

PANTING Model in Improving Critical Thinking Skills of Elementary School Students



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ABSTRACT: The problems in this study are critical thinking skills and student learning outcomes. This is because lacking training students' critical thinking skills to solve problems. Efforts are made to overcome this problem by using the PANTING model. This study aims to describe critical thinking skills and learning outcomes of students. This research is a Class Action Research (PTK) which is carried out with 4 meetings. The subjects of this study are students of class VB SDN Telawang 3 Banjarmasin, with a total of 21 students in the second semester of the 2023/2024 school year. The type of data used in this study is qualitative. Qualitative data was obtained through observation of critical thinking skills, then using quantitative data for student learning outcomes obtained through written tests in groups and individuals. The analysis in this study uses descriptive analysis techniques and is described with graphs and interpretations with percentages. The results of this research show that Students' critical thinking skills in the 1st meeting reached 19% increased to 90% in the 4th meeting with the criterion of "Very Critical". The learning outcomes of students in the 1st meeting reached 24%, increasing in each meeting until the 4th meeting reached 100%. Based on the results of the study, it can be concluded that the use of the PANTING model can improve students' critical thinking skills and learning outcomes. This research can be used as a reference in using a learning model that can improve critical thinking skills and student learning outcomes.

KEYWORDS: PANTING Model, Critical Thinking Skills, Learning Outcomes

I. INTRODUCTION

Education is one of the very important components in a person's life. Education is the process of a person developing skills, attitudes and actions to acquire knowledge, as well as an action or process of developing reasoning and judgment. Experts argue that education is nothing but humanization. The realization of an ideal human being or an aspired human being according to the values and norms embraced (Nugraha, 2020: 4-5).

Various educational institutions in Indonesia to achieve educational goals, one of which is elementary schools (SD). Elementary school is a formal education that affects the provision of basic concepts in the formation of students' character, both spiritual, emotional and academic. Education in elementary school is a provision that will certainly affect the educational process that will be undertaken in the future. For this reason, the role of educators is needed to prepare graduates who are able to interact with humans from various parts of the world and of course equipped with interpersonal and intrapersonal skills. The general purpose of basic education is to lay the foundation for intelligence and knowledge, personality, noble morals, independent life skills and participate in higher education in the future (Unaenah & Sumantri, 2019:107).

Mathematics in elementary school education is a bridge and foundation for further education, so if at the elementary school level there is one of the wrong understanding of the concepts taught by educators to students, then in the future it will also continue to be wrong (Patimah et al., 2020: 100). Mathematics is one of the disciplines that can improve the ability to think, reason, solve daily problems and problems that occur in the world of work and contribute to the development of science and technology. Mathematics is a subject given to students so that they have the ability to work together. Mathematics learning teaches how to think coherently, validly, thoroughly, innovatively, and foster an attitude of never giving up in solving problems (Astuti & Noorhapizah, 2023: 609).

Mathematics is an important subject because it has benefits in the field of Science and Technology and is needed in daily life that needs to be equipped from an early age. With mathematics, students are trained to solve problems by thinking critically, carefully and carefully. Mathematics is part of the curriculum at every elementary school level as the initial level of formal education, its success in education has a great influence on the next level (Asniwati et al., 2019: 50).

Mathematics subjects based on Permendiknas Number 22 of 2006 (Jannah & Nabilah, 2023: 14) are: 1) understanding mathematical concepts, explaining the relationships between concepts and applying concepts or algorithms in a flexible, accurate,

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efficient, and precise manner in solving problems, 2) using reasoning on property patterns, performing mathematical manipulations in making generalizations, compiling evidence or explaining ideas and [mathematical statements, 3) solving problems which includes the ability to understand problems, design mathematical models, solve models and interpret the solutions obtained, 4) communicate ideas with symbols, tables, diagram or other media to clarify the situation or masalah, 5) have an attitude of appreciating the usefulness of mathematics in life, namely curiosity, attention, and interest in learning mathematics, as well as tenacity and confidence in solving problems.

Mathematics learning is expected in classroom learning practices as 1) learning centered on student activities, 2) educators train and guide students to think critically in solving problems, 3) educators organize students to work together in study groups, 4) all work results are always presented in front of the class to find the results of problem solving (Hidayat & Khayroiyah, 2018: 18).

In mathematics learning, it is expected to form students' high-level critical thinking skills such as critical thinking. The development of critical thinking skills occurs because students who face complex problems that can challenge students apply a number of abilities that students have, such as the ability to analyze and propose arguments, classify, provide evidence, give reasons, analyze the implications of an opinion and draw conclusions (Noorhapizah et al., 2022: 614). Critical thinking skills are also one of the basic abilities for solving math problems. Critical thinking is the ability to find the truth of information by analyzing a problem using the knowledge you have to get solutions from problem solving (Radiansyah et al., 2022: 56).

The ideal conditions for critical thinking are: 1) students are able to provide simple explanations including the ability to identify problems by focusing on questions and elements contained in the problem, 2) students are able to determine strategies and techniques which include the ability to use the right strategies in solving problems completely and correctly, 3) students are able to provide advanced explanations which include the ability to identify relationships between concepts in problems with statements, 4) students are able to conclude learning materials that include the ability to make further explanations related to learning (Apiati & Hermanti, 2020: 174-175).

However, what happened in the field showed a different thing, which was expected that students were not able to provide a simple explanation of how to solve problems so that it had an impact on student learning outcomes. This condition raises the problem of low critical thinking activities of students in the learning process so that it has an impact on the low learning outcomes obtained by students.

Based on interviews and observations with VB homeroom teacher Merry Chemestriana, S.Pd, she said that students are still passive in learning, students only listen quietly and take notes without digging up information by asking educators or expressing their opinions, when answering questions students still need guidance and direction from educators on how to solve them, students have not been able to give a simple explanation of how to solve problems, students only work on the questions but do not ask further why they get the answer and students are still confused about applying strategies and techniques in answering questions. This is evidenced by the results of the odd semester exam for the 2023/2024 school year at SDN Telawang 3 Banjarmasin in the VB class which is still under the KKM, which is ≥ 60 .

From the observations made, it can be concluded that learning activities have not been able to train students' critical thinking skills in solving problems, therefore by providing a solution, namely by choosing a variety of models, namely the PANTING learning model. The PANTING learning model is a combination model of Problem Based Learning, Number Head Together, and Talking Stick. Problem Based Learning (PBL) is a learning model with a problem approach so that students can compile their own knowledge, improve their skills, independent attitudes, and students' confidence. By using the Problem Based Learning learning model, student learning activities and outcomes increase if in learning educators actively involve students and experience knowledge directly so that students easily understand the material. The activity of students in the learning process certainly has a positive impact on the increased activity of students and students are more enthusiastic and enthusiastic to participate in learning (Lestari & Prastitasari, 2023: 26). The selection of the Problem Based Learning model is strengthened by the opinion of Idris et al. (2019: 59) who stated that Problem Based Learning (PBL) is a learning model using authentic (real) problems as a context for students to solve problems and think critically to gain knowledge and learn to make decisions.

Numbered Head Together (NHT) is a learning mode that seeks to increase student activities by using head numbers in each group. This cooperative learning model emphasizes that students play an active role in the learning process that has an impact on student learning outcomes (Rini & Hefny, 2023: 677-678). This is in line with the opinion of Amberansyah & Jannah (2019: 3839) which states that Number Head Together (NHT) focuses on students in finding, creating and conveying information obtained from various sources. This model can bring about an increase in student activities, interaction between students, and train students' scientific thinking skills.

Talking Stick (TS) acts as a complementary model because the use of this model contains songs or songs so that it makes the learning atmosphere more fun, this has an impact on students' enthusiasm for learning activities. This model can increase cooperation, express opinions and improve cognitive abilities (Metroyadi & Hadi, 2023: 867). In addition, Talking Stick (TS) can help students be more confident in expressing opinions and develop critical skills by increasing focus and responsibility in learning

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through stick games. The increase in students' critical thinking skills will certainly have an impact on students' learning outcomes will also increase (Sari & Nadia, 2023:301).

Based on the above, it is necessary to review articles related to the PANTING learning model. Therefore, the author is interested in reviewing an article with the title "The PANTING Model in Improving Critical Thinking Skills of Elementary School Students".

II. LITERATURE REVIEW

Entering the 21st century, high-level thinking skills (HOTS) are indispensable at this time in various aspects. A person is required to have three important abilities in thinking, namely: being critical, creative, and able to solve problems (Saraswati & Agustika, 2020: 258). Students are no longer led to be informed by being given information by educators, but to find out for themselves by thinking intelligently and creatively on the problems they will solve (Radiansyah et al., 2022: 1).

The main goal of implementing HOTS learning is how to improve students' thinking skills at a higher level, especially related to the ability to think critically in receiving various types of information, think creatively in solving problems using their knowledge and make decisions in complex situations (Ali et al., 2019: 3). Developing critical thinking skills is essential from elementary school age because it can improve understanding, develop problem-solving abilities, encourage creativity, build confidence, strengthen decision-making abilities, and aid in children's academic and personal development.

According to Agusta & Pratiwi (2021: 298) that "Critical thinking skills are skills that have an impact on students ability to think deeply and consider various things problem solving to produce fast, precise and accurate solutions". Critical thinking is a skill that a person has in using reason where a process analyzes, digests, and evaluates information, both from observation and experience, the results of which will be believed to be the basis of an action.

Critical thinking skills that are expected to exist in students are an increase in critical thinking skills which are influenced by several factors including the center of learning is in the student, student-centered learning will require students to be independent in building their own knowledge based on the experience obtained (Noorhapizah et al., 2019). Student-centered learning will require independent learners to build their own knowledge based on the experience gained (Noorhapizah et al., 2022)

Critical thinking is very important in training students to face various problems in daily life. One of the tasks of critical thinking for students is to come up with solutions or ideas to solve everyday problems. According to Meilana et al. (2021: 219), critical thinking is a person's cognitive ability to express something with absolute certainty because it is based on logical reasoning and strong evidence.

According to Lakapu (2020:726), critical skills are thinking skills that have mature concepts, express ideas and logically question everything that is considered inappropriate to focus on what is believed or done. From some of the opinions of experts on the definition of critical thinking above, it can be concluded that critical thinking is a mental process to analyze or evaluate information.

To understand information in depth can form a belief in the truth of the information obtained or the opinion conveyed. The active process shows the desire or motivation to find answers and the achievement of understanding. By thinking critically, you can study other people's thinking processes to find out if the thinking process used is correct (reasonable or not). Implicitly, critical thinking evaluates the implicit thinking of what they hear, reads and examines their own thought process when writing, solving problems, making decisions or developing a project.

The purpose of critical thinking is to test an opinion or idea, including in this process is to make considerations or thoughts. The purpose of critical thinking is to assess a thought, interpret values, and even evaluate the implementation or practice of a thought and value (Cahyani et al., 2021:923).

Learning outcomes are things related to learning activities because learning activities are a process. Learning outcomes consist of all psychological realms. This occurs as a result or impact of the experience and learning process of students in the classroom at school (Nabillah and Abadi, 2019: 660). This is in line with the opinion of Aslamiah et al. (2019) who stated that learning outcomes in a broad sense include cognitive, affective, and psychomotor fields. Learning outcomes in students are changes that occur in students, both those related to aspects of attitudes, knowledge and skills as learning outcomes.

According to Benjamin S. Bloom with the Taxonomy of Education Objectives (Nabilla and Abadi, 2019: 660), it is also mentioned that educational objectives are divided into 3 types, namely consisting of cognitive, affective, and psychomotor domains.

Cognition is a learning domain that includes six levels, from C1 to C6, which refers to the ability of an individual's thought process. At the C1 level, individuals are able to remember basic information, while at C2, learners are able to understand more complex concepts. C3 involves applying knowledge in different contexts, while C4 involves the ability of individuals to analyze information to draw conclusions. In C5, individuals are able to evaluate arguments or ideas given, and the highest level of C6, involves the individual's ability to create new concepts or works based on deep understanding (Juwantara, 2019: 26).

According to S. Bloom (Magdalaena et al., 2021:50), the cognitive domain is the domain of mental activity (brain) owned by a student consisting of memorizing/remembering (C1), understanding (C2), applying (C3), analyzing (C4), evaluating (C5), and creating (C6).

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Affective involves emotional and attitude aspects in learning, at the A1 level, individuals show awareness of the values or attitudes that are necessary in the learning process. A2 involves acceptance of these values. A3 includes responses that reflect a commitment to those values, while A4 involves organizing behavior based on those values. A5 involves internalizing these values in everyday behavior patterns (Sitompul, 2021: 45).

Psychomotor is concerned with physical skills and movement. At the P1 level, individuals show awareness of basic motor skills. P2 involves the use of those basic motor skills in a simple setting. At the P3 level, individuals can coordinate motor movements in more complex contexts. P4 involves adapting motor movements to changing situations (Suandi, 2022: 130).

The PANTING learning model is a combination model of Problem Based Learning, Number Head Together, and Talking Stick. Researchers hope that this model can improve students' activities, critical thinking skills, and learning outcomes in mathematics subjects. The name of the PANTING model is taken from one of the typical music of South Kalimantan, where the musical instrument is often used for entertainment. With that, it is hoped that this PANTING model will make students happy and not feel bored during learning. The PANTING model is able to increase student interaction and cooperation, improve critical thinking skills so that it can improve student learning outcomes in mathematics learning.

The use of this model is able to make students active, cooperation becomes better, can give students a clear understanding of a problem well, and stimulates critical thinking that can be useful for the learning process in the future.

III. RESEARCH METHODOLOGY

The research approach used is a qualitative approach, the qualitative approach is a research method that produces a research analysis procedure that seeks to build people's views in detail and is carried out on conditions that are natural in nature described in the form of words. The type of research used in this study is Classroom Action Research (PTK). Classroom action research is a form of scientific and methodological study or activity carried out by teachers in the classroom using actions to improve learning processes and outcomes (Mahsup et al., 2022: 484).

This class action research was carried out in Class VB of SDN Telawang 3, in semester 2 of the 2024/2025 school year. This school is located at Teluk Tiram Darat Gg. Pendamai RT. 09 No. 17, Telawang, West Banjarmasin District, Banjarmasin City, and South Kalimantan 70112. Class VB with a total of 21 students, 10 boys and 11 girls. This research was conducted on Mathematics learning in Class VB SDN Telawang 3 using the PANTING model.

There are several data collection techniques that are carried out, data is taken from observation sheets of students' critical thinking skills during learning and data about learning outcomes are taken from the written learning outcome test scores (evaluation) at the end of each meeting.

IV. RESULT AND DISCUSSION

The results of the research carried out can be seen from the graph below which is a comparison of the results of the implementation of research at meeting 1, meeting 2, meeting 3 and meeting 4 which includes the factors studied, namely critical thinking skills and student learning outcomes.

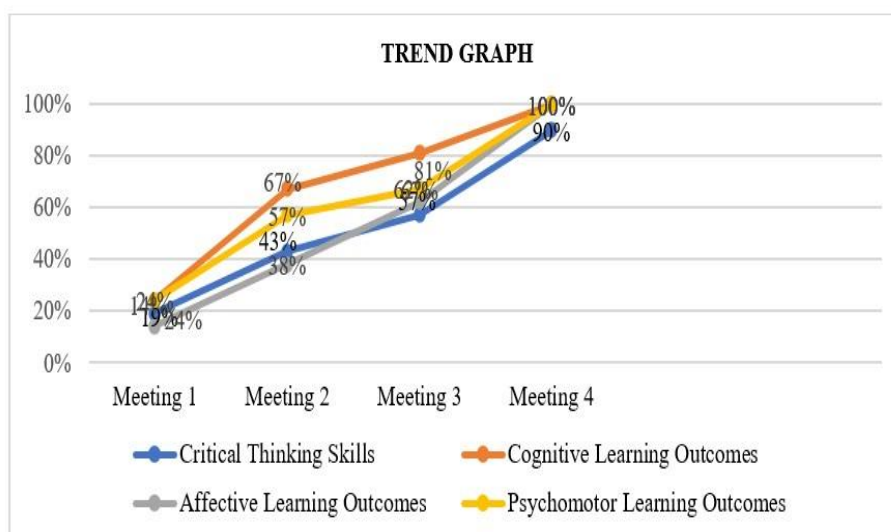


Figure 1. Graph of Critical Thinking Skills and Student Learning Outcomes at 4 Meetings

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The graph above shows an increase in each meeting. At meeting 1 it was 19%, increasing at meeting 2 to 43%. Then at meeting 3 there was an increase to 57%. Meanwhile, at the 4th meeting, there was another increase to 90%. This increase certainly occurs because of various improvements in each learning implementation using the PANTING model on mathematics content.

Improving critical thinking skills at each meeting will certainly affect the learning outcomes of students. This is proven in the graph, where the results of learning the cognitive aspect of meeting 1 were 24%, increasing in meeting 2 to 67%, then increasing again in meeting 3 to 81%, and again increasing in meeting 4 to 100%. In the affective aspect of meeting 1 by 14%, it increased in meeting 2 to 38%, then increased again in meeting 3 to 62%, and again increased in meeting 4 to 100%. In the psychomotor aspect of meeting 1 by 24%, increasing at meeting 2 to 57%, then increasing again at meeting 3 to 67%, and again increasing at meeting 4 to 100%.

Based on the graph, it can be seen that there is a relationship between critical thinking skills and student learning outcomes. When students are able to identify problems, are able to express explanations related to problems and are able to relate problems to their knowledge, are able to determine an action or problem solving step, are able to restate the problems presented, are able to solve problems according to the prescribed strategy and are able to compare the answers obtained, and are able to conclude using good and correct language in a simple way, they will making students' learning outcomes increase at each meeting.

The learning outcomes of students in carrying out learning using the PANTING model in Mathematics in class VB of SDN Telawang 3 Banjarmasin have increased every meeting so that they can achieve the shortness criterion $> 80\%$ of students complete. This increase is reflected because using the PANTING model makes students actively involved in learning and is able to improve students' critical thinking skills in solving problems.

Based on the theory that has been described above and supported by several relevant previous research results, the results of this study show that the PANTING model applied in mathematics learning can improve critical skills and student learning outcomes are declared acceptable

V. CONCLUSIONS

Based on the results of research conducted on students of class VB SDN Telawang 3 Banjarmasin in Mathematics subject, it can be concluded that students' critical thinking skills after using the PANTING model at each meeting have improved so that they obtain the criteria of "Very Critical" and the mathematics learning results after using the PANTING model in class VB SDN Telawang 3 Banjarmasin there is an increase in each meeting and has reached the indicator success that has been determined.

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