

The Use of Snakes and Ladder Media in Developing Students' Cognitive Development

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Article History	Received : January 16 th 2023
	Revision : February 28 th 2023
	Publication : March 30 th 2023

ABSTRACT

Media is a tool used in teaching and learning activities. With this media, it will make it easier for teachers to convey learning material to students. So that with this media, students' cognitive development will be more well honed. One of the media used is snakes and ladders, which is used in delivering addition and subtraction material in grade 1. The method used is using a qualitative approach with the type of research is a case study with data collection techniques using observation and interviews. The research subject is grade 1 MI Miftahul Huda. And data validity using source triangulation and technical triangulation. The result of his research is the use of snakes and ladders game media on addition and subtraction material gives positive things, namely student cognitive development in grade 1 students of MI Miftahul Huda.

Keyword: Snakes and Ladders Media, Cognitive Development

INTRODUCTION

Children are the baby of every parent, children are small human figures who have a unique nature and a very strong curiosity (Bloom, 2001; Glenn et al., 2013). Early childhood is a group of individuals aged 0-6 years, which at this age is often called the golden age that only occurs once in the development of human life, so it is very important to stimulate the growth of children's brains through child health attention, provision of adequate nutrition and educational services (Alazmah, 2017; Seow, 2018). Child development is all the changes that occur in children that include all physical changes, motor and language skills (de Souza & Veríssimo, 2015; Drange & Rønning, 2020). Each aspect has stages that children will go through. In early childhood, children experience extraordinary growth and development in physical motor, cognitive, emotional, psychosocial and language

skills.

Each child will experience different periods of growth and development, because each individual has a different tempo (time) and development, there are children who experience simultaneous growth and development (stimultan) and there are also children who experience obstacles, both in growth and development, there are also the opposite (faster than after the child), of course this will be quite influential in the future. Cognitive development refers to a child's development and ability to reason (Friantary, 2020; MAHMUD, 2019).

Cognitive is defined as the realm of human knowledge. In its development, human cognitive experiences maturity along with the increase in human age. This stage of development starts from the prenatal period and continues throughout the life cycle (Bandura, 2004; Pereira, 2007). Piaget classifies cognitive development into four stages, namely; (1) Sensorimotor stage from the age of 0-2 years; (2) Preoperational stage from the age of 2-7 years; (3) Concrete operational stage from the age of 7-12 years; (4) Formal operational stage from the age of 12 years-adult (Barrouillet, 2015; Stoltz, 2018).

Cognitive development is related to thinking abilities, such as the ability to reason, remember, memorize, solve real problems, have ideas and creativity (Bhagat et al., 2018; Guez et al., 2021). Cognitive abilities are key to other developments such as emotional development and language development. Behavior and attitudes are also influenced by cognitive development.

However, cognitive development in every child is not the same. Between one child and another child experiences different developmental cycles. There are children who experience ideal or achieved cognitive development, there are children who experience moderate cognitive development and there are children who experience very weak cognitive development or so-called cognitive development is not achieved. This is influenced by several factors including heredity or heredity, environmental factors, maturity factors, formation factors (formal school and nature around).

Understanding of children's cognitive development is also a guide in determining materials, strategies, models, methods and evaluation techniques in learning. Children will easily understand if the material presented by the teacher uses methods that are in accordance with the child's thinking ability (Friantary, 2020; Sukhanova, 2019).

The use of media and methods aims to make the learning process more effective by involving students in learning activities that can be seen directly by the teacher (Bovill, 2020; Gooi & Sommerfeld, 2015). One of the media used by teachers is snakes and ladders media. Snakes and ladders are a form of game made of mattresses, for children played by two or more children. Learning media with

snakes and ladders game is an interesting way that can be used in learning activities in order to achieve a learning goal. Where in the use of snakes and ladders media this aims to understand the addition and subtraction of students. With this snakes and ladders media, it will make students feel happy to learn addition and subtraction (Andrews et al., 2018; Setiawan & Mitra Zuana, 2018).

Judging from the conditions in the field, that there are still children who still do not understand the addition and subtraction contained in mathematics lessons. Not a few children think that math is difficult. So there needs to be created from a teacher to make students feel happy to learn math.

From the observations that have been made, it comes to a conclusion can be drawn, that in learning you should use learning media that is attractive to children, namely by using snakes and ladders media. So with this, a research was conducted entitled: "The Use of Snakes and Ladders Media in Developing Student Cognition at MI Miftahul Huda Mlokorejo".

METHOD

In this study, researchers used a qualitative (descriptive) research approach. As the definition of qualitative research defined by Denzin & Lincoln, qualitative research is research that uses a natural setting with the intention of interpreting phenomena that occur and is carried out by involving various existing methods (Amis, 2011).

The type of research used is a case study. Wibowo and Winkel in Fitrah and Lutfiyah, case study is a method to study the situation and development of a student in depth with the aim of helping students achieve better completion (Suwendra, 2018).

The research subjects were Mrs. Suhartatik (homeroom teacher of the 1st grade under study), and grade 1. And this research was conducted at MI Miftahul Huda Mlokorejo located on Jl. Sunan Bonang, Mlokorejo Village, Puger District, Jember Regency.

The data collection technique was carried out to obtain complete data using observation and interview methods. The observation method is a direct observation activity carried out by researchers on an object with events that occur and appear during the research. While interviews in this study are data collection activities in research conducted by asking questions to informants in order to obtain complete and complete information.

Furthermore, the data obtained is analyzed by condensing the data, processing the data, and drawing conclusions. Apart from the sources of observation and interviews above, the data sources used in this research are also in the form of literature consisting of journals, books, articles or other sources of documents that

are more relevant. The results of this analysis are then associated with previous research that is relevant to the issues raised. The final result of this research is a written report.

In addition, the validity of the data carried out in this study also aims to be able to prove whether the research conducted is scientific research, and at the same time to test the data obtained. The validity of the data used is triangulation, namely checking data from various sources. Triangulation itself is divided into two parts, namely source triangulation and technical triangulation.

RESULT AND DISCUSSION

The learning process is essentially a communication process in teaching. The presence of media has an important meaning. Because in these activities the vagueness of the material presented can be helped by presenting the media as an intermediary, the complexity of the material to be conveyed to students can be simplified with the help of the media.

The results of the research obtained the use of media in Madrasah Ibtidaiyah Miftahul Huda Mlokorejo is still very minimal used in the learning process. We encountered several problems in the learning process at that time, where the teacher in explaining only sat and explained, without any practice or explaining on the blackboard, so tended to lecture in the classroom.

The lesson at that time was a math lesson. So we saw that the children did not really understand what the teacher had explained. While mathematics itself is very important and necessary to train brain skills, to analyze and also solve problems. mathematics is not just something related to numbers and numbers. So we feel that this requires special attention so that lecture-style learning can turn into more exciting learning for students.

Our statement above is reinforced by the results of our Pre-observation at that time, we had the opportunity to conduct Pre-observation, at that time we made a game for grade 1 children, coincidentally the game we played was related to Mathematics, and most of the children could not answer correctly, even they were still confused about how to calculate.

Departing from the case we tried to introduce to the child, with the use of snakes and ladders media in order to develop students' cognitive. this educational game by modifying from the snakes and ladders game where there is up if it stops on the ladder picture, and there is down if it stops on the snake picture. The rules in the game we adopt that if the dice are thrown showing the addition symbol means up or added, if it shows a subtraction symbol means down or reduced. By introducing this simple concept to children, it is very easy for students to understand addition and subtraction material.

The above statement was strengthened by Najwa and Habibi. They revealed.

"We like it mom, learning is more fun, we can jump around too, so it's exciting mom, so I already know now mom, what is addition and subtraction."

We tried to test the children again without using the media, and the results were that they were able to count using their fingers while remembering the concept of the snakes and ladders game, that if you add it is counted forward, if you subtract it is counted backward.

Based on the results of the study, the use of snakes and ladders game media on addition and subtraction material gave positive things, namely student cognitive development in grade 1 students of MI Miftahul Huda. In addition, teacher performance and activities in learning are carried out for the better. The following is a discussion of the results of the increase.

In this study, the planning stage was carried out by preparing lesson plans, making evaluation questions, preparing snakes and ladders game media and assessment instruments. Assessment of student activity consists of three aspects, namely understanding, remembering, and reasoning.

In the first round there were 4 students out of 29 students who had not reached the expected target, there were 3 students who got an overall score of 7 with good criteria and 1 student who got an overall score of 5 with sufficient criteria. The reason is that students do not understand in working on the worksheet and in carrying out the snakes and ladders game do not understand the questions.

In the second round, there were 3 students who got an overall score of 7 with good criteria, the cause was the same due to lack of understanding in solving the questions. In the third round, 28 students have reached the expected target, namely 26 students stated with very good criteria.

DISCUSSION

The word media is the plural form of "Medium", which literally means intermediary or introducer. Several experts provide definitions of learning media (Eliyawati et al., 2020).

Schramm suggests that learning media is a messenger technology that can be utilized for learning purposes. In particular, the word can be interpreted as a communication tool used to carry information from one source to the recipient (Kusumah, 2008).

According to Gerlach and Ely (1971), media when understood broadly are people, materials or events that build conditions that make students able to acquire knowledge, skills or attitudes. So that teachers, textbooks and the school environment are media (Arsyad, 2015).

Learning media is media that carries messages or information that has

instructional purposes or contains teaching purposes. Learning media includes tools that are physically used to convey the content of teaching materials consisting of books, tape recorders, cassettes, video cameras, video recorders, films, slides (pictures), photos, pictures, graphics, television and computers.

In conclusion, media is anything that can be used to channel messages from sender to receiver. So that it can stimulate students' thoughts, feelings, attention and interests in such a way that the learning process occurs.

Through our observations and interviews, we get information that the learning media applied in this Madrasah Ibtidaiyah is still very minimal applied to students. with the snakes and ladders game media, it is hoped that it will make it easier for children to understand learning materials in the field of mathematics with addition and subtraction material. students feel bored in the learning process.

Snakes and ladders games can be integrated in math subjects because in this game students recognize the concepts of addition and subtraction. The concept of addition and subtraction is introduced to students since they are in grade 1 elementary school. Students learn addition and subtraction of numbers 1 to 100. In teaching this material the teacher must turn it into a real context that is easy for students to understand. This material is still in an abstract form, so most students cannot answer this question directly. The snakes and ladders game is a game that can be played by two or up to four students. Each student has a part of the position, and he/she gets a chance in turn to shake the dice. For each number that comes out of the die, the student is allowed to move forward by that number. If their position is at the bottom of the ladder, they will move up the ladder and stop at the end of the ladder. Conversely, if when stepping, the position stops at the tail of the snake, it must go down to the head of the snake. So they will use the math process in this game which is addition and subtraction. An example of the application of the snakes and ladders game in this material is for example: 1. a student's position is at number 1, then he throws the dice and gets the number 5, then he moves the position forward 5 steps. At what number will the position stop? The following is the math sentence of the problem $1 + 5 = 6$. 2. A student's position is at number 2, then he throws a dice and gets a number 3, so he moves the position forward 3 steps. It turns out that the student stopped on the stairs so that his position climbed the stairs to the number 46. So how many numbers is the bonus for the student? The following is the math sentence of the problem $2 + 3 = 5$. From the problem, the student gets a position to stop at number 5. However, the position is on the stairs so it must go up to number 16. But the student's position stops at the snake's tail so the position must go back down to 24. So how many numbers are wasted? The following is the math sentence of the problem $45 + 4 = 49$. From the problem the student gets his position stops at 49. But because the position stops at the tail of the snake, the position must

go back down to 24. The following is the math sentence of the problem $49 - \dots = 24$. Through the snakes and ladders game, students are expected to help understand the concept of addition and subtraction of numbers. This snakes and ladders game is also a real model in solving number operations in the form of addition and subtraction of two-digit numbers. Students in learning this material will be more interesting because they can do math activities, besides that all students will be active in learning activities.

The snakes and ladders game can be used for learning media in constructing students' learning experience. This game can also develop the character of honesty values, because it can train students to take sportive actions without manipulating and cheating in playing. In addition, it can train students in dealing with failure and victory.

CONCLUSION

Media is anything that can be used to channel messages from sender to receiver. So that it can stimulate students' thoughts, feelings, attention and interests in such a way that the learning process occurs. The positive thing about using snakes and ladders media for grade 1 is that grade 1 students understand more about the addition and subtraction material that they previously considered very difficult. Moreover, this addition and subtraction material is included in math subjects which they have considered difficult, so that children's cognitive development is not well developed. With this snakes and ladders media, children's cognitive development also develops.

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