# The Mathematics Learning Process in Using Counting Media in Grade 1 Elementary School Students as an Improvement in Student Understanding

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#### Abtract

The purpose of writing this research is to find out that math learning has an important role in shaping students' understanding and numeracy skills. Teachers use various active learning strategies such as math games, math manipulatives, and creative projects to help students understand math concepts concretely. Students are also invited to see the connection between mathematics and daily life situations. This research uses a qualitative descriptive approach to explain the implementation of innovative learning in student character building in junior high school. The qualitative approach is used to describe naturally observed phenomena and to interpret the meaning behind them. The results of the study Mathematics is a fundamental branch of science, covering concepts such as numbers, counting, algebra, geometry, statistics, and calculus. Using symbols, formulas and rules, mathematics allows us to explain and model phenomena in a wide range of fields, from nature to science, technology and economics. More than just a tool for solving practical problems, math is also a means for the development of logical, analytical, and creative thinking skills.

Keywords: Math Learning, Counting Media, Improved Student Understanding

## 1. Introduction

Education is a planned and systematic process that aims to transfer knowledge, skills, values, and attitudes from one generation to the next. Its main goal is to help individuals develop their full potential, prepare them for life in society, and enable them to contribute positively to society. Mathematics needs to be taught because it has a very important role in daily life and in a person's intellectual development.

Mathematics is a branch of science that deals with the study of patterns, structures, spaces, and quantities. In general, mathematics uses symbols, formulas, and rules to explain and model phenomena in nature, science, technology, economics, and various other fields. Mathematics includes concepts such as numbers, counts, algebra, geometry, statistics, and calculus, which form the basis of understanding of regular relationships and the principles that are consistent within them.

The main goal of mathematics learning is for students to understand basic concepts such as numbers, mathematical operations, algebra, geometry, statistics, and probability. A solid understanding of these concepts provides a solid foundation for further mathematics learning. Learning mathematics helps students in developing logical and analytical thinking skills. They learn to identify patterns, formulate problems, and find appropriate solutions by using systematic and critical reasoning. Learning mathematics also involves developing mathematical communication skills. Students are taught to express their thoughts and mathematical solutions clearly and systematically, both orally and in writing. Successful mathematical problems. They are taught strategies to overcome difficulties, solve problems, and take risks in solving mathematical problems.

Learning math has far-reaching and important benefits for students' intellectual development, skills, and understanding. Learning mathematics trains students in logical thinking and reasoning. They learn to identify patterns, construct consistent arguments, and follow systematic reasoning steps. Mathematics aids in the development of strong analytical skills. Students are taught to analyze problems, formulate solving strategies, and evaluate solutions found.

The learning process is a series of mental and physical steps or activities that occur when a person acquires new knowledge, skills, or understanding. Learning is the process by which individuals acquire new knowledge, skills, understandings, or attitudes through experience, observation, instruction, or interaction with the environment or others. It involves relatively permanent changes in behavior, thoughts, or emotions as a result of the accumulation of learning experiences. Individuals receive new information through various means such as hands-on experience, observation, verbal instruction, or reading. The information received is processed and processed in the individual's mind. It involves organizing, interpreting, analyzing, and synthesizing new information with existing knowledge. Learning results in changes in an individual's behavior, thoughts, or emotions. This could be the development of new skills, a deeper understanding of concepts, or a change in attitudes and values. Learning can be conscious or unconscious, and it can occur in a variety of contexts, including at school, at work, in social interactions, or through personal experiences. It is a dynamic and continuous process throughout a person's life, where individuals continue to develop the knowledge, skills, and understanding to face challenges and meet their needs in daily life.

The learning process is a series of steps or activities that occur when an individual acquires new knowledge, skills, or understanding through experience, observation, or instruction. The process begins with the receipt of new information. This information can be obtained through various means, such as reading, listening, observing, or experiencing it firsthand. The process begins with the receipt of new information. This information can be obtained through various means, such as reading, listening, observing, or experiencing it firsthand. The process begins with the receipt of new information. This information can be obtained through various means, such as reading, listening, observing, or experiencing it firsthand. The processed information is then stored in short-term or long-term memory. This process involves establishing relationships and connections between new information and existing knowledge. At this stage, individuals try to understand and develop an understanding of the information that has been processed. They associate new information with existing concepts and seek meaning from that information. The information understood is then applied in various contexts or situations. Individuals try to use new knowledge or skills in problem-solving or in real-life situations.

Problems students often face in learning math Some students may have difficulty performing basic math operations such as addition, subtraction, multiplication, or division. These issues can affect their ability to solve more complex problems.

It is important to identify the root cause of math learning difficulties in students specifically. Do they have trouble understanding basic concepts, numeracy skills, or contextual use? By knowing the cause, you can design the right intervention. Use an active, problem-based teaching approach to make math more engaging and relevant for students. Provide varied math challenges and allow students to apply the concepts they learned in real-life situations. Use a variety of learning strategies and resources to match students' learning styles and needs. For example, some students may be more responsive to visual learning while others may prefer auditory or kinesthetic learning.

#### 2. Method

This study uses a qualitative descriptive approach to explain the implementation of innovative learning in the formation of student character in junior high school. A qualitative approach is used to describe naturally observed phenomena and to interpret the meaning behind them. Qualitative research seeks to reveal the activities carried out and their impact on students' lives through narratives. This study also aims to provide an overview of qualitative descriptive research methods, data analysis used, steps taken, and strengths and weaknesses related to qualitative approaches in research.

## 3. Results and Discussion

Mathematics is a branch of science that deals with the study of patterns, structures, spaces, and quantities. In general, mathematics uses symbols, formulas, and rules to explain and model phenomena in nature, science, technology, economics, and various other fields. Mathematics includes concepts such as numbers, counts, algebra, geometry, statistics, and calculus, which form the basis of understanding of regular relationships and the principles that are consistent within them. Mathematics not only serves as a tool for solving practical problems, but also as a means for the development of logical, analytical, and creative thinking skills. Thus, mathematics is not only applied in various contexts of daily life, but also becomes an important foundation in the development of science and technology and problem-solving in various fields.

In elementary school, mathematics is taught as one of the important core subjects. At this level, the main goal of teaching mathematics is to build a solid foundation in understanding the basic concepts of mathematics and develop logical thinking as well as analytical skills. Students are introduced to basic mathematical concepts such as numbers, counting, basic arithmetic operations (addition, subtraction, multiplication, division), simple geometry, and measurement. Teachers use a variety of active learning strategies such as math games, mathematical manipulatives (e.g., building blocks, coins, or solid geometry), and creative projects to help students understand mathematical concepts concretely. Teachers help students to see the connection between mathematical concepts and daily life situations. For example, they teach how to count money, measure objects around them, or use an understanding of geometry to understand shapes in their environment. Nowadays, technology is often used in teaching mathematics in elementary schools. Teachers use interactive learning software, math apps, or educational games to make math learning more engaging and interactive for students. Students are evaluated periodically to monitor their progress in understanding mathematical concepts. Teachers provide constructive feedback to help students improve their understanding and identify areas that need additional attention. Teachers encourage students to develop problem-solving skills by providing varied mathematical challenges and inviting them to think creatively in finding solutions.

Mathematics provides the basis for introducing numbers to students. Through mathematics, students learn to recognize and understand numbers and represent quantities with numerical symbols. Mathematics helps students develop basic numeracy skills such as addition, subtraction, multiplication, and division. Through mathematical concepts, students learn how to use numbers and mathematical operations to solve counting problems. Mathematics helps students understand basic concepts related to counting, such as place values, number sequences, and relationships between numbers. This helps students build a strong foundation in arithmetic. Mathematics helps students see the connection between counting and real situations in daily life. Students learn how to use counting skills to measure objects, count money, divide groceries, and perform other practical tasks. Mathematics also helps students understand fundamental geometric concepts, such as shapes, sizes, and spaces. Through these concepts, students can develop an understanding of spatial relationships and build their visual-spatial skills. Mathematics helps students develop logical and analytical thinking skills that are important in arithmetic. Students are invited to solve math problems in a systematic and critical way, using logic to identify patterns and find the right solutions. Atematics can be strengthened with supporting technologies such as interactive learning software or math apps. This technology helps students in understanding mathematical concepts in an engaging and interactive way.

In mathematics learning, there are several important components that play a key role in ensuring students' understanding and skill development. Mathematical Concepts: This is the core of mathematics learning. Mathematical concepts cover topics such as numbers, mathematical operations (addition, subtraction, multiplication, division), geometry, algebra, statistics, and more. Students must understand these concepts in depth to build a strong foundation in mathematics. Problem Solving: The ability to solve problems is one of the key components in math learning. Students must be able to identify problems, formulate solving strategies, apply relevant mathematical concepts, and evaluate solutions found. Logical Thinking Skills: Learning math helps students develop essential logical thinking skills. They learn to identify patterns, apply the rules of logic, and perform systematic reasoning in solving mathematical problems. Communication Skills: Students need to be able to communicate their mathematical thoughts clearly and precisely. This includes explaining the steps to solve the problem, providing reasons or evidence for the solutions they find, and collaborating with fellow students in math discussions. Uses of Mathematical Representations: Mathematical representations include graphs, tables, diagrams, geometric models, and more. Students should be able to use these representations to visualize mathematical concepts, organize information, and present solutions effectively. Numeracy Skills: Basic numeracy skills such as addition, subtraction, multiplication, and division are essential components in math learning. Students must master these skills to be able to solve more complex mathematical problems. Use of Technology: Technology such as math software, apps, and digital learning tools can be used as an essential component in modern math learning. Technology helps to enrich students' learning experience and provide an

interactive and dynamic environment. Metacognitive Skills Development: Students need to develop metacognitive skills, which are the ability to understand and control their own thought processes. This includes the ability to monitor their understanding, identify difficulties, and use the right strategies in solving problems.

#### 4. Conclusion

Mathematics is a fundamental branch of science, covering concepts such as numbers, counting, algebra, geometry, statistics, and calculus. Using symbols, formulas, and rules, mathematics allows us to explain and model phenomena in a variety of fields, from nature to science, technology, and economics. More than just a tool for solving practical problems, mathematics is also a means for the development of logical, analytical, and creative thinking skills. In elementary school, mathematics learning has an important role in shaping students' understanding and numeracy skills. Teachers use a variety of active learning strategies such as math games, math manipulatives, and creative projects to help students understand math concepts concretely. Students are also invited to see the relationship between mathematics and daily life situations. Technology is used as a supporting tool in mathematics learning, providing an interactive and dynamic learning experience for students. In addition, the development of metacognitive skills is also emphasized, allowing students to understand and control their own thought processes in solving mathematical problems. Overall, learning math in elementary school is not only about understanding the basic concepts of math, but also about developing critical thinking, communication, and problem-solving skills that are essential for students' future success.

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