 63 / I Simpang Karmio, MIS Nurul Ehsan, MIS Nurul Jadid. then the author gives advice that is on the implementation of the model of learning cooperative of type Student Team Achievement Division (STAD) as an effort to improve the skills Process.

REFERENCES

Abbas, A., & Yusuf Hidayat, M. (2018). Faktor-Faktor Kesulitan Belajar Fisika Pada Peserta Didik Kelas Ipa Sekolah Menengah Atas. JPF (Jurnal Pendidikan Fisika) Universitas Islam Negeri Alauddin Makassar. https://doi.org/10.24252/jpf.v6i1a8

Anugrah, D., Murwitaningsih, S., Sofyan, D. A., & Susilo, S. (2020). Model pembelajaran kreatif treffinger terhadap kemampuan memecahkan masalah pada materi ekosistem dan perubahan lingkungan. JPBIO (Jurnal Pendidikan Biologi). https://doi.org/10.31932/jpbio.v5i1.601

Anugraheni, I. (2018). Meta Analisis Model Pembelajaran Problem Based Learning dalam Meningkatkan Keterampilan Berpikir Kritis di Sekolah Dasar [A Meta-analysis of Problem-Based Learning Models in Increasing Critical Thinking Skills in Elementary Schools]. Polyglot: Jurnal Ilmiah. https://doi.org/10.19166/pji.v14i1.789

Arifah, R. E. N., Sukirman, S., & Sujalwo, S. (2019). Pengembangan Game Edukasi Bilomatika untuk Meningkatkan Hasil Belajar Siswa pada Mata Pelajaran Matematika Kelas 1 SD. Jurnal Teknologi Informasi Dan Ilmu Komputer, 6(6), 617. https://doi.org/10.25126/jtiik.2019661310

Asmi, S., & Hasan, M. (2017). PENERAPAN MODEL PEMBELAJARAN BERBASIS PROYEK. 05(01), 20–26.

Brinus, K. S. W., Makur, A. P., & Nendi, F. (2019). Pengaruh Model Pembelajaran Kontekstual terhadap Pemahaman Konsep Matematika Siswa SMP. Mosharafa: Jurnal Pendidikan Matematika. https://doi.org/10.31980/mosharafa.v8i2.439

Cahyaningrum, A. D., AD, Y., & Asyhari, A. (2019). Pengaruh Model Pembelajaran Quantum Teaching Tipe Tandur Terhadap Hasil Belajar. Indonesian Journal of Science and Mathematics Education. https://doi.org/10.24042/ijsme.v2i3.4363

Cai, S., Liu, E., Shen, Y., Liu, C., Li, S., & Shen, Y. (2020). Probability learning in mathematics using augmented reality: impact on student's learning gains and attitudes. Interactive Learning Environments, 28(5), 560–573. https://doi.org/10.1080/10494820.2019.1696839

Caltagirone, C., Razzano, C., & Lucia, F. S. (n.d.). M E T O D O L O G I E R I A B I L I TAT I V E I N L O G O P E D I A • V O L .

Campbell, C., Pollock, K., Briscoe, P., & Carr-harris, S. (2017). Developing a knowledge network for applied education research to mobilise evidence in and for educational practice. Educational Research, 59(2), 209–227. https://doi.org/10.1080/00131881.2017.1310364

Das, K. (2019). Role of ICT for better Mathematics Teaching. Shanlax International Journal of Education, 7(4), 19–28. https://doi.org/10.34293/education.v7i4.641

Dian, K., & Sri, J. (2017). Pengembangan Perangkat Pembelajaran Matematika Model 4D Untuk Kelas Inklusi Sebagai Upaya Meningkatkan Minat Belajar Siswa. Jurnal MAJU, Volume 4 No. 1,Maret 2017 ISSN: 2355-3782.

Fuadi, A. S. M. M. (2020). PENERAPAN MODEL PEMBELAJARAN PROBLEM BASED LEARNING (PBL) PADA MASA PANDEMI COVID 19 DALAM MENINGKATKAN AKTIVITAS DAN HASIL BELAJAR SISWA PADA MATA PELAJARAN PRODUK KREATIF DAN KEWIRAUSAHAAN Ahmad. Buku Seminar.

Gasila, Y., Fadillah, S., & Wahyudi. (2019). Analisis Keterampilan Proses Sains Siswa Dalam MENYELESAIKAN SOAL IPA DI SMP NEGERI KOTA PONTIANAK. Jurnal Inovasi Dan Pembelajaran Fisika (JIPF).

Gunawan, Harjono, A., Hermansyah, & Herayanti, L. (2019). Guided inquiry model through virtual laboratory to enhance students' science process skills on heat concept. Cakrawala Pendidikan. https://doi.org/10.21831/cp.v38i2.23345

Hanifah, H., Supriadi, N., & Widyastuti, R. (2019). Pengaruh Model Pembelajaran E-learning Berbantuan Media Pembelajaran Edmodo Terhadap Kemampuan Pemecahan Masalah Matematis Peserta Didik. NUMERICAL: Jurnal Matematika Dan Pendidikan Matematika. https://doi.org/10.25217/numerical.v3i1.453

Hekmah, N., Wilujeng, I., & Suryadarma, I. G. P. (2019). Web-Lembar Kerja Siswa IPA terintegrasi

lingkungan untuk meningkatkan literasi lingkungan siswa. Jurnal Inovasi Pendidikan IPA. https://doi.org/10.21831/jipi.v5i2.25402

Hidayat, W. (2017). ADVERSITY QUOTIENT DAN PENALARAN KREATIF MATEMATIS SISWA SMA DALAM PEMBELAJARAN ARGUMENT DRIVEN INQUIRY PADA MATERI TURUNAN FUNGSI. KALAMATIKA Jurnal Pendidikan Matematika. https://doi.org/10.22236/kalamatika.vol2no1.2017pp15-28

Israil, I. (2019). Implementasi Model Pembelajaran Cooperative Learning Tipe STAD untuk Meningkatkan Motivasi Belajar Siswa dalam Pembelajaran IPA di SMP Negeri 1 Kayangan. Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran. https://doi.org/10.33394/jk.v5i2.1807

Iswatun, I., Mosik, M., & Subali, B. (2017). Penerapan model pembelajaran inkuiri terbimbing untuk meningkatkan KPS dan hasil belajar siswa SMP kelas VIII. Jurnal Inovasi Pendidikan IPA. https://doi.org/10.21831/jipi.v3i2.14871

Lusidawaty, V., Fitria, Y., Miaz, Y., & Zikri, A. (2020). Pembelajaran Ipa Dengan Strategi Pembelajaran Inkuiri Untuk Meningkatkan Keterampilan Proses Sains Dan Motivasi Belajar Siswa Di Sekolah Dasar. Jurnal Basicedu, 4(1), 168–174. https://doi.org/10.31004/basicedu.v4i1.333

Mahendra, I. W. E. (2017). PROJECT BASED LEARNING BERMUATAN ETNOMATEMATIKA DALAM PEMBELAJAR MATEMATIKA. JPI (Jurnal Pendidikan Indonesia). https://doi.org/10.23887/jpi-undiksha.v6i1.9257

Mahmud, N. (2017). Meningkatkan Hasil Belajar Matematika Operasi Hitung Pecahan Pada Siswa Kelas V Sekolah Dasar Daruba 2 Kepulauan Morotai Dengan Menggunakan Model Pembelajaran Student Team Achievement Division (STAD). Pedagogik.

Mansur, H., & Rafiudin, R. (2020). Pengembangan Media Pembelajaran Infografis untuk Meningkatkan Minat Belajar Mahasiswa. Jurnal Komunikasi Pendidikan. https://doi.org/10.32585/jkp.v4i1.443

Pramesti, U. D., Pramesti, U. D., & Effendi, E. E. (2018). PENINGKATAN HASIL BELAJAR MENULIS PARAGRAF PADA MKU BAHASA INDONESIA DI UNIVERSITAS NEGERI PADANG MELALUI MODEL STAD (STUDENT TEAM-ACHIEVEMENT DIVISIONS) METODE MENULIS BERANTAI. KREDO : Jurnal Ilmiah Bahasa Dan Sastra. https://doi.org/10.24176/kredo.v2i1.2565

Prananda, G. (2019). Pengaruh Model Pembelajaran Kooperatif Tipe STAD Dalam Pembelajaran IPA Siswa Kelas V SD. Jurnal Pedagogik.

Purwanti, E., Palupi, R. Z. P., Galuh, A., & Rianingsih, D. (2020). Pengembangan Instrumen Penilaian Keterampilan Abad 21.

Quay, J. (2016). Not ' democratic education ' but ' democracy and education ': Reconsidering Dewey ' s oft misunderstood introduction to the philosophy of education Not ' democratic education ' but ' democracy and education ': Reconsidering Dewey ' s oft misunderstood int. 1857(May). https://doi.org/10.1080/00131857.2016.1174098

Rosidin, U., Kadaritna, N., & Hasnunidah, N. (2019). Can argument-driven inquiry models have impact on critical thinking skills for students with differentpersonality types? Cakrawala Pendidikan. https://doi.org/10.21831/cp.v38i3.24725

Rulyansah, A., Wardana, L. A., & Uswatun, H. I. (2019). Pengembangan Media Pembelajaran Pop Up Dengan Menggunakan Model Stad Dalam Meningkatkan Hasil Belajar Siswa. Jurnal Pedagogy.

Safitri, A., Surya, E., Syahputra, E., & Simbolon, M. (2017). Impact of Indonesian Realistic Mathematics Approach to Students Mathematic Disposition on Chapter Two Composition Function and Invers Fungtion in Grade XI IA-1 SMA Negeri 4 Padangsidimpuan. International Journal of Novel Research in Education and Learning, 4(2), 93–100.

Sakdiah, S., Mursal, M., & Syukri, M. (2018). Penerapan Model Inkuiri Terbimbing Untuk Meningkatkan Pemahaman Konsep dan Kps Pada Materi Listrik Dinamis Siswa SMP. Jurnal IPA & Pembelajaran IPA. https://doi.org/10.24815/jipi.v2i1.10727

Santoso, E. B., Yong, S. de, & Kayogi, D. T. (2019). Perancangan Interior Café untuk Meningkatkan

Interaksi Sosial di Surabaya. Intra.

Septian, A., Agustina, D., & Maghfirah, D. (2020). Model Pembelajaran Kooperatif Tipe Student Teams Achievement Division (STAD) untuk Meningkatkan Pemahaman Konsep Matematika. MATHEMA: JURNAL PENDIDIKAN MATEMATIKA. https://doi.org/10.33365/jm.v2i2.652

Sholihat, F. N., Samsudin, A., & Nugraha, M. G. (2017). Identifikasi Miskonsepsi dan Penyebab Miskonsepsi Siswa Menggunakan Four-Tier Diagnostic Test Pada Sub-Materi Fluida Dinamik: Azas Kontinuitas. Jurnal Penelitian & Pengembangan Pendidikan Fisika. https://doi.org/10.21009/1.03208

Siswono, H. (2017). Analisis Pengaruh Keterampilan Proses Sains Terhadap Penguasaan Konsep Fisika Siswa. Momentum: Physics Education Journal. https://doi.org/10.21067/mpej.v1i2.1967

Slavin, R. E. (2005). Cooperative Learning: Teori, Riset dan Praktik. In International Encyclopedia of Education.

Stender, A., Schwichow, M., Zimmerman, C., & Härtig, H. (2018). Making inquiry-based science learning visible: the influence of CVS and cognitive skills on content knowledge learning in guided inquiry. International Journal of Science Education, 40(15), 1812–1831. https://doi.org/10.1080/09500693.2018.1504346

Suharsaputra, U. (2012). Metode Penelitian Kuantitatif, Kualitatif, dan Tindakan.

Susilawati, A., Hernani, H., & Sinaga, P. (2017). THE APPLICATION OF PROJECT-BASED LEARNING USING MIND MAPS TO IMPROVE STUDENTS' ENVIRONMENTAL ATTITUDES TOWARDS WASTE MANAGEMENT IN JUNIOR HIGH SCHOOLS. International Journal of Education. https://doi.org/10.17509/ije.v9i2.5466

van den Heuvel, R. J. F., Lexis, M. A. S., & de Witte, L. P. (2020). ZORA Robot Based Interventions to Achieve Therapeutic and Educational Goals in Children with Severe Physical Disabilities. International Journal of Social Robotics. https://doi.org/10.1007/s12369-019-00578-z

Vansteensel, M. J., Kristo, G., Aarnoutse, E. J., & Ramsey, N. F. (2017). The brain-computer interface researcher's questionnaire: from research to application. Brain-Computer Interfaces, 4(4), 236–247. https://doi.org/10.1080/2326263X.2017.1366237

Vartiainen, J., & Kumpulainen, K. (2020). Playing with science: manifestation of scientific play in early science inquiry. European Early Childhood Education Research Journal, 28(4), 490–503. https://doi.org/10.1080/1350293X.2020.1783924

Widiana, I. W., Jampel, I. N., & Prawini, I. G. A. P. (2018). THE EFFECTIVENESS OF COMMUNICATION LEARNING ACTIVITIES BASED ON TRADISIONAL GAME TOWARD THE COGNITIVE PROCESS DIMENSION. Jurnal Cakrawala Pendidikan. https://doi.org/10.21831/cp.v37i2.14091

Widiansyah, A. (2019). Pengendalian Mutu: Implementasi Manajemen Sumber Daya Manusia, Optimalisasi Fungsi Pengendalian Dalam Dunia Pendidikan. Cakrawala - Jurnal Humaniora.

Widiansyah, Apriyanti. (2018). Peranan Sumber Daya Pendidikan sebagai Faktor Penentu dalam Manajemen Sistem Pendidikan. Manajemen Sistem Pendidikan. Cakrawala.

Yusri, A. Y. (2018). Penerapan Pendekatan Keterampilan Proses Dalam Pembelajaran Matematika Terhadap Kemampuan Pemecahan Masalah Pada Peserta Didik Kelas Viii Smp Ddi Sibatua Pangkajene. Mosharafa: Jurnal Pendidikan Matematika, 6(3), 407–418. https://doi.org/10.31980/mosharafa.v6i3.329