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Drill learning and practice method: Improving student learning outcomes on number counting operations round

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ABSTRACT

This research is classroom action research that aims to improve student learning outcomes by using the drill and practice method in the direct learning model. The application of the direct learning model follows the following phases: 1) conveying the objectives and preparing the learners, 2) demonstrating knowledge or skills, 3) guiding the training, 4) checking understanding and providing feedback, and 5) providing opportunities for further training and application. This research was carried out in as many as two cycles by following predetermined stages. The subject of this study is 7thgrade students of SMP Negeri 1 Sindue Tobata, with a total of 23 students. The results of the research from Cycle I and Cycle II showed an increase in student learning in integer counting operations learning using the drill and practice method in the direct learning model, namely in Cycle I by 60.8% and in Cycle II by 87%. Therefore, the drill and practice learning method can improve student learning outcomes in learning integer counting operations.

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INTRODUCTION

Learning outcomes cannot be separated from the learning process, because the quality of learning outcomes is influenced by the learning process itself (Yandi, Putri, & Putri, 2023). Learning outcomes are also the result of an interaction of learning actions and teaching actions; the teaching action ends with the process of evaluating learning outcomes (Astuti & Octaviani, 2023). Learning outcomes are the result of an interaction of learning actions and teaching actions. Therefore, there needs to be appropriate learning improvement efforts to improve student learning outcomes (Amalia, Surya, & Syahputra, 2017).

Teaching methods are also important; the right selection according to the subject of certain integer counting operations will increase the absorption of students in learning (Nasution, 2018). The teaching method used by teachers helps students to understand concepts. The importance of the method here will lead students to the development of rational or reasoning abilities and potentials in themselves (Setyaningrum, Hendikawati, & Nugroho, 2018). The tendency that occurs in integer operation learning is that learning is more teacher-centered (Yasmin & Santoso, 2019). The methods used by teachers are lectures, questions and answers, assignments, and exercises.

Teaching is to guide students' learning activities so that they want to learn. Teaching methods are also important; the right selection according to the subject of certain integer calculation operations will increase the absorption of students in learning. The teaching method used by teachers brings students how to understand concepts (Ulfa & Saifuddin, 2018). The importance of the method here will lead students to the development of rational or reasoning abilities and potentials in themselves. The tendency that occurs in learning integer counting operations is learning learning methods. Drill and practice is an activity of doing the same thing over and over again earnestly with the aim of strengthening an association or perfecting a skill in order to become permanent (Rahmawati, 2024). Prastowo, & Syalihin, The characteristic of this method is the activity in the form of repeated repetition of the same thing (Wahyuni, 2023). Learning methods: Drill and practice direct students through exercises to improve dexterity, fluency, and fluency/a skill (Sutiah, 2016).

The drill and practice learning method is a learning method that is suitable for use in learning calculation materials and foreign languages, and provides repeated exercises to acquire certain skills. In mathematics lessons, this method can develop students' intellectual skills, such as summing, subtracting, teaching actions, and teaching actions ending with the process of evaluating learning outcomes (Astuti & Octaviani, 2023). Learning outcomes are the result of an interaction of learning actions and teaching actions. So there needs to be an effort to improve multiplying, dividing, pulling roots in the calculation of shapes, and so on. This method can be said to be a good learn to get used to certain habits. With continuous practice, it will get used to it, and then it will become a habit. In addition, this method can also increase speed, accuracy, and perfection in doing something and can also be used as a way to repeat the training materials that have been presented and can also increase speed. With this method, students become skilled in working procedural on questions (Fahrurrozi, Sari, & Shalma, 2022).

Based on the results of the researcher's interview on March 2, 2024, with a 7th-grade mathematics teacher at SMP Negeri 1 Sindue Tobata, information was obtained that most 7th-grade students had difficulties in completing integer calculation operations. In this class, students have difficulty sorting the smallest number to the largest number, distinguishing which integer number is numbers, from other addition. multiplication, and division of integers, and students do not understand the concept.

Following up on the results of the researcher's interview with the mathematics teacher of 7th grade at SMP Negeri 1 Sindue Tobata, to be more convincing, the researcher gave an identification test to see the extent of the students' mistakes that occurred when working on the integer calculation operation material (Nurlianti, Yamtinah, & Susilowati, 2019). The test given is material on integer counting operations that have been studied previously. The identification test was given by researchers in grade VII of SMP Negeri 1 Sindue Tobata on March 2, 2024.

Relevant research is research that is similar to the research we conduct. (1) Research conducted by Sutiah (2016) shows that student learning outcomes with the drill method in grade V of SD Negeri 165726 Tebing Tinggi in the 2013/2014 school year have a positive impact on improving student learning outcomes. (2) Research conducted by Sukarsana (2023) shows that the application of the drill method with a culturally responsive teaching approach in the content of mathematics lessons in grade IV of SDN Lawangan Daya 2 Pamekasan for the 2023/2024 school year can improve student learning outcomes. (3) Research conducted by Lestari & Sapri (2018) on the application of training methods and practices (drill and practice) shows that the increase in the learning outcomes of students' skills per cycle and the results of the t-test to the difference in the average learning outcomes of skills per cycle. (4) Research conducted bv Handayani & Kurniah (2019) shows that the application of the drill and practice can increase English language readiness. The differences between this study and the previous study are (1) the use of learning methods in this study uses the drill and practice method, (2) the difference in the material provided in this study is that it focuses on the material of integer counting operations, (3) the place of research in this study is at SMPN 1 Sindue Tobata, (4) the difference in research time: this research was carried out in the odd semester of the 2024/2025 school year, and (5) the selection of different research subjects in this study took the subjects of 7th grade C SMPN 1 Sindue Tobata.

METHOD

This research is a Classroom Action Research (PTK) with the aim of improving student learning outcomes (Hastuti, 2022). The research was carried out at SMPN 1 Sindue Tobata. The subjects of this study were all students of 7th grade C of SMPN 1 Sindue Tobata, totaling 23 students. The design of this study refers to the classroom action design developed by Kemmis and McTaggart, which consists of four stages, namely: planning, action, observation, and reflection (Tompira, Hamid, & Awuy, 2016). The description of the design and research flow carried out in this study can be seen in Figure 1. The data that has been analyzed is then collected using qualitative and quantitative data analysis techniques. Data on the results of interviews and observations of teacher and student activities were analyzed qualitatively. The data analysis technique used in this study is a quantitative technique. Quantitative data is data obtained from student results in the form of initial action tests, final action tests, and teacher and student activities during the learning process (Hamam, 2018). The criteria for the success of the action in this study use quantitative indicators:

1. Classical learning completeness (percentage)

KBK

= Number of students who completed Number of students who took the test

2. The activities of teachers in processing learning and students during the learning process are in the category of good or very good which is calculated using the following formula:

$$Value = rac{Total\ base\ score}{Max\ score} imes 100\%$$

The criteria for the success of the action can be determined as follows:

90% ≤ NR ≤ 100% Excellent 75% ≤ NR ≤ 90% Good 55% ≤ NR ≤ 75% Sufficient 35% ≤ NR ≤ 55% Less 0% ≤ NR ≤ 35% Very Less





RESULTS AND DISCUSSION

The results of this study consist of two parts, namely the results of pre-class action and the results of the implementation of class actions.

Pre-Action Results

In the pre-action, the initial test was carried out in 7th grade C on Saturday, October 5, 2024. The implementation of this initial test was carried out to find out the initial knowledge or prerequisites of students before learning the integer calculation operation material, as well as a guideline for group division. This test was attended by 23 students out of 23 students.

The results of the analysis of the initial test were followed by 23 students. Question number 2: There are still 9 students who cannot add up that are not the same; they just add up without paying attention to the type. Question number 3: There are still 7 students who have not been able to answer the deduction that is not the same. They only make the directly without deduction paving attention to the type. Question number 4: There are still 14 students who have not been able to answer the multiplication problem that is not the same. They only do

multiplication directly, regardless of the type. Question number 5: There are still 13 students who have not been able to answer the division that is not the same. They only do the division directly without paying attention to the type.

Based on the results of the initial test and the results of consultation with the mathematics subject teacher in 7th grade C of SMP Negeri 1 Sindue Tobata, the researcher formed 5 heterogeneous learning groups, in which groups 1, 2, 3, and 4 each had 5 members, and group 5 had 4 people. Each group had a high, medium, and low level of ability. Then determine the informants, as many as 3 students. Namely 1 person with high ability, 1 person with medium ability, and 1 person with low ability.

Results of Class Action Implementation Cycle I

The implementation of the first cycle of actions was carried out in 3 meetings. At the first meeting, learning was carried out with material on the basic concept of integer summation operations guided by lesson plans, LKPD, practice questions, and short quizzes that had been prepared in advance using the drill and practice learning method. The final action test was carried out with the time used to solve the 3 questions in the final test of the first cycle being 60 minutes. The number of students who took the test was equal to the number of students who attended from the beginning of learning, which was 23 students. The results of the final test of the action: Only 14 students got a complete score, while the other 9 students did not get a complete score. This is because there are still many students who make mistakes when working on problems by operating positive and negative numbers. So that the indicators of the success of the actions in the first cycle are still in the category of lack and the KBK is 60.8%.

Based on the results of field notes, interviews with informants, and

observations made by observers, there are still many deficiencies found in the actions of Cycle I. One of them is that students' understanding of the material taught is still low; students still play a lot during learning, which results in the classroom atmosphere becoming noisy. Apart from the results of field notes, interviews with informants, and observations made by observers, the researcher also saw the results of the final test of the action of 14 students who received complete scores, while 9 other students did not receive complete scores. This is because there are still many students who make mistakes when working on problems by operating positive and negative numbers. So that the indicators of the success of the actions in the first cycle are still in the category of lack, and the average score of students is 60.8%. It is sought that in the implementation of the next second cycle, teachers must provide better and clearer guidance to students who get low scores.

Cycle II

In the implementation of cycle II actions, the actions carried out were to carry out learning activities that refer to the RPP cycle II that had been prepared previously and the results of reflection in cycle I as an effort to overcome the shortcomings carried out in cycle I so that they would not be repeated in cycle II. The final action test was carried out with the time used to solve the 3 questions in the final test of the first cycle being 60 minutes. The number of students who took the test was equal to the number of students who attended from the beginning of learning, which was 23 students. Results of the final test of the second cycle The number of students who were declared complete in the final test of the second cycle was 19 students out of 23 students who took the test. So that the indicators of the success of the actions in the second cycle are in the good category and 87% KBK.

Based on the results of field records, informants. interviews with and observations made by observers, it can be said that the shortcomings that occurred in Cycle I have been well implemented in Cycle II. As for the analysis of the final test of Cycle II, information was obtained that some students had achieved the learning goal, namely that students could complete integer counting operations correctly. That way, there has been an increase in student learning outcomes in Cycle II, even though there are several students who are seen working together during the final test. The number of students who were declared complete in the final test of the Cycle II was 19 out of 23 students who took the test. So that the classical completeness of students is 87%, which has exceeded the indicators of the success of the action.

KBK × 100% = 82.6% = $\frac{19}{23}$

This research is classroom action research (PTK) that aims to improve student learning outcomes in integer counting operations material in 7th grade C SMP Negeri 1 Sindue Tobata with a total of 23 students.

The research was carried out from October 5, 2024, to October 15, 2024. This research consists of two cycles, namely Cycle I and Cycle II. Each cycle consists of 4 components, namely (1) planning, (2) implementation of actions, (3) observation, and (4) reflection, as stated by the Ministry of Education and Tanggart (Muah, 2016).

The implementation of learning cycles I and II follows the phases of direct learning by Todongi, Hamid, & Lefrida (2015), which consists of six phases, namely (1) conveying goals and preparing students, (2) demonstrating knowledge or skills, (3) guiding training, (4) checking understanding and providing feedback (5) providing training for further training and application (Herwanto, 2022).

The final action test in Cycle I consists of 3 questions; number 1 is

divided into 6 parts. The final test of the Cycle I of action shows that students can work on addition and subtraction problems. However, there are some students who are less careful in adding and subtracting positive and negative numbers. The final action test in Cycle I consists of 3 questions; number 1 is divided into 6 parts. Based on the results of the analysis of the final action test in the Cycle I, 23 students took the test, and there were 14 students achieved the learning objectives. The final test of action shows that students can solve problems well. Students can add and subtract integers correctly, but there are still some students who still make mistakes. These mistakes include that students tend to still mistakenly add and subtract integers, do not understand the nature of addition and subtraction, and tend to be less thorough in completing tests. The results of the final action test are known, and the student's learning outcomes reach the target of learning completeness.

The final action test in Cycle II consists of 3 questions; number 1 is divided into 8 parts. The final test of Cycle II of action shows that students can work on multiplication and division problems. However, there are some students who are less careful in operating positive and negative numbers. Based on the results of the analysis of the final action test Cycle II, it shows that out of 23 students who took the test, there were 19 students who achieved the learning objectives of the final action test. Students can solve problems well and can do multiplication and division correctly, but it is undeniable that there are still mistakes made by students. These mistakes are caused by, among other things, students' low ability in the multiplication and division of negative integers and positive integers and lack of accuracy in completing the given tests. In general, most students can do multiplication and division well. Based on the results of the final action test, it is

known that the student's learning outcomes reach the target of learning completeness.

The results of the observation of student activities in the first cycle provided information that students did not respond to student answers in groups, and students were still afraid to give responses and answer questions. In addition, in studying LKPD and doing LKPD, students can get a lot of guidance. Meanwhile, in Silus II, information was obtained that students had dared to answer questions from the group, and many students responded to the answers of other groups.

Based on the results and discussions described above, it was concluded that teacher activities and student activities in learning have increased and indicators of action success have been achieved. It can be concluded that the application of the drill and practice method in the direct learning model has an important role in improving student learning outcomes. This shows that there is an increase in the learning outcomes of 7th-grade C students of SMP Negeri 1 Sindue Tobata in integer counting operations by applying the drill and practice method in the direct learning model.

CONCLUSIONS AND SUGGESTIONS

Based on the results of the research and discussion, it can be concluded that the application of the drill and practice in direct learning can improve student learning outcomes in the integer calculation operation material in 7th grade C SMP Negeri 1 Sindue Tobata, namely by following the phases of direct learning with the drill and practice as Conveying goals follows: (1) and preparing students, (2) Demonstrating knowledge or skills, (3) Guiding training, (4) Checking understanding, and (5) Providing training for further training and application (Arikunto & Suhardjono, 2021). With repeated exercises and group

activities, students are given repeated exercises, and high-, medium-, and lowability students work together in groups so that high-ability students are motivated to help their low-ability friends to work on LKPD. This can gain knowledge and experience that impresses students, for example, respecting the opinions of others (Wilanda, 2020). The students' learning about outcomes integer counting operations showed a good improvement. This is shown from the results of the final test of the first cycle students with an average score of 60.8% (poor category), who can increase in the second cycle with an average score of 87% (good category). The previous research that is relevant to this research is research conducted by Sutiah (2016) about improving student learning outcomes through the drill integer calculation and problem-solving operations material in mathematics lessons in the 5th grade of SDN 165726 Tebing Tinggi. Based on the results of the study, it shows that student learning outcomes with the drill method in the 5th grade of SD Negeri 165726 Tebing Tinggi in the 2013/2014 school year have a positive impact on improving student learning outcomes. This can be seen from the increase in the percentage of student learning completeness in cycle I (71.08%) and cycle II (89.18%). The relevance of the above research to this research is that it uses the same learning method, namely the learning method of drill and integer calculation operation material, and the difference between this study and the above research is that this study uses the drill and practice, while the above research uses the drill and problemsolving.

Based on the discussion and conclusion, the researcher suggests (1) for teachers, the drill and practice method in the direct learning model, so that it can be an alternative material in choosing learning methods that can support efforts to improve student learning outcomes in mathematics lessons, especially in the operation of integer counting. (2) For other researchers who want to apply the Drill and Practice method, try to apply it by combining learning models other than the learning model. direct with the consideration that it is suitable to be combined with the Drill and Practice method, and can also try the Drill and Practice method in other mathematics subject matter with the consideration that the material is suitable to be applied using the Drill and Practice, and it is necessary to attention to time and class pav management so that the learning process can run according to the learning plan and objectives to be achieved.

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