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IMPROVING THE LEARNING OUTCOMES OF ELEMENTARY SCHOOL STUDENTS USING THE EFFECTIVENESS, CREATIVE, AND HORAY MODELS

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ABSTRACT
This study aims to improve students' cognitive and psychomotor learning outcomes by using the Means Ends Analysis model, a combination of Creative Problem Solving and Course Review Horay. This research uses a descriptive method. The study involved a mathematics teacher and 26 grade 5B students at SDN 1 Guntung Paikat Elementary School, Banjarbaru City, South Kalimantan. The research procedure refers to the Elliott Action Research Model scheme: pre-observation, general action plan, observation, and reflection. Data was obtained using observation and tests on students. The instrument used in assessing learning outcomes in the cognitive and psychomotor domains of mathematics learning is by giving written tests on evaluation questions in multiple-choice and essays. Data analysis with Miles and Huberman models includes data reduction, tabulation, presentation, and conclusions. The results showed that applying the Means Ends Analysis learning model combined with Creative Problem Solving and Course Review Horay could improve students' cognitive and psychomotor abilities. The cognitive domain in the first cycle of student learning completeness is 69%, the cycle is 77%, and the third cycle is 85%. In the psychomotor domain, the achievement of the first cycle only reached the skilled criteria, the second cycle also reached the skilled criteria, and the third cycle reached the very skilled criteria.
Keywords: Elementary School, Creative Problem Solving, Cognitive Learning, Psychomotor Abilities

INTRODUCTION

Education in a country owns a vital role in nation-building. Education is an introductory provision that aims to develop abilities and personality. With education, pride, and civilization of a nation are easy to realize. However, based on a United Nations Educational, Scientific, and Cultural Organization, the quality of Indonesian education only gets a rank of 10 out of 14 developing countries in the Asia Pacific (Theresiawati et al., 2020). One of the actors at the

forefront of improving the quality of education is the teacher (Biasutti et al., 2019). Teachers have a significant role in improving educational institutions' quality because teachers are the heart of an educational institution (Kinay & Suer, 2020).

A good teacher is not just brilliant, but a teacher who can teach students. Teachers are the main element that has a vital role in formal education (Wahono & Chang, 2019). A good teacher is not just a teacher with character, but a teacher who can form a good character for the students (bin Nordin et al., 2019). Not just a teacher who has an example and integrity, but a teacher who can make students have role models and should be imitated by students (Azmi et al., 2020). The teacher's main task is to teach and help students with learning difficulties (Tatto, 2021).

In recent years, there has been a fast revolution of the internet or wireless information and communication technology, resulting in various interactive multimedia. Educators integrate information and communication technology into subjects to help students use teaching materials, learning methods, and various learning media (Allcoat & von Mühlenen, 2018). It is the responsibility of educators to have more efficient teaching skills to enable students to enjoy learning and grow a new generation of creative, rational, and critical thinking with technology in this digital era (Panskyi et al., 2019). Teacher competence must also be improved to keep up with the flow of information and technology developments (Brundiers & Wiek, 2017). The teacher is the facilitator (Idris et al., 2021). Majors in learning must acquire the skills and competencies needed to adapt and use today's technology in the ever-changing learning process and environment.

Students' most basic ability to develop technology and science is mastering mathematics (Verschaffel et al., 2020). Ass part of the school curriculum, mathematics is undoubtedly directed to support these educational goals (Bagherzadeh & Tajeddin, 2021). These objectives indicate the importance of creativity, creative activity, and creative thinking (thinking) in learning mathematics (Hasanah et al., 2020). Therefore, learning mathematics contributes to developing creative thinking skills in each student to become a quality human resource (Weinhandl et al., 2020).

Mathematics is a science that studies quantities, spaces, transformations, and relations (relationships). Understanding these four things leads to conceptual development to more incredible generalizations and broader investigations (Checa et al., 2019). Furthermore, math is essential mastered elementary school students as, according to (Maričić & Stamatović, 2018), it will be difficult for someone on this earth without using mathematics. Therefore mathematics continues to provide advances in science for now and in the future. Furthermore, mathematics is one of the general subjects and is the basis for developing science and technology (Salihu & Räsänen, 2018). Therefore, the main principle in learning mathematics today is improving and preparing learning activities that are beneficial for students.

The potential of students to solve problems in mathematics is essentially an ability to know (cognitive) high-level thinking. In this case, problem-solving thinking is the final stage after the evaluation stage, part of Bloom's cognitive stage, which Anderson and Krathwohl revised. This proves that students' problem-solving potential is at the highest stage in the cognitive domain (Hobri et al., 2020; Sumaji et al., 2020).

Development in this cognitive domain is needed to have higher-order thinking skills by providing stimuli in questions. Students are accustomed to using their knowledge in the thinking process in mathematics (Hew & Lo, 2018). The stimulus or stimulus given to improve mathematics learning outcomes in this cognitive domain is based on the PISA model (Kiat et al., 2020). The reason for using the PISA model is because it is based on an innovative literacy approach related to the concept of learning, where students can integrate their cognitive and psychomotor domains in solving mathematical problems (Rosana et al., 2020). However, the expected mathematics learning is not in line with the problems in Indonesia. Referring to the PISA assessment by the OECD, it stated that based on international studies of student mathematical literacy in Indonesia, it was not satisfactory.

The use of mathematical modeling (contextual problem-taking) with terms that are not yet familiar in Indonesia becomes its difficulties and challenges. As a result, the process of associating with mathematical concepts is hampered. According to (Gomes et al., 2020), PISA is the most recognized assessment globally, and the results can be used as a benchmark for the position of students' mathematical literacy in Indonesia. The difficulties experienced by students in learning mathematics impact not only their cognitive domains but also their affective and psychomotor domains (De Aquino et al., 2016). PISA is the most recognized assessment globally, and the results can be used as a benchmark for the position of students' mathematical literacy in Indonesia. The difficulties experienced by students in learning mathematics impact not only their cognitive domains but also their affective and psychomotor domains (Man et al., 2021). PISA is the most recognized assessment globally, and the results can be used as a benchmark for the position of students' mathematical literacy in Indonesia. The difficulties experienced by students in learning mathematics impact not only their cognitive domains but also their affective and psychomotor domains (Yazlık & Çetin, 2020).

A new problem arose during the COVID-19 pandemic, which required learning to be done online. When students study at home and do assignments given by educators online through WhatsApp Group, they find it challenging to accept mathematics learning, especially data processing materials. That impacts all domains of learning outcomes such as cognitive, affective, and cognitive domains Psychomotor. If left unchecked, this problem will undoubtedly impact students, and it is feared that they will have difficulty learning different mathematics subjects (Koza Çiftçi & Yıldız, 2019; Learning, 2021). One effort that can be done to overcome these problems is to apply the Means Ends Analysis learning model combined with Creative Problem Solving and Course Review Horay, which will be implemented learning (Ko et al., 2021). The learning process with blended learning or online learning through video conference and offline through the house visit (Hobri et al., 2020; Kula & Güler, 2021).

RESEARCH METHODS

This research uses a descriptive method. The study involved a mathematics teacher and 26 grade 5B students at SDN 1 Guntung Paikat Elementary School, Banjarbaru City, South Kalimantan. The research focuses on the Action research cycle model, which has Reconnaissance,

Action, and Reflecting Steps. The research procedure refers to the Elliott Action Research Model scheme: pre-observation, general action plan, observation, and reflection. This research was conducted in three cycles through a qualitative approach to Classroom Action Research. Data was obtained using observation and tests on students. The instrument used in assessing learning outcomes in the cognitive and psychomotor domains of mathematics learning is by giving written tests on evaluation questions in multiple-choice and essays. The research indicator for the cognitive domain is at least 80% of the total number of students who get a score of 70. Meanwhile, at least 80% of the group gets a score in the minimum skill category for the psychomotor domain. Data analysis with Miles and Huberman models includes data reduction, tabulation, presentation, and conclusions.

RESULT AND DISCUSSION

Improved Student Cognitive Learning Outcomes

In cycles, I, II, and III, the learning outcomes obtained continued to increase. Cognitive learning outcomes are shown by comparisons which can be seen in table 1.

Table 1. Cognitive Domain Assessment Results in Each Cycle

Rating Result	Cycle I	Cycle II	Cycle III
Complete	69%	77%	85%
Not Complete	31%	23%	15%
Amount	100%	100%	100%

In table 1, it is known that there is an increase in student learning completeness in each cycle. For example, cycle I put 69% of students on the completion criteria, which increased to 77% in cycle II and increased again to 85% in cycle III. Thus, cycle III has achieved the research indicators that have been targeted, namely above 80% of students who have completed their cognitive learning outcomes. Furthermore, the results showed that the application of the Means Ends Analysis model, a combination of Creative Problem Solving and Course Review Horay, was proven to improve student learning outcomes in the cognitive domain.

Students make adjustments to the direction of the teaching teacher. The learning process that previously only used WhatsApp groups and home visits were changed using the Zoom Cloud Meeting application to see student activities directly while studying. As a result, as many as 69% of students achieved learning mastery, but this percentage had not yet reached the learning indicator target. In the next cycle in the cognitive domain, the teacher will try to encourage students to be more thorough in working on the questions, provide sufficient time to answer questions, and strengthen students who make mistakes or inaccuracies in working on the questions. The group that can achieve a score of 8 with the criteria "Highly skilled". From implementing the first cycle, both the cognitive and psychomotor domains have not met the indicators of research success. Therefore, the research was continued in the next cycle (Cycle II). After reflecting and carrying

out the learning steps as stated in the lesson plans, the assessment results of students' cognitive domains showed an increase compared to the previous cycle.

The percentage of student learning outcomes fluctuates between 40 to 100. It shows that many students have not met the KKM score because of their inaccuracy in working on the questions given. However, in cycle II, some students showed progress and increased understanding from before. Students have also begun to familiarize themselves with the blended learning system, especially when using the Zoom Cloud Meeting application, then coupled with the implementation of home visits, students show good progress in understanding the learning being carried out. It can be seen the number of students completed the percentage, which increased from 69% the first and 77% in the second. However, some students are still making adjustments to the teacher's direction. In addition, the learning process that previously only used WhatsApp Groups and home visits have changed with the Zoom Cloud Meeting application to see student activities while studying directly. As a result, many students have exceeded completeness but have not reached the research indicators that have been set. Therefore, it must be continued in the next cycle. In the next cognitive domain cycle, the teacher will encourage students to work on the questions given.

In cycle III, it is seen that the achievement of the cognitive domain is more than 80% (22 people) meeting the indicators of research success. However, if we look at the completeness of learning, then only 15% have not been completed. The assessment results in the psychomotor domain were obtained from the results of group work in working on the data into diagrams (pictograms), then colored and cut images. In cycle III, students have shown significant progress. It can be seen from all groups who are skilled and neat in drawing diagrams and coloring and cutting the diagrams made. Two groups worked faster than the other groups so that they could score highly skilled criteria. Most of the groups have obtained scores with the criteria of skilled and highly skilled. Students have achieved the "Highly Skilled" and "Skilled" criteria due to improvements and refinements from the previous cycle. It needs to be maintained and motivated again to get the "Highly Skilled" criteria. Indicators that need improvement include the second aspect regarding drawing to present data in image diagrams (pictograms), still unable to present data in the form of image diagrams (pictograms) with neatly colored images.

Improving student psychomotor learning outcomes

The increase occurred in the cognitive and psychomotor domains, as shown in Table 2.

Table 2. Psychomotor Domain Assessment Results in Each Cycle

Rating Result	Cycle I	Cycle II	Cycle III
Very Skilled	0%	0 %	40%
Skilled	40%	40 %	40%
Skilled Enough	20%	60 %	20%
Unskilled	40%	0 %	0%
Amount	100%	100 %	100%

Judging from the table results in the psychomotor domain, cycles I and II, there is no group score of students with very skilled criteria. The criteria for highly skilled can only be achieved by groups (2 groups) in the implementation of cycle III. In addition, students are not accustomed to entering data into diagrams, so they experience delays in completing them. An increase in the acquisition of student assessment results both in the cognitive and psychomotor domains, of course, cannot be separated from the figure of a teacher in designing and implementing learning models. The learning model is a learning plan or design that is selected and used by educators in helping the goal of achieving the curriculum in a practical learning aim (Supeni et al., 2019). In general, as a guideline or benchmark, each student is given learning (Syaharuddin et al., 2021).

The psychomotor domain assessment was obtained from group work working on making data into image diagrams (pictograms), then the images were colored and cut out. Unfortunately, in this second cycle, most groups were still unable to present well, and the pictures were not colored neatly. In cycle II, students can still not achieve a value of 8 with the "Very skilled" criteria because they still lack the first aspect, namely presenting data into image diagrams (pictograms). However, compared to the first cycle, there was an increase because no more groups scored with the criteria of being less skilled. Because it still does not meet the indicators of research achievement, then proceed to cycle III. The assessment of students in cycle III of the cognitive domain is obtained from assessment at the end of each lesson presented in a written test using multiple-choice questions and essays. Teaching and learning activities are directed activities where learning itself is the main activity.

In contrast, teaching is a complementary activity that is expected to teach more effectively and optimally. Students will be more interested in learning when educators use appropriate teaching strategies. Therefore, innovative learning models are used (Suharto et al., 2020). The learning model used by educators when teaching is through the selection process and adjustment of subject matter first. Then, this learning model is used to arrange assignments to be given to students in an integrated manner. Educators developed the learning model to provide convenience for students when learning and achieving learning objectives (Adnan et al., 2021; Nur et al., 2019). Applying the suitable learning model increases student motivation, such as interest, motivation, and pleasant feelings when participating in learning, and learning experiences will provide meaning for students. Learning is fun if supported by a supportive atmosphere for learning (Hariri et al., 2020; Widharyanto & Binawan, 2020).

The Means Ends Analysis model can solve mathematical problems such as interpreting the data that has been presented, collaborating with friends, and creating a communication so that the student learning process is not passive and learning is not one-way. After students can master problem-solving related to data processing, students also need to cultivate creativity in processing and presenting data to use the Creative Problem Solving model (Arcos-alonso et al., 2021). This model can help students find problem-solving strategies to come up with a more creative problem-solving plan. Meanwhile, a fun model is needed to make students feel happy and generate motivation and interest in learning, namely the Course Review Horay model. Pleasant feelings in

students will increase if this model is applied at the time of learning so that it will reduce the mindset that states that mathematics is scary and challenging learning.

CONCLUSION

Applying the Means Ends Analysis learning model in combination with Creative Problem Solving, and Course Review Horay can improve student learning outcomes in the cognitive and psychomotor domains. For example, the cognitive domain of the first cycle of student learning completeness is 69%, the cycle is 77%, and the third cycle is 85%. In the psychomotor domain, the achievement of the first cycle only reached the skilled criteria, the second cycle also reached the skilled criteria, and the third cycle reached the very skilled criteria. Based on these data, it can be said that the application of the Means Ends Analysis learning model combination of Creative Problem Solving and Course Review Horay is effective in improving student learning outcomes both in the cognitive and psychomotor domains.

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