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Using the Snowball Throwing Cooperative Learning Model to Improve Motivation and Thematic Learning Outcomes

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Abstract

The Snowball Throwing type of cooperative learning model is expected to make students active, feel happy and work together so that problems can be solved easily and correctly. In Snowball Throwing students develop their knowledge through the act of explaining the material to their friends who do not understand. Meanwhile, students who do not understand the material can be more familiar with the explanations given by their friends. This is in accordance with the main idea of learning motivation, namely learning motivation is everything that can motivate students to learn. So that each individual gets the benefits and learning outcomes of this group. The purpose of this study was to determine the effect of using the Snowball Throwing learning model on increasing motivation and thematic learning outcomes in fifth grade students of SD Harapan Indonesia. The results showed that there was an effect of the Snowball Throwing type cooperative learning model on increasing motivation and learning outcomes of thematic subjects in fifth grade students of SD Harapan Indonesia.

Keywords: Motivation, Learning Outcomes, Snowball Throwing Cooperative Learning Model

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INTRODUCTION

In the current information age, knowledge is very important because it is a resource needed to create human resources who have high skills and the principles adopted are also related to the application of knowledge in technology (Marpaung, 2021). Success in the teaching and learning process is influenced by many things, including the teacher as a facilitator and motivator, the facilities and infrastructure used, and also the interests of the students themselves (Esi et al., 2016). The teacher's role as a motivator is to motivate students so that they carry out learning activities of their own accord in accordance with the learning objectives set out in the curriculum. The teacher's role as a facilitator is to facilitate students to learn by utilizing their potential. Ways that teachers can do to facilitate students include creating a conducive learning environment and providing guidance during learning activities (Halim, 2019).

Improving learning outcomes can be done by motivating students both from within students and from outside students (Emda, 2017). One way to increase motivation is to use varied learning methods with the aim of stimulating students to be active and enthusiastic in the learning process, for example using cooperative learning methods (Hotimah, 2020). Cooperative learning has various types such as: jigsaw, team game tournaments, head numbers together, throwing snowballs, and so on (Kurniawati, 2016).

From these problems the idea emerged from researchers that a teacher needs to determine the right learning method in order to achieve the expected goals. The right learning method means a learning method that can actively involve students in learning, collaborate with fellow students in structured tasks and interact actively, and effectively through a learning model called cooperative (Firdaus, 2018).

The use of cooperative learning models in schools has advantages and disadvantages. These advantages are oriented towards optimal learning activities so that learning objectives can be achieved effectively through the support of teachers and students in learning (Abdullah, 2017). In addition to the advantages, the cooperative learning model also has weaknesses. According to Lie (2010), many teachers only divide students into several groups then give assignments to students and then are asked to complete them without guidance on how to complete the task (Kiranawati, 2021). As a result, students feel left alone and students feel confused because there are no guidelines in completing assignments. In addition, the cooperative learning model demands the teacher's ability to apply the cooperative learning model by supervising the cooperative learning process carried out by students. The professionalism of the teacher in using the learning model greatly determines the students' awareness to participate in learning through group strategies.

The researcher chose the Snowball Throwing type of cooperative learning model to be applied in learning mathematics on the material of flat side space. Snowball throwing is a learning method that begins with the formation of groups, which are represented by the group leader to get assignments from the teacher then each student makes a question that is shaped like a ball (question paper) then thrown to other students, each student answers questions from the ball. obtained (Kisworo, 2008), and the final assessment in the form of a written test. Throwing here means exchanging papers containing questions that have been made by students to other students to be solved.

The hypothesis in this study, the researcher formulated, "Is there a significant influence and impact as well as a relationship between the Cooperative Learning Model and the Snowball Throwing Method that can increase Motivation and Thematic Learning Outcomes. Therefore, researchers develop methods and processes that will be carried out from various instruments along with results and discussions that will be delivered by researchers.

RESEARCH METHODS

The time of the research was carried out in March 2021. This time is considered suitable for researchers to conduct research because it is the most effective time for researchers to conduct research. In addition, the school has just held a Final Semester Examination so that the data obtained reflects the current situation. The location of this research was carried out at the Harapan Indonesia Private Elementary School in Bekasi.

The approach used in this research is a quantitative approach. Quantitative

research can be interpreted as a research method based on research on a particular population or sample, sampling techniques are generally carried out randomly, data collection using research instruments, quantitative or statistical data analysis with the aim of testing predetermined hypotheses. This research was conducted by collecting data in the form of numbers, or data in the form of words or sentences that were converted into data in the form of numbers.

The type of research used in this study is a quasi-experimental design or quasi-experimental in the form of a nonequivalent posttest-only control group design (Setia, 2014). There are two groups in this design, the first group uses the Snowball Throwing learning model as the experimental class, while the second group uses the conventional learning method as the control class. At the end of the teaching and learning process, both groups were measured using the same measuring instrument, namely a post test to measure student learning outcomes and a questionnaire to determine the level of student motivation.

Research variable is an attribute or nature or value of a person, object or activity that has a certain variation determined by the researcher to be studied and then drawn conclusions. The variables in this study, 1) Independent variables or independent variables are variables that affect or cause changes or emergence of the dependent variable. The independent variable in this study is the Snowball Throwing Learning Model. 2) Dependent Variables or Bound Variables are variables that are influenced or which are the result, due to the existence of independent variables. In this study, the dependent variable is the motivation and learning outcomes of Weather Thematic 5 in third grade students of SD Harapan Indonesia.

The population is all the objects under study, whether in the form of people, objects, events or things that happen. Population is not just the number that exists in the object or subject under study, but includes all the characteristics or properties possessed by the object or subject. The population in this study was the third grade students of SD Harapan Indonesia, totaling 32 students consisting of grades III-A, III-B.

Sampling is a sampling technique that will be used in research. The sampling method is a discussion of how to take or take samples to become a representative sample. This research uses purposive sampling. In purposive sampling the selection of groups is based on the characteristics or characteristics of the population that have been known previously. In experimental research, the writer took purposive sampling technique. This sample is done by taking the subject not based on strata, random or regional, but based on a specific purpose. This sampling was used because the sampling facilities from the Thematic 5 Weather Thematic teachers who teach are students in grades III-A and III-B, because they have almost the same abilities and this class psychologically supports the research.

Instrument is a tool used as a data collector in a research can be in the form of a questionnaire, so that the measurement scale of the instrument is to determine the units obtained, as well as the type of data or the level of the data, whether the data is normal, ordinal, interval or ratio. Questionnaires are a number of written questions that are used to obtain information from respondents in terms of reports about themselves or what they know. The questionnaire in this study consisted of 30 statements that were used to measure students' learning motivation. The test of student moral character learning outcomes, the test is a series of questions or exercises as well as other tools used to measure skills, intelligence, knowledge, abilities or talents possessed by individuals or groups. This research is a test in the form of Post Test (final test). This post test was carried out after students in the experimental class and control class carried out the learning of the material that

had been determined. Observation Guidelines, in this study observations were made in order to know more closely about the object under study, namely the condition of the school, school infrastructure, and the process of learning activities, especially in learning morals. Observations were carried out at Harapan Indonesia Elementary School, especially in grades III-A and III-B. From these observations, researchers can obtain data in the form of rough notes from observations or observations. Documentation guidelines were used to obtain photos, results of learning motivation questionnaires, daily test results, other documents used from Harapan Indonesia Elementary School for the purposes of this study including data on the number of third grade students.

The data is a description of the variables in a number of respondents. Quantitative data in the form of responses given by respondents that are visible and measurable. According to the method of collection, data can be divided into two, namely primary data and secondary data. Primary data is data collected directly by people who have an interest or use the data. Data obtained through interviews or questionnaires is an example of primary data. While secondary data is data that is not directly collected by people with an interest in the data. Secondary data in this study are: documents, observation notes and photos.

Source of data is information that becomes the raw material for research to be processed. Sugiyono said primary data sources are data sources that directly provide data to data collectors and secondary data sources are data sources that do not directly provide data to data collectors, for example through other people or through documents. Primary data sources were obtained from test results and student interviews, while secondary data sources were obtained from observations, recorded student interviews, interview transcripts, photos of activities, and others. In this study, the data sources used are a. Third grade students of SD Harapan Indonesia for the 2020/2021 academic year. b. Data on the results of student learning motivation and learning outcomes Thematic Theme 5 Weather. c. Data from interviews with the Thematic subject teacher Theme 5 Weather for SD Harapan Indonesia. Measurement The scale used in the measurement design is the Likert Scale. It aims to be used to measure a person's attitudes, opinions, and perceptions about social phenomena.

The data measurement scale used by the researcher is, a) The data measurement scale used for students' motivation to learn mathematics is an interval scale with a Likert scale type. b) The data measurement scale used for thematic learning outcomes of Theme 5 Weather students is in the form of a ratio scale from 0-100 values obtained from post test scores. The data generated from the distribution of interval-scaled questionnaires with a range of 1-4 alternative answers are presented.

Data collection techniques used in this study are the Test Method, Questionnaire Method, Observation Method, and Documentation Method. Where the test method has a meaning, namely the way of collecting data by giving tests to the object under study. The test value that has been given at the time of the experiment. The test used in this study is the post test. This post test will later be used to see the differences in student learning outcomes through a scientific approach and learning the thematic material Snowball Throwing on the Weather 5 Theme in class III. While the Questionnaire is a list of questions given to other people who are willing to answer according to user requests. The purpose of the questionnaire is to find complete information about a problem and the respondent without worrying about the respondent giving an answer. The questionnaire in this study was used as a tool to determine the effect of student learning motivation after being given treatment. Then, Observation is a data collection technique that is carried out by means of systematic, logical, objective and rational observation

and recording of various phenomena both in actual situations and in artificial situations to achieve certain goals. This observation was made during the learning process of aqidah morality using a scientific approach and the Snowball Throwing learning model by observing the course of learning and the attitude of each student. While Documentation is a technique used to collect data by viewing or recording reports that are already available. Documents used in research can be in the form of existing documents or documents designed during the research. Documents are written materials such as syllabus, annual program, monthly program, weekly program, lesson plans, student personal notes, report cards, score list grids, question sheets or assignment sheets, answer sheets and so on.

There are three kinds of data analysis used in this research, namely instrument test, prerequisite test and hypothesis testing. Validity is a measure that shows the levels of validity or validity of an instrument. The concept of a valid instrument/scale will ultimately determine whether the data obtained by the researcher is valid or not, it will refer to the accuracy of the measuring instrument/scale/instrument used by the researcher.

Meanwhile, to determine the validity, the researcher used expert and student validation. For expert validation, some questions are said to be feasible and some are said to be feasible with improvements. After the questions are revised and have been said to be feasible, the questions will be tested to students as attached. Student validation is done by testing the questions to 33 respondents in class V.

Reliability is to determine the extent to which the measurement results remain consistent if the measurement is carried out twice or more for the same symptoms using the same measurement tool. A research instrument is said to have a high reliability value, if the test made has consistent results in measuring what is to be measured. This means that the more reliable a test has requirements, the more we can state that the test results come back.

Furthermore, the calculation of the reliability test, the provisions are as follows: Alpha Cronbanch: 1. Cronbanch alpha value 0, 00-0, 20 = less reliable 2. Cronbanch alpha value 0, 21-0, 40 = somewhat reliable 3. Cronbanch alpha value 0, 41-0, 60 = moderately reliable 4. Cronbanch alpha value 0, 61-0, 80 = reliable. Cronbanch alpha value 0, 81-1, 00 = very reliable. In this study, the prerequisite tests used were normality and homogeneity tests. The purpose of the normality test on a series of data is to determine whether the data population is normally distributed or not. If the data is normally distributed, then parametric statistical tests can be used. Meanwhile, if it is not normally distributed, then a nonparametric statistical test is used. To calculate this normality test, researchers used SPSS 16.00 for Windows with the following criteria, 1) Sig value. or significance level of significance ( ) 0.05 then the data has a normal distribution of variance. 2) Value of Sig. or significance level of significance ( ) 0.05 then the data has a variant that is not normally distributed.

Calculation of normality test, researchers used SPSS for Windows 16. Homogeneity testing aims to determine whether the objects (three or more samples) studied have the same variance. If the object under study does not have the same variance, then the ANOVA test cannot be applied. The method used in conducting this homogeneity test is the method of the largest variance compared to the smallest variance.

RESULTS AND DISCUSSION

After all the data has been collected, the next step is to analyze the data. In this study, the researcher used a test of the instrument consisting of a validity test and a reliability test. Pre-requisite testing before using ANOVA is by testing for homogeneity and normality, and then testing the hypothesis by using the ANOVA

test. This is done to determine the effect of the Snowball Throwing learning model on learning motivation and learning outcomes.

The results of the calculation of the validity test are as follows, 1) Test questions, The data from the test results for 32 respondents are as follows,

Table 1. Test Results Test Questions

Number	Name	Post test scores	Number	Name	Post test scores
1	AH	100	1	NA	95
2	ANF	100	2	NR	90
3	ANK	85	3	NM	75
4	AADK	95	4	PTA	85
5	AFF	100	5	PU	100
6	BAA	95	6	RAA	90
7	ELA	100	7	RAS	85
8	ESD	100	8	RD	80
9	ESK	100	9	RGA	95
10	EZ	100	10	RRS	75
11	FDR	95	11	RKZ	90
12	HIS	100	12	SAR	65
13	IK	95	13	SR	95
14	LMT	100	14	WBK	80
15	MMT	100	15	WLK	100
16	MR	55	16	WR	90

Source : Data processed

The data is processed to determine the value using SPSS 16.0 for Windows. Questionnaire, in this trial, researchers used 32 respondents, where N = 32 – 2 = 30 and a significance level of 5%, the Rtable value = 0.3494. Furthermore, the data from the test results of the questionnaire was processed using SPSS 16.0 for Windows to obtain the Rcount value, as attached in the attachment. After obtaining this value, it is then compared with the value in the study. If R count < R table then the item item is invalid and if Rcount >= R table then the item item is valid. The comparison of Rcount and Rcount the results of the questionnaire test as follows,

Table 2. Questionnaire Trial Results

Number	Comparison of Rcount and Rtable	Information	Number	Comparison of Rcount and Rtable	Information
1	0,424 ≥ 0,3494	Valid	16	0,555 ≥ 0,3494	Valid
2	0,492 ≥ 0,3494	Valid	17	0,469 ≥ 0,3494	Valid
3	0,559 ≥ 0,3494	Valid	18	0,511 ≥ 0,3494	Valid
4	0,634 ≥ 0,3494	Valid	19	0,526 ≥ 0,3494	Valid
5	0,347 ≥ 0,3494	Valid	20	0,394 ≥ 0,3494	Valid
6	0,424 ≥ 0,3494	Valid	21	0,439 ≥ 0,3494	Valid
7	0,527 ≥ 0,3494	Valid	22	0,573 ≥ 0,3494	Valid
8	0,435 ≥ 0,3494	Valid	23	0,544 ≥ 0,3494	Valid
9	0,625 ≥ 0,3494	Valid	24	0,466 ≥ 0,3494	Valid
10	0,430 ≥ 0,3494	Valid	25	0,446 ≥ 0,3494	Valid
11	0,634 ≥ 0,3494	Valid	26	0,454 ≥ 0,3494	Valid
12	0,628 ≥ 0,3494	Valid	27	0,432 ≥ 0,3494	Valid
13	0,463 ≥ 0,3494	Valid	28	0,500 ≥ 0,3494	Valid
14	0,490 ≥ 0,3494	Valid	29	0,519 ≥ 0,3494	Valid
15	0,388 ≥ 0,3494	Valid	30	0,551 ≥ 0,3494	Valid

Source : Data processed

Reliability test is used to test whether the instrument used to collect data is consistent in giving relatively the same measurement results. The test uses the Cronbach alpha formula. The results of the reliability test were then compared with the values in this study, N = 32 and dk = 32 – 1 = 31 with a significance level of 5% to obtain a value of . If R count < R table then the item item is not reliable and if R count >= R table then the item item is reliable.

Table 3. Reliability Test Questions

Reliability Statistics

Cronbach's Alpha	N of Items
.446	5

Table 4. Questionnaire Reliability Test

Reliability Statistics

Cronbach's Alpha	N of Items
.890	30

From the table of reliability test results, it can be seen that the value of Cronbach's Alpha or rcount ≥ rtable, which is 0.446 ≥ 0.3440, so that the 5 test questions are declared quite reliable. From the table of the results of the questionnaire reliability test, it can be seen that the value of Cronbach's Alpha or rcount ≥ rtable, which is 0.890 ≥ 0.3440 so that the 30 questions in the questionnaire are declared reliable. The post-test value data collected were then analyzed to test the research hypotheses, but before testing the hypotheses, the research prerequisites were tested with homogeneity and normality tests.

In this study, the data collected were in the form of post-test and student learning outcomes questionnaires using the normality test technique in the data series. The goal is to find out whether the data population is normally distributed or not. If normality is met, the researcher can test the hypothesis using ANOVA. A distribution is said to be normal if the significance level is > 0.05, otherwise if the significance level is < 0.05 then a distribution is said to be abnormal. To test normality with SPSS 16.0 for windows, the Kolmogorof-Smirnov test was performed. The data used in the normality test and the results of the post-test normality test calculations that also use SPSS 16.0 are as follows:

Table 5. Post Test Score List

Number	Name	Post test scores	Number	Name	Post test scores
1	AAF	80	1	ANA	95
2	AC	95	2	ANR	90
3	AKK	95	3	MAA	95
4	ARR	95	4	MN	85
5	ASRT	95	5	MOR	85
6	DDT	100	6	MPA	90
7	ELA	70	7	MRA	85
8	ELF	70	8	MRF	80
9	FRS	90	9	MSA	95
10	FSS	85	10	MSS	85
11	FST	90	11	NA	90
12	GAA	85	12	NRA	85
13	GH	100	13	RAA	90
14	GK	100	14	RH	75

Table 6. Post Test Normality Test

One-Sample Kolmogorov-Smirnov Test

		EKSPERIMEN	KONTROL
N		22	22
Normal Parameters[a]	Mean	89.77	83.41
	Std. Deviation	9.060	11.379
Most Extreme Differences	Absolute	.173	.237
	Positive	.129	.154
	Negative	-.173	-.237
Kolmogorov-Smirnov Z		.809	1.114
Asymp. Sig. (2-tailed)		.529	.167

a. Test distribution is Normal.

Based on Table 6. above, the post-test normality test can be seen that the Asymp.Sig. (2-tailed) value in the experimental class is 0.529 and in the control class is 0.167 so that it is greater than 0.05, it can be concluded that the post-test data is declared normally distributed. . Based on Table 3.9 below, the normality test of the questionnaire can be seen that the Asymp.Sig.(2-tailed) value in the experimental class is 0.980 and in the control class is 0.776 so that it is greater than 0.05, it can be concluded that the questionnaire data is declared normally distributed. The results of the post test normality test calculations using SPSS 16.0 for windows are as follows,

Table 7. Motivation Questionnaire Normality Test

One-Sample Kolmogorov-Smirnov Test

		EKSPERIMEN	KONTROL
N		22	22
Normal Parameters[a]	Mean	98.82	92.27
	Std. Deviation	7.694	5.824
Most Extreme Differences	Absolute	.100	.141
	Positive	.073	.118
	Negative	-.100	-.141
Kolmogorov-Smirnov Z		.471	.660
Asymp. Sig. (2-tailed)		.980	.776

a. Test distribution is Normal.

Homogeneity test is used to determine whether the two samples have the same variance or not. In a study the homogeneity of variance test is very necessary before comparing two or more groups so that the differences are caused by differences in the basic data, namely 1) Significant value <0.05 then data from populations that have variance are not the same or are not homogeneous. 2) A significant value of ≥ 0.05 means that data from a population that has variance is the same or homogeneous.

The interpretation of the homogeneity test can be seen through the significant level. If the significant value ≥ 0.05 then the data is said to be homogeneous. From table 4.14, the significance value is 0.375, which means it is greater than 0.05 or 0.375 ≥ 0.05, so it can be concluded that the two classes are homogeneous. The results of calculating the class homogeneity test using SPSS16.0 for windows are as follows:

Table 8. UAS Value Homogeneity Test

Test of Homogeneity of Variances

Nilai

Levene Statistic	df1	df2	Sig.
.804	1	42	.375

CONCLUSIONS

Based on the results of research and discussion, the following conclusions can be drawn:

1. There is an effect of cooperative learning model type Snowball Throwing on learning motivation of the Thematic subjects Theme 5 Weather for third grade students of SD Harapan Indonesia Bekasi. This is based on the calculation of the ANOVA test for learning motivation F of 10,121 and has a level of Sig. 0.003 < 0.05. Because the significance <0.05, it is accepted and rejected. It can be concluded that there is a significant effect of the Snowball Throwing type cooperative learning model in increasing student motivation in the Thematic 5 Weather class III subject.

2. There is an effect of cooperative learning model type Snowball Throwing on the learning outcomes of the Thematic subjects of Theme 5 Weather for third grade students of SD Harapan Indonesia Bekasi. This is based on the calculation of the ANOVA test for F learning outcomes of 4.211 and has a level of Sig.0.046 <0.05. Because the significance <0.05, it is accepted and rejected. It can be concluded that there is a significant effect of the Snowball Throwing type cooperative learning model in improving student learning outcomes in the Thematic 5 Weather class III subject.

3. There is an effect of cooperative learning model type Snowball Throwing can increase motivation and learning outcomes of the Thematic subjects Theme 5 Weather for third grade students of SD Harapan Indonesia Bekasi. Then, for the Snowball Throwing learning model on the motivation and learning outcomes of students in the Thematic Theme 5 Weather subject, Sig. 0.012. Because the significance <0.05, it is accepted and rejected. It can be concluded that there is a significant effect of the Snowball Throwing type cooperative learning model in increasing the motivation and learning outcomes of students in the Thematic Theme 5 Weather subject.

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