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IMPROVING RESULTS LEARNING MATH STUDENT CLASS I MIS MASHEBA THROUGH MODEL GAMES TWO COLOR TP 2020/2021

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Abstract, *research is aimed to find out whether the model of game two colors can improve the outcomes of learning materials learning addition and subtraction of numbers rounded student clas I MIS Masheba . In this study , the formulation of the problem is how to apply the Two Color Game model in improving results learning materials learning addition and subtraction of numbers rounded student class I MIS Masheba Research is a research action class. Subjects in the study of this is student class I MIS Masheba and its object is the result of learning mathematics student class I MIS Masheba half odd years of teaching of 2020/2021 and the application of models of game two colors. Data collection techniques in this study are tests , observations, and documentation. Based on the analysis it can be concluded that the application of the model of game two colors can improve the results of study of students at the material operations count with competence base about doing addition and subtraction of numbers up to 20 in the student class I MIS Masheba I marked with 89.28% of students in upper grades KKM*

Keywords *: Two Color Game, Learning Outcomes, Mathematics*

I. PENDAHULUAN

Mathematics education is one of the most important lessons because mathematics has several very positive goals for the development of children's education, as quoted by Moch. Masykur and Abdul Halim Fathani who stated that "In general, the purpose of giving mathematics in schools is to prepare students to be able to face changes in life and a world that is always evolving and full of changes, through training in acting on the basis of logical, rational, and critical thinking. Also to prepare students to be able to do mathematics in everyday life, study science, technology and art (IPTEKS). While the emphasis on the general objectives of learning mathematics in schools is the arrangement of reasoning, the formation of student attitudes and skills in the application of mathematics (Moch. Masykur and Abdul Halim Fathani, 2007)

Realizing the importance of mathematics, the improvement of students' mathematics learning outcomes at every level of education needs serious attention for the success of the mathematics learning

process. Understanding in learning a mathematical material is important because to learn new material, experience of old material is needed.

Improving learning outcomes is a manifestation of the success and achievement of student mastery in teaching and learning. The Ministry of Education and Culture as quoted by Trianto (2010) states that "Each student is said to have completed learning (individual completeness) if the proportion of students' correct answers is 65%, and a class is said to have completed learning (classical completeness) if in the class there are 85% of students who have completed their study. finished studying. However, based on the provisions of the KTSP, the determination of complete learning is determined by each school, known as the minimum completeness criteria, based on three considerations, namely: the ability of each student is different: the facilities (means) of each school are different; and support each school differently"

Effective learning is a measure of the success of teachers in managing the classroom. The learning process is said to be effective if all students can be actively involved, both mentally, physically and socially. Because in the learning process the activities that stand out are the students. The quality of learning can be seen in terms of the process and in terms of results.

In terms of the process, learning is said to be successful and of good quality if all or most (75%) of students are actively involved, both physically, mentally, and socially in the learning process, in addition to showing high enthusiasm for learning, great enthusiasm for learning, and belief in learning. self. Meanwhile, in terms of results, the learning process is said to be effective if there is a positive change in behavior in all students or at least most of them (75%). Furthermore, the learning process is said to be successful and of good quality if the input is evenly distributed, produces a large and high quality output, and is in accordance with the needs, community development, and development.

Then the opinion of Kline quoted by Pitadjeng (2006) says that learning will be effective if it is done in a pleasant atmosphere. For this reason, in learning, children are given the opportunity to plan and use learning methods that they like. In teaching mathematics, teachers must understand that each student's abilities are different and not all students enjoy mathematics. In this case the teacher is required to make improvements in teaching, both methods and approaches.

Furthermore, to improve student learning outcomes, more innovative learning is also needed that encourages students to learn independently and in classroom learning. Innovation of learning models is needed, especially in producing new learning models that can produce better learning outcomes, increase efficiency and effectiveness of learning towards renewal. In order for learning to be more optimal, the learning model must be more

effective and selective in accordance with the subject matter.

Then, in teaching mathematics, teachers must understand that each student's abilities are different and not all students like mathematics. In this case the teacher is required to make improvements in teaching, both methods and approaches.

But in reality, mathematics is one of the subjects in elementary school that is considered difficult. Whereas mathematics is included in one of the basic skills that must be mastered by students in addition to reading and writing beginning. This is because students are afraid of mathematics. They regard mathematics as a difficult and complicated subject.

Based on the results of observations and interviews with class teachers as well as teachers of mathematics studies for class I MIS Masheba , specifically for learning materials for addition and subtraction of integers, it can be concluded that the learning outcomes of mathematics are still low. This can be seen from the number of students who have not reached the KKM that has been set by the school, namely the number 72 for individual completeness and 75% for classical completeness.

Looking at the comparison between ideal conditions and real conditions in the field, it can be seen that there is a gap between the two. From the data above, it can be seen that the percentage of students' learning completeness (learning outcomes) and student activity is still far from the expected reality. In addition to the results and student activities that have not been adequate, the gap can also be seen from the fact that the efforts of teachers in overcoming these problems have not meant anything

Seeing the gap as mentioned above, it is necessary to anticipate by looking for alternative solutions that can help teachers and students to make changes and improvements in an effort to improve student learning outcomes in accordance with the expected learning objectives. If this is allowed then the learning objectives will forever not be achieved and learning outcomes will be lower, one effective effort is to take a class action, in order to improve student learning outcomes and the teaching and learning process.

The form of classroom action that researchers offer here is the Two-Color Game Model. According to Pitadjeng, in general, learning about integer operations is given in an abstract way, where children are only given an explanation that subtraction with negative numbers equals (becomes) addition (eg 3-(-4) = 3 + 4 = 7), and so on. While the basis or the reason the child does not understand. This causes the child to have difficulty solving problems related to integer operations. Therefore we need an appropriate and fun learning strategy so that children can learn the topic of integers efficiently. One of the right strategies is the game approach (Pitadjeng, 2006: 129).

Later in the same book, Pitadjeng (2006: 129) mentions several alternative games that can be used in studying the topic of integers, one of which is the Two Color

Game. As mentioned that the function of the Two Color Game is "a game activity used to help children understand addition and subtraction of integers". This game activity will help teachers understand the concept of adding and subtracting integers in the form of games, so that children will not feel burdened in the learning process, because they will feel like they are just playing, even though they are doing the learning process.

Playing is one of the fun things for children, including students in elementary school, because the world of children cannot be separated from games. According to Monks, children and games are two meanings that can hardly be separated from each other. This means that children cannot be separated from the game. For children, playing is a necessity that cannot be abandoned.

The two-color game model is one form of interactive game, while the interactive game can provide optimal learning outcomes for learning, as stated by Pitajeng (2006: 129) that "Interactive games are games that are packaged in learning, so that students be active and happy in learning. Therefore, if the teacher can package games as a medium and approach in learning mathematics, then children will be happy to learn mathematics so that it is effective and gets optimal learning outcomes.

The formulation of the problem that can be formulated in this research is how to apply the Two Color Game model in improving learning outcomes of learning materials for addition and subtraction of integers for class I MIS Masheba students .

Based on the formulation of the problem, the purpose of this study was to determine whether the Two Color Game model could improve learning outcomes of learning materials for addition and subtraction of integers for class I MIS Masheba students .

According to Sudjana (2011), Learning Outcomes are abilities possessed by students after they receive their learning experiences. Learning outcomes are the acquisition of student learning processes in accordance with teaching objectives. Teaching objectives become potential learning outcomes that will be achieved by children through their learning activities (Purwanto, 2011)

Learning outcomes provide an overview of students' abilities in the level of understanding of the subject matter, so that learning outcomes are an important factor in education, in general learning outcomes are always seen as

Learning outcomes are the level of mastery achieved by students in following a predetermined learning program. According to Nana Sudjana (2011), learning outcomes are abilities possessed by students after they receive their learning experiences

Furthermore, according to Dimyati and Mujiono (2010) said that learning outcomes are the result of an interaction of act of learning and act of teaching. From the teacher's point of view, the act of teaching ends with a learning evaluation

process. From the student's perspective, learning outcomes are the end of the limit and the peak of the learning process. Learning outcomes, in part, are thanks to the teacher's actions, an achievement or (process, method, act of achieving) teaching goals. On the other hand is an increase in students' mental abilities. The learning outcomes are divided into teaching impact and accompaniment impact. The impact of teaching is measurable results, as stated in the report cards and the accompanying impact is the application of knowledge and skills in other fields, a transfer of learning.

In achieving the desired learning outcomes of course there are factors that influence the achievement. Slameto suggested that the factors that influence learning are of many kinds, but can be classified into only two groups, namely internal factors and external factors. Internal factors are factors that exist within the individual who is learning. Included in the internal factors such as, physical factors, psychological factors, and fatigue factors. While external factors that affect learning can be grouped into three factors, namely, family factors, school factors (organizations), and community factors (Slameto , 2013)

The same thing was also stated by Surya (2001) that the factors that influence the learning process can be within the students themselves (internal factors), and can also be outside themselves (external factors).

Muhibbin Syah (2007) also added that the good or bad of a teaching and learning process and the level of achievement of the results of the instructional process generally depend on the following factors: 1). Characteristics of students: 2) characteristics of teachers: 3) interactions and methods: 4) characteristics of groups: 5) physical facilities: 6) subjects: and 7) the surrounding natural environment.

Noehi Nasution and friends as quoted by Syaiful Bahri Djamarah (2002) said that learning is not an activity that stands alone. They conclude that there are other elements that are directly involved in it, namely raw input is material for certain learning experiences in the learning teaching process with the hope that it can turn into output with certain qualifications. In the learning process, a number of environmental factors, which are input from the environment (invironmental input) and a number of factors, instrumental (instrumental input) are deliberately designed and manipulated to support the achievement of the desired output.

In addition to the ability factors possessed by students, there are also other factors, such as learning motivation, interest and attention, attitudes and study habits, perseverance, socio-economic, physical and psychological factors.

Furthermore, Nana Sudjana (2011) states that the results that can be achieved still depend on the environment. That is, there are factors that are outside the student's self that can determine or affect the learning outcomes achieved. One of the

most dominant learning environments influencing learning outcomes in schools is the quality of teaching. As for what is meant by the quality of teaching is high or low or whether or not the teaching and learning process is effective in achieving teaching objectives.

The opinion above is in line with Bloom's theory of school learning which states that there are three main variables in school learning theory, namely individual characteristics, teaching quality, and student learning outcomes. Meanwhile, Caroll argues that learning outcomes are influenced by five factors, namely (a) learning talent, (b) time available for learning, (c) time required by students to explain lessons, (d) quality of teaching, and (individual ability to learn).) (Nana Sudjana, 2011).

Then the factors that also determine the level of efficiency and success of student learning are learning approaches (approach to learning) and strategies or tips for implementing teaching approaches and methods. So as an educator it has become imperative in terms of paying attention to the suitability of strategies, approaches, models, methods, and learning techniques used, so as not to blame internal and external factors on students only (Muhibbin Syah, 2003).

Every teaching and learning process always produces learning outcomes. The problem faced is to what level the learning outcomes have been achieved. In connection with this, the success of the teaching and learning process is divided into several levels or levels, namely: 1). Special (maximum), if all the subject matter being taught can be mastered by students: 2). Very good (optimal), if most (76%-99%) of the subject matter taught can be mastered by students: 3). Good (minimum), if the subject matter being taught is only (60%-75%) mastered by students: 4). Less, if the subject matter being taught is less than (60%) controlled by students (Syaiful Bahri Djamarah, 2002).

The indicators that indicate that a teaching and learning process is considered successful are as follows: Absorption of teaching materials taught achieves high achievement, both individually and in groups The behavior outlined in the learning objectives has been achieved by students, both individually and in groups (Syaiful Bahri Djamarah, 2002).

Furthermore, according to Sudjana, learning outcomes are abilities possessed by students after they receive their learning experiences. Meanwhile, according to Horward Kingley in Sudjana (2011), divides three kinds of learning outcomes, namely (1) skills and habits, (2) knowledge and understanding, (3) attitudes and ideals. This opinion from Howard Kingsley shows the results of changes in all learning processes. These learning outcomes will continue to stick with students because they have become part of the student's life.

Trianto (2010) suggests that the learning model is a conceptual framework that describes a systematic procedure in organizing learning experiences to achieve

certain learning objectives, and serves as a guide for learning designers and teachers in planning teaching and learning activities.

Furthermore, before explaining the meaning of the Two-Color Game, we must first know the meaning of the game in learning activities, because the Two-Color Game is one of several game models that can be used in learning, especially learning materials for addition and subtraction of integers.

According to Ahmadi as quoted by Pitadjeng (2006), the definition of the game is an act that contains preoccupation and is carried out of its own free will, free without coercion, with the aim of getting pleasure when doing activities with fun, free (not feeling forced), and getting pleasure. When doing these activities, the child feels like he is playing.

While the understanding of the Two Color Game can be seen from the function of this game, namely "Two Color Game activities are used to help children understand the addition and subtraction of integers" Pitadjeng (2006)

Learning steps with a two-color game model: The teacher explains the lesson, namely the addition and subtraction of integers using a two-color game model with the lecture method and presentation in front of the class. Students pay attention to the teacher's explanation, and the teacher gives students the opportunity to ask questions that they do not understand. Then the teacher asked some students to practice it in front of the class in front of their friends . Then the teacher divides the students into several groups with the number in one group consisting of 6-8 students

The teacher gives Student Work Exercises to each group to work on and discuss

The teacher controls the course of group work or discussion . The teacher asks representatives from each group to present the results of their work and group discussions. Next, the teacher and students discuss the exercises that have been done . The teacher gives praise to students or groups that are successful and motivates groups that have not been successful. The teacher and students make conclusions about the material that has been studied .

According to Cronbach, the best learning is by experiencing and by experiencing it students use their five senses (Sumadi Suryabrata, 2005). This opinion is not much different from the limitations of Berelson and Steiner in their book Human Behavior, quoted by Abdu Rachman Abror (1993), that "learning in a broad sense refers to the consequences caused by experience both directly and symbolically on subsequent behavior" The opinion of these experts that learning is not obtained from experience from school, but also daily experience either directly or indirectly. or symbolic that will affect subsequent behavior. This means that there is a mutual relationship between the effects of experience on subsequent behavior.

Furthermore, Piaget as quoted by Pitadjeng (2006: 27) explains that in learning, a person's cognitive structure

occurs because of the process of assimilation and accommodation. Assimilation is the process of getting new information and experiences that are directly integrated into the mental structure that a person already has. Accommodation is a mental restructuring process as a result of new information and experiences. So learning does not only accept old information and experiences that students have to accommodate new information and experiences. Therefore, what needs to be considered at the concrete operation stage is learning based on concrete objects in order to make it easier for students to understand mathematical concepts.

The development of mathematical concepts, according to Dienes, can be achieved through a continuous pattern, in which each series in a series of learning activities goes from the concrete to the symbolic. The learning stage is a planned interaction between one segment of the knowledge structure and active learning, which is carried out through specially designed mathematical media. According to Dienes, math games are very important because the mathematical operations in the game show concrete rules and better guide and sharpen the understanding of mathematics in students. It can be said that concrete objects in the form of games have a very important role in learning mathematics if they are manipulated properly (Pitadjeng, 2006: 32).

Then further Dienes argues that mathematical concepts will be easy and successful to learn through certain stages which are distinguished in six sequential stages as follows: 1) Free Play Stage . 2) Stage Games (Games) . 3) Stage of Studying Similarities (Searching for Communities) . 4) Representation Stage (Representation) . 5) Stage of Symbolization (Symbolism) . 6) Stage of Formalization (Formalism) (Sri Subarinah, 2006)

Nandang Budiman (2007: 23) states that to be able to enjoy peer group activities or to be able to entertain themselves outside the peer group, children must learn playing skills. This has a reason that in learning there is a learning process. The similarity is that in learning and playing both changes occur, which can change behavior, attitudes, and experiences (Ngalim Purwanto, 2010: 87). The similarities between the two will be an opportunity for the teacher to take advantage of it by combining the two, so that children will feel like they are playing, even though they will learn from what they play.

In learning mathematics, games can make students active, think logically, and self-satisfaction occurs so that in the learning process learning outcomes increase. Students will be more active because they have to move to play the game, think about how to play the game, even think about winning the game, so that it will give birth to satisfaction in the child, because in addition to being satisfied with the victory achieved in the game, but also satisfaction with their mastery of the material presented. there is.

Departing from some of the opinions above, the researchers tried to apply one of the game learning models that can be applied in special mathematics learning materials for addition and subtraction of integers is a two-color game model that will make it easier for students to understand the concept of addition and subtraction with fun and can mobilize his senses

II. RESEARCH METHODS

The form of this research is Classroom Action Research (CAR). Classroom Action Research is carried out so that teaching changes occur for the better and can improve learning outcomes. According to Arikunto, et al (2006: 8) classroom action research is research conducted in the classroom with the aim of improving or improving the quality of classroom learning practices.

This research was carried out in collaboration with a grade I teacher who observed the activities of researchers and students. The researcher acts as the implementer of the Two Color Game Model that is applied. This research was conducted in two cycles. According to Arikunto, et al (2006) suggests a cycle model in class action which has four components, namely planning, implementing actions, observing and reflecting .

The subjects were students of class I MIS Masheba in the first semester of the school year 20 20 /20 21 . The number of students who were used as subjects in this study were 29 students.

The object of this research is the mathematics learning outcomes of the first grade students of MIS Masheba in the odd semester of the 20 20 /20 21 school year and the application of the two-color game model.

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III. HASIL PENELITIAN DAN PEMBAHASAN

The completeness of student learning outcomes before and after the action by applying the two-color game model is summarized in the completeness of student learning outcomes in Table 1.

Table 1. Recapitulation of Student Learning Outcomes

Learning outcomes	Number of Students Reaching KKM	Completeness Percentage	Average Learning Outcomes
Before Action	14	48%	68.34
Cycle I	20	69%	75.13
Cycle II	26	90%	79.38

From Table 1 it is known that before the action the number of students who had not completed 14 people with a completeness percentage of 48% with an average student learning outcome reaching 68.34, while student learning outcomes in the first cycle evaluation test there was an increase in student learning outcomes to 20 people with a percentage completeness rose to 69% higher than before the action with an average of 75.13 and student learning outcomes in the second cycle there was an increase in student learning outcomes to 26

people with the percentage of completeness rising to 90% with an average of 75.13.

Based on the results of the analysis, it can be concluded that the use or application of the two-color game model is one of the learning strategies that can improve student learning outcomes because in principle, each student in this strategy is given the opportunity to carry out group learning discussions consisting of students who have heterogeneous abilities. In this case, each student will be guided to complete the tasks given, and the teacher encourages students to try to understand and master the subject matter before it is concluded as a result of the discussions that have been carried out. This is also the main reason why the two-color game model is appropriate to be used to improve student learning outcomes in mathematics.

This shows that the application of the two - color game model can improve student learning outcomes in arithmetic operations with basic competencies about adding and subtracting numbers up to 20 in class I MIS Masheba .

Based on the data analysis carried out, it can be said that there is an increase in the mathematics learning outcomes of the first grade students of MIS Masheba in 2020 / 2021, especially the integer material

IV. CONCLUSION

Based on the descriptive analysis after the actions taken, it can be concluded that applying the two-color game model can improve student learning outcomes in arithmetic operations material with basic competencies about adding and subtracting numbers up to 20 in grade I MIS Masheba students , this is indicated by 89.28% students above the KKM score.

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