

CHARACTERISTICS OF LEARNING MEDIA THAT MOTIVATE LEARNERS

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ABSTRACT

Mathematical learning media is a small part of learning activities that can be observed directly by students. There are even learning media that can be operated directly by students in understanding the concept of learning mathematics. Learning that occurs both in the classroom and outside the school can lead to functional interactions between students and teachers. The existence of mathematics learning media is expected to be able to add positive interaction in motivating students in learning. Motivation in education can be interpreted as scaffolding in understanding and applying the accepted learning concepts. This study aims to describe and analyze mathematics learning media in motivating learning in the classroom. This research is research with a qualitative descriptive approach with data collection techniques in the form of documentation and interviews with the learning media users. The results of this study include mathematics learning media in the way of statistical balls, Uno Cards, Domino Mathematics, Mathematical Ladder Snakes, Trigonometry Magic Circles, Maket build spaces. Mathematics learning media is expected to be able to help students to understand mathematical concepts with objects that can be seen directly. This mathematics learning media as extrinsic motivation in the learning process of students as well as scaffolding in improving students' learning concepts.

Keywords: Mathematics, motivations, media.

INTRODUCTION

The success of the learning process has influenced by many things, including instructors, students, facilities and infrastructure in learning, and motivation to achieve learning goals. Thinking skills in learning mathematics are often formed through activities (Mursalin et al., 2018). Designing mathematics learning need some preparation before start it (Damayanti & Mayangsari, 2017). Thinking is a higher cognitive activity that involves lower cognitive processes as well as concepts to resolve problems that can see from visible behavior and outcomes from the performance of an anyone (Prayitno et al., 2018). Teachers or later referred to like teachers who present the material must be competent in giving the content, whether it is from the character, attitude that will influence the nature of the atmosphere in preparing what method is appropriate to deliver the material. While students also have internal factors that can affect the success of learning. The elements of students include the intelligence of students, the readiness of students, comfort in education, and the interest of students in learning.

The development of the times requires humans to be more creative, including teachers as instructors. Creative in developing and applying the knowledge he has learned in teaching-learning while solving mathematical problems. Teachers who have a high professional spirit will

design creative learning by using means and teaching aids to arouse students' interest and motivation in learning mathematics and then lead to the success of learning goals, namely student achievement. The development of mathematics learning is needed because of the involvement of the concept of learning in students, who later will also take part in further development of mathematics or in applying mathematics to daily life. In connection with the selection of sources / media of learning Government Regulation Number 19 of 2005 Article 42 (1) states that "Every education unit must have facilities that include furniture, educational equipment, educational media, books and other sources, consumables, and equipment others are needed to support an orderly and sustainable learning process ". According to Kemp & Dayton (in Arsyad, 2003: 22), the media has benefits as a medium that can attract attention, provide experience to students to interact directly to give a positive attitude to students to learn independently with the teacher as a facilitator.

Motivation is one of the measuring tools for students' success in processing the learning process tailored to the learning objectives achieved through the learning achievement of the students themselves. Motivation is divided into 2, namely intrinsic motivation, namely motivation from the students themselves, while extrinsic motivation is motivation obtained from outside other than those of the students themselves. This motivation is indeed not easy to generate; there needs to be a trigger that can produce good motivation so that it can improve the learning achievement that will be achieved. Therefore it is necessary to have creative development in the learning process so that it makes the learning process meaningful.

LITERATURE REVIEW

Learning Media

The word media comes from Latin, is the plural form of the word "medium" which means "introduction" or "intermediary" the term refers to something that brings information between the source (the sender of the message) and the recipient of the word (Smaldino et al., 2005). Various types of learning media include:

a. Text

Text is the most commonly used media. The writing is alphanumeric characters (numbers and alphabets) that may be displayed in various formats such as books, posters, whiteboards, computer screens, internet articles.

b. Audio (sound)

These are also commonly used media. Audio includes all forms that can be heard, such as people's voices, music, mechanical sounds (running a car engine) and so on.

c. Visual

Visuals are usually used to promote learning which includes diagrams on posters, pictures on whiteboards, photos, graphics on books, cartoon images and so on.

d. Moving media

This is a medium that shows a move, including video, animation, youtube and so on.

e. Media that can be manipulated

Media that can be managed is a 3-dimensional object and can be touched and held by students. Example: media that can be shaped in the form of cube skeletons or frog jumping games.

f. Person

People are intermediaries for delivering messages. Therefore people who are included as learning media are teachers, students or experts in specific fields (SME - Subject Matter Expert). Students can learn from teachers, other students and other adults.

Understanding media varies according to experts. Gagne in Arda (2015) states that media are various types of components in the student environment that can stimulate them to learn. Meanwhile, the National Education Association in the United States defines media in the scope of education as all things that can be manipulated, seen, heard, read or talked about and the instruments used for these activities (Arda, 2015). Therefore media can be defined as something that can be used to convey "pesandan" can stimulate thoughts and feelings of students so that motivation arises to learn. The emergence of learning motivation is very influential in the achievement of learning goals, namely student learning achievement.

The use of media in the learning process can attract and motivate students. This is in line with Arsyad's (2003: 26) opinion that:

1. Teaching media can clarify the presentation of messages and information to facilitate and improve learning processes and outcomes.
2. Media can develop and direct children's attention so that it can lead to learning motivation, more direct interaction.
3. Teaching media can overcome the limitations of the senses, time and space.
4. Learning media can provide students with similar experiences about events in their environment, and enable direct interaction with the teacher, community and environment, for example through field trips, visits to museums or zoos.

METHODOLOGY

This study used the descriptive qualitative method. According to Bogdan and Taylor (in Moleong, 2010: 4) qualitative methods are research procedures that produce descriptive data in the form of written or verbal words from students and observable behaviour. Sources of research data are categorised into two, namely primary sources and secondary sources. Primary source, which is the source of data obtained from the parties studied namely students who are using the learning media. In this study primary data sources can be derived from observations of students who are using the learning media, to filter the motivation data obtained by students after using the learning media. Secondary sources are sources of data collected from parties outside the research target. In this study, data sources can be received from the makers of learning media used by these students. Data collection techniques used by researchers are interviews, documentation and observation. Data analysis in this study, namely the process of systematically searching and compiling data obtained from interviews, field notes, and literature, by organizing data into categories, describing it into units, synthesizing, composing into patterns, choose what is important and what will be learned, and make conclusions so that it is easy to understand by yourself and others (Sugiyono, 2010).

RESULTS AND DISCUSSION

Learning media is a tool to help the learning process by the goals expected by the teacher. Some of the learning media that will be discussed are teaching media that have been tested on students with the following results:

Statistics balls

Statistics balls or abbreviated as "statistical bobo" are the media to explain statistical concepts, namely the mean, median, and single data mode in the SMP statistical material. This media is a medium that can be manipulated because students can manipulate data in the form of values with balls that will be inserted on the available poles.



Figure 3.1 Statistics Balls

The disadvantage is that the columns are less numerous so the datum presented is also limited. But if only to explain the concept of the mean, median, the single data mode is sufficiently representative. Henceforth if many data more than the number of available poles can be calculated by a formula that has been proven right through experiments on statistical balls.

Students express the motivation given by this teaching aid is that they can practice the process of calculating the mean, median and mode with a concrete datum directly. Because they can hold the original balls, they can not only imagine how the formula works but can apply through real objects. Students have motivated that this statistical learning is effortless because they have practised it, then if the datum is given more than the existing columns, then they swiftly use the appropriate formula to answer the desired question. Students also feel that they are no longer hesitant to choose the right method to solve the given problem, whereas usually the learner's weakness is confused to use which formula to solve the problem that must be answered. They claimed that they were not confused with which methods because they already understood the concept they had received by practising statistics. Following the ideas that are well received by students is a function of learning media as well as motivation for students to believe that mathematical formulas are not only challenging to memorise but as a tool to facilitate more data usage. Extrinsic motivation given by this learning media is to make students more motivated to learn to solve statistical problems that are tested correctly.

Uno Card

The Uno card presented is a card that contains math questions for students who are in high school. Each card consists of several colours that are adapted to the mathematics learning

material. Uno card learning media also includes math game props. For the game to run smoothly the teacher should share the group heterogeneously to play this uno card game. The teacher acts as a judge or as a scorer. In running this game should be formed by heterogeneous groups so that students work together in completing cards that must be answered. With this game, students are expected to be able to actively use the concept of learning material that has been received in answering the questions contained in the uno card. This game must also be supervised by the teacher to find out the truth and score, but sometimes it can also be done to fill the void of class hours guided by students who have more abilities than other students.



Figure 3.2 Uno Card

According to information from students who have used this card, by playing this no math card game, they feel motivated because they find a new sensation of learning mathematics even though they are still struggling with formulas and solving problems. The latest sensor is by working in groups, students who are less understanding can learn to understand the mindset of other students in the team to find out the ways and mentality to solve the problems in the uno card. Not all students are experts in working on the questions on the UNO card, that is why they are motivated not only because of the learning media but because the cooperative activities carried out in the group make students enthusiastic about completing the questions on the UNO card.

Domino Math

This domino game is how to play it the same as regular domino games; it's just that what distinguishes it is this math domino contains math questions for students who are in high school. Students are expected to be good at working on math problems, but the tendency of lazy students to work on math problems can be overcome by using a media game with dominoes.

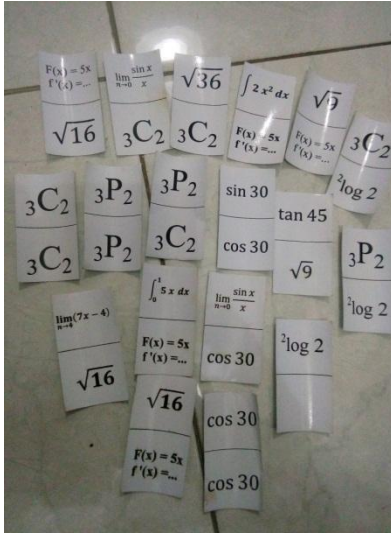


Figure 3.3 Domino Math

This game is possible so that students are not bored by answering questions in that way. Adapting the domino game, as usual, this game is called domino math because the domino contains math problems. In practising this game can be done in groups to facilitate the success of this game.

Snake Ladder Math

This math ladder snake is intended for elementary school students. The material made on the snake and ladder game media is an integer operation. The game can be done in groups with game systems such as playing snakes and ladders usually. This game uses dice and pawns to represent running it. Each group is represented by a pawn that is run to find out which group first reached the finish post. In snakes and ladders games, usually each post contains only numbers, but in this snake ladder math game, there are questions about operating integers in certain jobs. If the participant of this ladder snake happens to be on the dice that has been drawn in the position with the math problem, then the participant is given a grace period (adjusted to the jury/teacher's provisions) to work on the questions. The teacher can be a judge in this game if the participant cannot answer the items on the snake ladder post that has a consequence, the participant must return to the original post position.



Figure 3.4 Snake Ladder Math

Like regular snake ladder games, this game makes students feel thrilled. This prepares students motivated to learn harder, especially if given an appropriate reward. This game is expected to make students more motivated to calculate correctly in the time specified. Given that the precision of integer operations is needed in subsequent calculations. So it is necessary to do the exercises that are contained in the form of a game so that students do not feel boredom, as well as being able to improve the competitive spirit and work together if the game is held in groups.

Trigonometric Magic Circles

This trigonometric magic circle contains the formula for the amount and difference of trigonometry in high school. The problem when students learn trigonometric material at this high school level is memorising the trigonometric equation. To overcome the difficulties experienced by students, the learning media of this trigonometric magic circle helps students learn the formula.



Figure 3.5 Trigonometric Magic Circles

As a formula memorising tool, learning media in the form of circles containing trigonometric formulas are needed by students in solving trigonometric problems. There is no doubt that many students do not like the trigonometric material because some of the students are not motivated to learn the trigonometric material. With this learning media, at least students can change their memorization patterns with the help of this magic circle so that trigonometric formulas are not only memorised then easily forgotten but are expected to be memorised meaningfully adjusted to the needs in solving problems.

Model Build Space

This model of building space is a real learning medium that can be seen and held by students. The learning media is suitable for use in students who are learning to wake up in a room and wake up flat. Physical characteristics can be seen from the build-up that feels like the model builds this space. Intentionally, this model of the building is designed so that students can see and touch the room and build up in the model. Students can concretely compare what and how the difference is between building a place and building a flat.



Figure 3.6 Model Build Space

Students are motivated by this learning media because they can see and touch wake up space in a concrete manner. Without this learning media, students can only see the building of the existing textbooks, and if there are students who are less developed their spatial abilities, the learners can misinform information conveyed from the book or explanation from the teacher.

CONCLUSIONS

Conclusions that can be drawn from this study are (1) Learning media is one tool that can help students to understand the concept of mathematics learning better. Some types of media include books (text), audio, visuals, media that can move, media that can be manipulated, and people. This learning media requires people as judges as well as determining the success of learning media in completing teaching objectives. (2) The use of teaching media is adjusted to the learning material, the needs of students, as well as the characteristics of the learning media provided. The suitability of these three things can increase students' motivation in learning and

solve the given questions. (3) Motivation in education is needed so that students feel comfortable and the teaching carried out is no longer boring.

Suggestions for certain parties to be considered and considered after seeing the results of this research are as follows; (1) Teachers are advised to be more careful, thorough and precise in determining the learning media in the implementation of classroom learning, so that the learning outcomes of students can be achieved in accordance with the learning objectives desired by the teacher both in knowledge and attitude, (2) In general Policyholders in schools are expected to be more severe in adding learning media facilities to facilitate teachers in providing learning in the classroom, given that the learning process is more interesting if accompanied by teaching media that can increase students' motivation in the learning process and in improving the learning objectives to be achieved.

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