Application Of The Use of Lego Game Learning Media In Improving Student Mathematics Understanding On Fractional Material In Class VII MTs Islamiyah Ciomas

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Abstract: MTS Islamiyah Ciomas is one of the educational forums with the status of a foundation ownership. MTS Islamiyah Ciomas is located in Ciomas District, Serang Regency. The purpose of the dedication program to the residents is to socialize the learning media of lego games in increasing students' mathematical understanding of fractional material. The feud faced by the school is teachers' lack of knowledge regarding learning media or teaching aids that can be used during learning in mathematics subjects. The participants in the introduction activity were all MTS Islamiyah Ciomas teachers. the sense of measurement to measure the level of success of community dedication activities is a questionnaire of participants' understanding. The application steps are initiated by preparing, applying community service activities, reflection and evaluation.based on the analysis of the percentage level of understanding of participants in the lego game learning media in increasing students' understanding of fractional material.

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A. INTRODUCTION

The existence of schools in the community is needed. School is a place to change behavior so that knowledge, psychomotor and character can be built and support future development. MTS Islamiyah Ciomas , for example, is one of the educational institutions whose existence is needed by the surrounding community. The issue obtained from the survey in the field is that at MTS Islamiyah Ciomas information was obtained The vision of the school is to produce alums who are dignified and outstanding in all fields.so that the vision was realized and implemented, MTS Islamiyah Ciomas must realize the mission first, namely (1) realizing effective learning; (2) sharing the potential and creativity of students optimally; (3) providing religious values and personalities of students' and (4) polite behavior, a sense of kinship in realizing school culture. In realizing the vision and mission, one of the efforts that needs to be done means increasing teacher knowledge about learning methods, strategies, techniques, examples and learning approaches. The principal of MTS Islamiyah Ciomas said that most teachers at MTs Islamiyah Ciomas still lack knowledge about approaches, methods, techniques, models and learning tactics that can be applied during the teaching and learning activity process. Furthermore, the school principal said that another problem teachers at MTS Islamiyah Ciomas faced was teachers' lack of knowledge about using the environment more

or less, the senses of teaching aids available at school as learning media. As we know, learning media does not have to be of high selling value to be used for learning, but we can use the environment more or less as a learning medium as long as the media is still closely related to using the material taught. This problem is the problem of teachers at MTS Islamiyah Ciomas, therefore we need to take action in the form of socialization so that one of the conflicts at MTS Islamiyah Ciomas can be resolved. Changes in learning patterns are urgently needed to make updates in a conventional learning system that is considered outdated and irrelevant to the dynamics of the increasingly rapid times, this is triggered by the development of science and technology (Yusrizal, 2017). Hamalik (Meilani Safitri, 2013) suggests that utilizing learning media during teaching and learning activities in class can increase students' desire and interest in learning, increase learning motivation, and stimulate learning activities for the better, and foster positive influences on students' psychological development.

The use of media in pedagogy in the classroom is a need that cannot be ignored, considering that the learning process experienced by students is focused on various activities to add knowledge and insight to the provision of life in the present and the future (Mahnum, 2012). Explaining that one of the efforts to encourage motivation and learning outcomes of students is the use of learning media, media from an educational perspective is an instrument that significantly determines the success of the teaching and learning process, because the function of the media dramatically provides its dynamics for learning (Aditya, 2018); (Idzhar, 2016); (Muhammad Darkasyi, 2014). Referring to the statement above, teachers' understanding of the use of learning media needs to be improved again. A professional teacher must find the best way to achieve targets with various learning media (Rahmah Johar, 2008). Learning activities by applying learning media during teaching activities are essential because they can foster active learning (Ahmad Qosyim, 2017). Active learning is in the context of education, namely learning methods or strategies that require student activities and participation as optimally as possible to change their behavior effectively and efficiently in their daily lives (Abdullah, 2016).

Learning activities have been one-way or passive in the field, so only teachers are active while students are passive. Where the teacher explains while the learners as listeners. Such a learning experience will not form a good learning experience for students. Students not being involved in the learning process will cause the knowledge gained is not easy to make in the long term. This of course will affect the development of students' personalities. As required by the 2013 curriculum, students use it to maximize the potential of each student (Wijaya, Sudjimat, and Nyoto, 2016); (Nursikin, 2016). The aspects studied are the potential that students must have among behavioral aspects (affective), knowledge aspects (cognitive) and skill aspects (psychomotor) (Syafi'i, Marfiyanto, and Rodiyah, 2018). These aspects need to be developed to become crucial for students not only in student life as part of the people's origin, but also as a state society. The 2013 curriculum expects the quality of learning obtained to make students more creative, independent, have competitive behavior, innovative, collaboration, high solidarity, tolerance, participating in feeling, and other biological skills. Implementing the 2013 Curriculum is still a significant obstacle that must be addressed, namely the issue of teacher readiness is the key to successful implementation (Sri Budiani, 2017). The use of learning media in learning activities and active learning, because this science

is closely related to using the realization of the vision and mission of the institution.therefore, in this case it is necessary to improve the quality of teachers and increase their knowledge.being another way solution, we apply the Lego Game research learning media program to the people to receive a better understanding. Increase students—fractional Material Mathematics Research at MTS Islamiyah Ciomas

B. METHOD

Mentoring and empowerment activities are philanthropic activities that emphasize developing community initiatives and increasing people's participation into an effort to start the process of social activities in the community in the struggle to improve the situation and conditions of themselves, their families and the environment (Nanis Hairunisya, 2020). The form of assistance in this activity is the socialization of Lego game learning media in the struggle to increase students' understanding of mathematics in the field of emphasis on fractional material at MTS Islamiyah Ciomas. A sense of data collection is needed to determine the purpose of the activity, which the teacher has understood. The sense of data collection used to measure teacher understanding is a questionnaire of understanding of Lego game learning media. The aspects evaluated in this activity are participants knowing the title of the activity, participants understanding the purpose of the activity, participants understanding the 2013 curriculum, participants knowing the definition of cognitive aspects, understanding affective definitions, understanding psychomotor, participants know student problems such as learning difficulties, participants know the causes of student conflicts, participants understand the definition of learning approaches, participants know the difference between learning learner-centered approaches and Teacher-centered, participants understand the form of Lego games, participants have confidence in applying Lego games in fractional material. Our community service activities in improving students' mathematical understanding are as follows:

1. Preparation for Research Implementation

The activity began with conducting a survey first to find out the condition of the school, then an interview was conducted as a situation analysis to find out the problems being faced by MTS Islamiyah Ciomas students and the final stage was choosing the right alternative solution.

2. Socialization and Implementation of Research

Two parties must carry out socialization activities, the first party providing information and the second party receiving information, the activities carried out can be in the form of socialization, (Wardani &; Friska, 2018).socialization is a process by which people achieve specific abilities to achieve organizational goals. Socialization activities provide employees with specific and knowable knowledge and skills used in their current jobs. It should be understood that the socialization process refers to the changes that must occur in participants, basically the poor performance is behani in such a way that it becomes better. Therefore, the approach used in this activity is to use the socialization method.

In detail, the implementation of service activities at this stage is in the form of conveying information related to learning media that can improve students' mathematical understanding

at MTS Islamiyah Ciomas , namely lego game learning media. The stages of implementation of activities are as follows:

    a) Socialization, which provides information on learning media for lego games and definitions of mathematical understanding and learning approaches.

    b) Demonstration, which is doing direct practice of lego games on fractional material.

    c) At this stage, the executor allows participants to calculate addition and subtraction of fractions using lego games.

3. Evaluation

The evaluation was carried out to determine the achievements of lego game learning media activities that have been carried out and to improve community service programs related to lego game learning media in improving mathematics understanding of MTs Islamiyah Ciomas students.

C. RESULTS AND DISCUSSION

1. Preparation for Research Implementation

Preparation of research activities will be conducted surveys and interviews conducted to obtain initial issues in the form of school environment requirements, as well as the readiness of teachers and students. as will happen general news obtained information most teachers at MTS Islamiyah Ciomas still lack knowledge about approaches, methods, techniques, models and learning tactics that can be applied during the process of teaching and learning activities; Lack of teacher knowledge about the use of the environment is more or less, the teaching aids available at school become learning media. This problem is the problem of teachers at MTS Islamiyah Ciomas, therefore the research team from Universitas Shining the Nation needs to take action in the form of introduction so that one of the conflicts at MTS Islamiyah Ciomas can be resolved. In the second month, the research team discussed determining other perfect ways to find solutions to problems faced by partners. In the 2nd and 3rd months the research team made preparations in the form of preparing permits, completing materials, arranging instruments, preparing tools and materials needed.

2. Socialization and Research

The activities at this stage began by providing participants with definitions of learning media, various learning media, Lego game learning media, differences in methods, strategies, and learning approaches. This activity is called socialization activities. The Bina Bangsa University Research Team provides explicit material about learning media Lego games are a tool to increase students' mathematical understanding, reveal how to use Lego games in addition and subtraction materials, briefly explain fraction material, discuss and question and answer with participants related to problems faced by students in fractional material. During the introduction application, participants were very enthusiastic about participating in the activity, this can be seen from the participants who actively did questions and answers using the lecturer team. To enhance participants' understanding of how to use Lego games, the Bina Bangsa University Research Team practiced using Lego games. Next is to demonstrate lego game learning media on fractional material, demonstrate addition and subtraction of fractions

through lego game learning media. At the end of the activity, participants experimented with solving addition and subtraction problems using Lego learning media. In detail, the implementation of service activities in this term is in the form of conveying issues related to Lego game learning media on improving students' mathematical understanding of fractional material.

3. Evaluation

The evaluation was carried out to determine the achievements of lego game learning media activities that have been carried out and to improve community service programs related to lego game learning media in improving the mathematical understanding of MTS Islamiyah Ciomas students. At the evaluation stage, an instrument was used to collect data to determine participants' understanding of lego game learning media in improving students' mathematical comprehension skills. Data collection tools in the form of questionnaires of understanding of participants of lego game learning media as described as follows:

Table 1. Instrument of Understanding of Research Activity Participants

| No.	Description
1.	I am aware of research activities
2.	I know the purpose of the study
3.	I understand the demands of the 2013 curriculum
4.	I know the definition of cognitive, affective, psychomotor aspects
5.	I understand the problems students face
6.	I know the cause of the problems students face
7.	I understand the definition of lego games
8.	I know the difference between student-centered and teacher-centered approaches
9.	I found out how to use the game
10.	I could use lego games on every fractional material and other material.
11.	I believe that lego games can motivate student learning
12.	I believe lego games can improve students' understanding.

Based on the observations, data on participants' understanding of PKM activities were obtained as follows:

Table 2. Participants' Understanding of Research Activities

Participant Order Number	Percentage
U-1	80,00%
U-2	86,67%
U-3	85,00%
U-4	86,67%
U-5	90,00%
U-6	86,67%
U-7	83,33%
U-8	86,67%
U-9	95,00%
U-10	91,67%
U-11	95,00%

U-12	73,33%
Total	86,67%

The following is a diagram of the level of participants' understanding of research activities
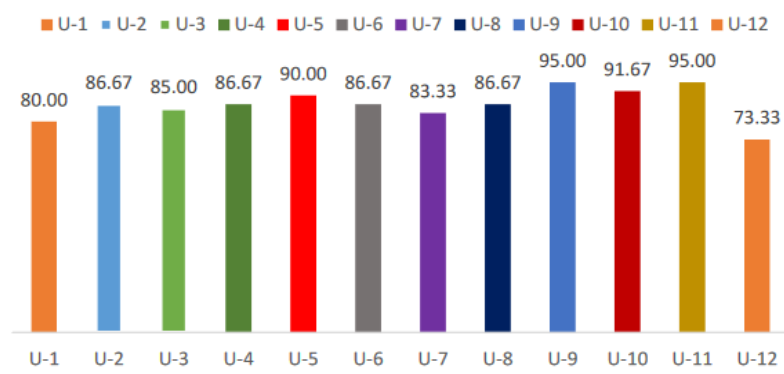
Figure 1. Diagram of the level of understanding of research activity participants

Based on Table 1 above, it can be concluded that participants' level of understanding towards lego game learning media in improving students' mathematical comprehension skills in Medan Development Private Junior High School is 86.67%. The score shows that participants understand the material the Bina Bangsa University Research Team delivered through socialization activities. According to this, the details of achieving student understanding of each aspect are as follows: 81.67% of participants know the title of the research activity, 80.00% of participants know the purpose of the study, 76.67% of participants understand the demands of the 2013 curriculum, 81.67% of participants know the definition of cognitive, affective, psychomotor aspects, 83.33% of participants understand the problems faced by students, 76.67% of participants know the causes of problems faced by students, 78.33% of participants understand the definition of lego games, 80.00% of participants knew the difference between student-centered and teacher-centered approaches, 83.33% of participants knew how to use Lego games, 83.33% of participants were able to use Lego games in every fractional material and other materials, 80.00% of participants believed that Lego games could motivate student learning, and 81.67% of participants believed Lego games could improve student understanding

D. CONCLUSIONS AND SUGGESTIONS

Based on the results of the analysis, it can be concluded that 86.67% of participants understand lego games as a learning medium that can increase students' mathematical understanding of fractional material. After implementing lego game learning media socialization activities in improving students' mathematical understanding of fractional material at MTS Islamiyah Ciomas. So the next plan is to monitor the service location to see the teacher's ability related to lego games on fractional material.

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