Implementation of Modul Based on Snowball Throwing Model to Improve Interest of Exercise Working in Mathematical Learning for 4th Grade in SDN 19 Nan Sabaris

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Abstract. This research is motivated by the low interest of students in the training in mathematics learning in the fourth grade of SDN 19 Nan Sabaris, Padang Pariaman Regency. The purpose of this study was to look at the contribution of snowball throwing-based teaching materials to increase the interest in working on mathematics training for fourth grade students of SDN 19 Nan Sabaris. This type of research is descriptive, with a sample of all fourth grade students of SDN 19 Nan Sabaris registered in the 2018/2019 school year. The sampling technique used was purposive sampling because the available sample classes were limited. The instrument used was the observation sheet, and the results of the instrument analysis showed an increase in students' interest in doing mathematics training after the use of Snowball Throwing-based teaching materials in grade IV SDN 19 Nan Sabaris.

1. Introduction
Mathematics is a compulsory subject that needs to be well understood by every student. Learning mathematics began to be introduced to children when they began their education in kindergarten. The importance of learning mathematics can be observed in daily activities, such as buying and selling transactions. If someone does not master mathematics well, of course buying and selling transactions will not go smoothly as we can see today.

Based on observation in field, mathematics is one of the most feared subjects by students. This condition is created by the difficulty of the material taught and the habits of teachers who have not actively involved students in learning activities [1]. To increase students' interest and motivation, teachers need to pay attention to several aspects including how students' learning styles, levels of student intelligence and things that can lead to students' interest in learning [2]. The habit of teachers lecturing in learning activities is always used as the main reason why student learning outcomes are low from year to year. The simple reason that every teacher still dominates using the lecture method in learning activities is because the nature of the lecture method is practical and without requiring long preparation [3].

The application of the lecture method in the long term influences the achievement and objectives of mathematics learning in elementary school students [4]. The purpose of learning mathematics in elementary schools in general is so that students are able and skilled in using mathematics. The general competency or ability in learning mathematics in elementary school are as follows:
• Doing summary, multiplication, division operations includes mixed calculation operation and fraction.
• Determine the nature and elements of various two-dimension figure and simple three-dimension figure, including the use of angle, perimeter, area, and volume.
• Determine the nature of symmetry, congruence, and coordinate system.
• Using measurements: unit, equality between unit, and assessment measurement.
• Determine and interpret simple data, such as: the highest and the lowest size, average, mode, collect and presentation.
• Solve problems, do reasoning, and communicate the ideas mathematically.

The scope of material in learning mathematics at the elementary school includes: (1) Understanding mathematical concepts, explaining the correlation between concepts, and applying concepts or algorithms; (2) Using reasoning on patterns and traits, performing mathematical manipulations in generalization, compiling evidence, or explaining ideas and statements mathematically, (3) Solving problems that involves the ability to understand problems, designing mathematical models, finishing models, and interpreting solutions obtained; (4) communicating ideas with symbols, tables, diagrams, or others media to explain the situation or problem, (5) Having an attitude of appreciating the use of mathematics in daily life. The five learning objectives can be achieved if the design of learning designed by the teacher helps support the creation of active learning. The activity of students in learning can be observed with the high interest in working on student training especially in mathematics learning [5]. Exercise is an important process to see the extent to which students understand the material and decide the following actions that teachers need to do for next learning activities [6].

The fact that found in field showed that the students’ interest in learning mathematics was still low especially the 4th grade students in SDN 19 Nan Sabaris in Padang Pariaman regency. This was observed with several indications including: the numbers of students who were cheating during learning process, some students were often punished for being late in collecting the exercise and the low results of the student's mathematics assessment.

In increasing the interest in working on mathematics learning process for students, the teacher can design a teaching material that is a module combined with an active learning model [7]. The recommended learning model is snowball throwing, for the following reasons:
• Train students' readiness in formulating questions with sources based on the material taught and provide mutual knowledge,
• Students better understand and understand in depth about the subject matter being studied.
• Can arouse the courage of students in raising questions to other friends and teachers,
• Train students to answer questions asked by their friends,
• Stimulate students to raise questions according to the topics being discussed in the lesson,
• Students will continue to be motivated to improve their abilities [8]

The purpose of learning with the Snowball Throwing model is to train students to listen to the opinions of others, train students' creativity and imagination in making questions, and encourage students to cooperate, help each other, and be active in learning [9, 10]. The application of the snowball throwing model that is integrated in a mathematics learning module is expected to motivate 4th grade students of SDN 19 Nan Sabaris to study harder and be able to increase their interest in student training.

2. Method
This type of research is quasi-experimental involving a sample of fourth grade students of SDN 19 Nan Sabaris who were enrolled in the 2018/2019 school year. The instrument of data collection in this study is a questionnaire that aims to assess students' interest in doing mathematical exercises. The data analysis technique used is paired sample t-test based on the application spss version 16. The conclusion of this study can be drawn based on the comparison of the results of data analysis with predefined alpha values.
3. Result and Discussion
This research has been conducted on mathematics learning at the elementary school level in the even semester of the 2018/2019 academic year. The class chosen is class 4 because the material contained in class 4 matches the characteristics of the module based on the snowball throwing model that has been developed. The research data was collected by grouping the results of the questionnaire analysis before and after treatment. Before proceeding to the main analysis of the research data, a prerequisite test is conducted, namely the test for normality and homogeneity of data.

| Class Condition | Normal Parameters<sup>a</sup> | Most Extreme Differences | Kolmogorov-Smirnov Z | Asymp. Sig. (2-tailed) |
|-----------------|-----------------------------|--------------------------|----------------------|----------------------|
| Before          | 2.2381 0.88909             | 0.233 0.177 -0.233        | 1.067                | 0.205                |

<sup>a</sup> Test distribution is normal

Based on table 1, it is clear that the data before being given treatment is before the implementation of the learning module based on the snowball throwing model, the initial sample data group has been normally distributed. Conclusions regarding the normal data are taken by comparing the sig 2. Tailed values contained in table 1 with an α value of 0.05. If the value of α < sig 2. Tailed value can be concluded the data is normally distributed. Referring to table 1, the value of sig 2. Tailed is greater than α so it can be concluded that data is normally distributed.

| Class Condition | Normal Parameters<sup>a</sup> | Most Extreme Differences | Kolmogorov-Smirnov Z | Asymp. Sig. (2-tailed) |
|-----------------|-----------------------------|--------------------------|----------------------|----------------------|
| After           | 21.000 3.333 1.27802       | 0.270 0.158 -0.270       | 1.239                | 0.093                |

<sup>a</sup> Test distribution is normal

The conclusion that can be drawn based on the data in table 2 is the group of student data after being given treatment has been normally distributed. This means that both groups of data have fulfilled the requirements to continue the analysis to see the effect of using mathematical modules based on the snowball throwing model in 4th grade elementary school. The homogeneity test was then carried out using the Levene test.

| Class Condition | Normal Parameters<sup>a</sup> | Most Extreme Differences | Kolmogorov-Smirnov Z | Asymp. Sig. (2-tailed) |
|-----------------|-----------------------------|--------------------------|----------------------|----------------------|
| Levene          |                            |                          |                      |                      |
| Statistic       | 2.753                      | 1 40                     | 0.105                |

Based on table 3, it is clear that the value of sig 2 tailed is greater than 0.05, meaning that both groups of data are homogeneous. Two initial testing requirements for carrying out the analysis using a paired sample t-test have been fulfilled, then followed by a paired sample t-test.
Table 4. Test Results for Paired Sample t-test

| Paired Differences | 95% Confidence Interval of the Difference | Sig. (2-tailed) |
|--------------------|------------------------------------------|-----------------|
| Mean              | Std. Deviation | Std. Error Mean | Low | Up |                     |                 |
| 1.286             | 1.088         | 0.168           | 0.947 | 1.625 | 0.000              |                 |

Referring to table 3, the sig 2.tailed value obtained after the data analysis was performed using paired sample t-test with the help of SPSS version 16, it can be concluded that there are significance differences in students’ interest training between before and after mathematic learning module based on snowball throwing model had been implemented.

The snowball throwing module applied in mathematics learning has paid attention to the principle of learning at the elementary school level, especially learning while playing. The snowball throwing model which is the main reference for designing modules has linked the concept of learning to play activities. Students are invited to interact and communicate with each other during learning activities [11], [12]. The essence of the snowball throwing model-based learning activities is the activity of throwing papers that contain questions and made independently by each student to be able to be done by other students [13], [14].

The sequence of learning steps uses the mathematics learning module based on the snowball throwing model as follows:

1. Students follow the teacher’s instructions well while listening to important information related to learning
2. Each student is given a paper to write questions that will be tested to other students
3. After all students have finished writing questions on the agreed paper, students are asked to stand while forming the paper into a ball
4. To make the atmosphere more festive, the teacher asks students to sing one of the required songs together
5. When the whole student sings the obligatory song, the student is continually asked to pass the paper that has been made into the ball to the friend next to it
6. When the compulsory song is finished singing, each student sits in his or her own place holding the last paper that was successfully achieved
7. The teacher gives 5 minutes to work on the problem
8. After all is finished, the teacher randomly selects students to discuss the questions they have got in front of the class
9. The teacher gives rewards to students who successfully answer the questions correctly, present in front of the class and motivate students who have not managed to answer the questions correctly

The low interest in working on student training in mathematics learning is influenced by several factors, such as the design of monotonous learning and always placing the teacher as active information giver. The increasing of students’ interest and motivation in doing exercises are also influenced by the way teachers in choosing teaching materials that will be used to support the improvement of students’ understanding.

The mathematics learning module based on the snowball throwing model is one of the right combinations in stimulate students to do exercises. As has been known so far, students' motivation and interest in working on math problems in the classroom is very low. This was reflected in the preliminary observations before the research was conducted in the 4th grade of SDN 19 Nan Sabaris. To increase
the interest in working on student training, it is necessary to insert a learning model that can create collaboration cooperatively and stimulate students’ social interaction. According to the theory of social constructivist learning, low-class students tend to easily understand a material when it is involved with peers in developing their knowledge. This is the basis for implementing the mathematics learning module based on the Snowball Throwing model.

Based on the observation and research that we had been done, it can be concluded that there are several advantages that can be found in mathematics learning module based on the snowball throwing model:

1. The design that can be understood easily and the language used is appropriate for the students in elementary school.
2. All learning needs have been designed in that way so that the students will enjoy in learning process.
3. The contents have been modified according to the needs of the implementation of the snowball throwing model in learning process [7].

The implementation of the snowball throwing model-based learning module in the future is expected to not only be limited to mathematics learning, but it is hoped that it can be developed creatively both by other researchers or the teacher concerned so that it can be applied in other subjects. Modules that are designed based on snowball throwing must first be validated to fit the learning objectives so that the learning achievement will not out of the goals.

4. Conclusion
Mathematics learning is one of the important subjects that must be understood in concept and theory by every student, especially at the elementary school level. The low interest in working on student training in mathematics learning also influences how students understand the material. The results of the study showed that the application of mathematical modules based on the snowball throwing learning model was statistically tested and the theory could increase the interest in the training of fourth grade students of SDN 19 Nan Sabaris. Some important notes during the research are: the readiness of students before starting the implementation of learning using a mathematical module based on the snowball throwing model, be it initial knowledge or psychic readiness, then the application of this module really needs special attention for students with low abilities. During the study, students with low ability have difficulty in solving problems or working on the exercises.

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