Using Macro Flash Animation Media on Motion Material to Improve Learning Achievement for Learning Science in Junior High School

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Abstract

This research was conducted to improve students' ability in learning of motion material at one of the junior high school in Serang, Indonesia. The hypothesis of action to be tested is the achievement of learning of motion material can be increased through macro flash animation media in learning process. This research involved students of class VIII B as many as 33 people. Data were collected through the instrument, direct observation in the field and generate initial data of student's ability or pre-cycle in the material motion 63.03 (less categories). The objectives of this research are: (1) to improve student's learning motivation in motion system concept by using simple props, (2) to improve student learning outcomes through classroom action research with several cycles. Based on the observation, the causes of low comprehension and student learning outcomes on the concept of motion are: (1) low student motivation, (2) inadequate learning infrastructure, (3) teachers do not vary in providing learning media. Then, based on observation and the results of pre-cycle, then conducted research with activity 2 cycles where the cycle to 1 shows the results increased to 69.70 (good category) and in the second cycle to 83.79 (very well category). Thus, the success indicator is achieved so that the approach by using animation media macro flash as a simple tool can improve student's motivation and achievement, both in present and future.

Keywords: Macro flash Animation Media, Achievement of Learning, Motion Material

INTRODUCTION

The learning process is declared successful when the student achievement obtained good. Learning achievement can be a change in students' cognitive, communication skills, cooperation, and other visible capabilities. Learning achievement can be seen from changes in attitude and behavior after receiving a lesson or after learning something (Hamalik, 2010).

There are several factors that influence the achievement of learning by Achmadi & Supriyanto (1990) consists of learning stimulus factors, learning method factors, and individual factors. Learning stimulus factors are related to external factors of students such as classroom atmosphere. Factor of learning method is related to method, media and approach used by teacher. And then, the individual factor is related to the individual's motivation.

Another factor that affects student achievement learning is difficulties experienced by students. According to Evita et al (2015), the factors that affect learning difficulties come from self-esteem of 70.9%, from the family environment of 50.1%, and from the school environment by 68.9%. This is likely to be overcome by learning method factors that affect student achievement.

Learning method factors become an important part that influences the learning process. One that can be attempted to improve student learning achievement is innovative learning media (Gemuruh, 2017). Learning media is used to concrete material or close to material reality in students. It is possible that this will help their reasoning process against the material. As the results of Muhammad's research (2012) The presence of a very positive attitude and response to the use of Macromedia Flash, making students more active in group learning, and can make learning mathematics favored and encouraged students in learning.

Learning media other than to make real a material, can also eliminate boredom during the learning process. As according to Supardi (2010) interesting learning media and direct involving students can make learning fun, train cooperation, improve students' understanding of interest in learning, and accelerate information and solve problems.

Based on observations at SMPN 1 Mancak-Serang class VIII academic year 2015/2016 daily test value on average subject matter is still low. This is because the learning media such as visual aids are still less varied which resulted in less active students in the class in responding to learning and students easily feel bored because the presentation is too abstract.

Based on these problems, there is a new innovative learning media in the form of the use of animated media macro flash on learning materials motion. as an effort to make real abstract material, so that students can see the direct mechanism of motion near the original, not just imagine. This is reinforced by the results of research Gustina et al (2016) which with the animation media macroflash positively affect the students' cognitive and motivation and cognitive abilities.

Learning media based on animation is believed to increase the motivation of learners in learning. Animation is a multimedia computing media in the form of software where there is a combination of text, audio, images and video. Animated files stored on the computer (hard disk) can be viewed using Macromedia Flash or SWF Opener program (Wahono, 2002).

The use of animation media aims to motivate students in learning activities, attract student interest, and make the material is not boring, also the learning becomes more interesting and fun. So that the expected end result of student achievement. Especially for motion material on science subjects.

Science subjects in junior high school one of them is about the material motion. The competence standard of motion material in SMP is to apply the basic concepts and principles of kinematics and the dynamics of point objects. The basic competencies that must be achieved by the students is to analyze the amount of physics on the motion with the speed and constant acceleration. With the media animation macroflash on learning materials "Motion" can improve student achievement.

Based on the above description, it is important to conduct classroom action research at SMPN 1 Mancak. This study aims to determine student achievement using macro flash animation media by looking at some indicators. These indicators include attention to explanations, interest in learning, communication among peers, and work according to procedures. Other than that students' cognitive.

METHOD

The method used is a classroom action research with two cycles, with first and second cycles of two meetings each. As according to Wiriaatmadja (2005) classroom action research should be related to the learning process in the classroom, and the results should improve the quality of student learning in the classroom.

This research was conducted in one of SMP Negeri in Serang,

Indonesia that is SMPN 1 Mancak. The school is located on the border area of Serang Regency, Indonesia with Cilegon City, Indonesia. The class that used as research sample is class VIII B. The instrument used is a written test instrument given to 33 students and observation sheet to measure student's interest and communication. This research was conducted in the first semester on the concept of motion material. The time of the research is August of 2016.

RESULTS AND DISCUSSION

Cycle I

Cycle I consists of two meetings. From the observation result of the first meeting using student observation sheet, the data obtained with the indicator pay attention to the teacher's explanation 100%, interest to study 80%, student communication with teacher 20%, communicate with friends in group 40%, express opinion 40%, make question 40% , listening to friends 20%, working according to procedure 40%, presenting 0% team work result.

At the second meeting, the expected activities of the learners begin to appear, all student activity is observed in the group. From observation result of observation there are symptom show improvement to observation indicator that is; pay attention to teacher's explanation 100%, interest 80% learning, student communication with teacher 80%, communication with friends in group 60%, express opinion 60%, make question 60%, hear 80% friend explanation, work according to procedure 100% presenting 80% work group results. With the total number of students who completed the answer to the problem in the first cycle of 54.5% and the unfinished at 45.5% can be seen on Figure 1. Where initially at the time of complete pre-cycle only 30.30% and not complete of 69,70%. So there is an increase in the number of students who graduated bring the matter of motion.

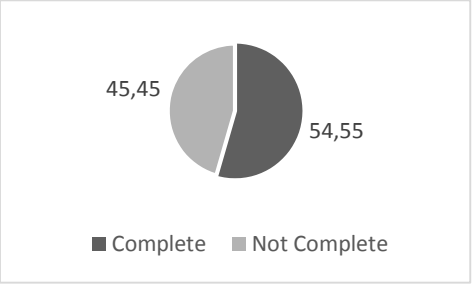
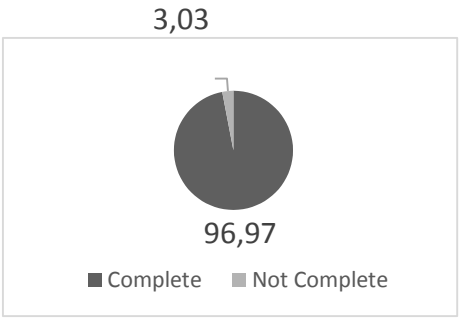


Figure 1. Student learning mastery diagram in Cycle I

Cycle II

Student activity on cycle 2 is much better than cycle 1. can be seen from the observation with indicator; pay attention to the teacher's explanation 100%, interested to learn 100%, student communication with teacher 80%, communication with friends in group 100%, express 100% opinion, make 80% question, hear 80% friend explanation, work according to procedure 100% presented the work of the group 100%.

The total number of students who completed the answer to the problem in the first cycle of 96,7% and the unfinished at 3.3% can be seen on Figure II..



Picture 2. Student learning mastery diagram in Cycle II

There is a significant increase in the number of students in answering the matter of motion from pre-cycle to cycle I and to cycle II. The increase is very drastic that can be seen in table 1 on changes in cycle I and cycle I

Table 1. The change of cycle I and cycle II

Component	Pre-cycle (students)	Cycle I (student)	Cycle II (students)	Note
The number of complete	10	18	32	Up
% complete	30,30 %	54,55 %	96,7 %	Up
The number of not complete	23	15	1	Down
% not complete	69,70%	45,45 %	3,03 %	Down
Average	63,03	69,70	83,79	Up
Task	-	69,50%	79,28%	Up

Based on the result of research of class action, it can be seen that student achievement increase. The indication is the improvement of students' values, attention, interest and communication. This can be due to the use of macro flash animation media on Motion subject materials physics. Initially the material is considered difficult. Evident from the number of students who did not completed greater than those completed in Table 1.

With the use of animated media macroflash students who complete more than the unfinished. The use of macroflash animation media attracts students' attention to active learning. Because macro flash animation media provide positive stimulus to receive and process information. So according to Gustina et al (2016) the greater the information is understood and can be retained in memory. Thus, students can receive and absorb easily the information in the material presented in animated macro flash media.

There have been many research results about learning media, especially

media animated macro flash that positively affect the learning outcomes, liveliness, motivation, and others. Therefore, it is better in the learning process using learning media, although the media is very simple. The most important thing in the use of computer-based learning media especially required the expertise of teachers in making, planning or class management. As the research conducted by Sutarman (2016) about computer-based learning Tutorial model that can improve student learning outcomes when followed by high interest and the ability to operate the computer. The success of computer-based learning Tutorial model in improving learning outcomes due to factors that support the success of computer-based learning has been met well, both in terms of infrastructure facilities, the ability of teachers and students and the time available in using a computer laboratory.

In addition, computer-based learning Tutorial model effective to improve student learning outcomes when the inhibiting factors of computer-based learning Tutorial model can be resolved by equipping means of infrastructure, provide computer training for teachers and setting the schedule of the use of well-organized computer laboratories.

Macro flash animation media is very suitable for science subjects. This is due to the advantages of the media, among others; can be easily and freely in creating animation with the flow of scenes that have been made by the teacher. This macro flash can generate small files. This is because the macro flash uses animation with a vector base, and also the size of this small Flash file can be used on web pages without requiring long loading time to open it. So can save time for learning process. More can understand the material being studied because each material presented simulation. More passion in learning because the presentation of the material is equipped with pictures, sound and video. In addition, macro flash animation media can interact with the media because it is interactive. Macro flash animation media also has some shortcomings that most likely can also be minimized, including; the menus are sometimes complicated, or not compatible with computers used in schools and need a lot of tutorial references (Hidayatullah, 2007).

CONCLUSION

Based on the description, it can be concluded that learning by using simple visual aids macro flash animation, can make students more passionate and happy in the process of learning, berpartispasi, and care for themselves and the environment. Provision of teaching and learning activities of motion materials by using a simple animated media macro flash can increase the activities of learners. Provision of

teaching and learning activities of motion materials by using simple animated media macroflash can provide creative innovation in learners that can help mengkonkritkan system motion. Implementation of teaching and learning activities of motion system by using macroflash animation media can improve students' learning achievement which is proven by the average score from cycle 1 that is 69,70 toward cycle 2 that is 83,79 to be better and increase drastically. Besides the percentage of graduation also increased, cycle 1 is 54.55% cycle 2 to 96.97%.

SUGGESTIONS

By paying attention to the process and learning outcomes using this macro flash animation, the suggestion is the effort of improving the quality of science learning, or other subjects in junior high, should the teachers always be creative and make interesting learning innovations to make students happy, interested, and have a sense of confidence in learning, so that students prefer physics or other subjects. Evaluation is required on the delivery of material delivered by the teacher so as to foster the spirit of students can learn independently, because with independent learning learners can find a certain experience that can not be forgotten throughout life. Time management should be carefully planned in order to create an efficient, effective, enjoyable, and well-targeted environment. The education office should regularly organize learning competitions and the presence of Teaching Skill training especially ICT and its implementation so as to improve the quality of teacher performance.

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