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USE OF LEARNING MEDIA ICT-BASED TO IMPROVE MOTIVATION AND THE RESULT OF LEARNING SCIENCE IN SOLAR SYSTEM MATERIALS

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Abstract

This research raises the problem of the low motivation and learning outcomes of science in the sixth grade students of SDN 257 Pelita, Kecamatan Lengkong, Bandung City. The objectives of this study are as follows: (1) To find out the improvement of science learning motivation through the use of ICT-based learning media. (2) To determine the increase in science learning outcomes using ICT-based learning media This type of research is Classroom Action Research (CAR) with a model developed by Kemmis and McTaggart. The subjects of this study were 30 students. The results showed that. (1) the use of ICT-based learning media can improve learning motivation. This can be seen from the increase in the average student motivation increases. (2) The use of ICT-based learning media can improve learning outcomes. This can be seen from the average value of student learning outcomes increases with the results of the percentage of non-compliance increased.

Keywords: learning motivation, learning outcomes, ICT-based media.

INTRODUCTION

Minister of National Education Regulation No. 22 of 2006 stipulates that Competency Standards (SK) and Basic Competencies (KD) of Natural Sciences in SD / MI are minimum standards that must be achieved nationally by students and become a reference in curriculum development in each education unit. The achievement of SK and KD is based on empowering students to instill critical, creative and independent habits of thinking and behaving scientifically. Natural Sciences is expected to be a vehicle for students to learn about themselves and the natural surroundings, as well as the prospect of further development in applying it in their daily lives. The learning process emphasizes giving direct experience to develop competencies in order to explore and understand the natural surroundings in a scientific manner. Science Education is directed to do so that it can help students to gain a deeper understanding of the natural surroundings.

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But the reality in the learning process field still tends to use traditional methods with conventional learning models, which focus on providing information and knowledge to students in transferring as much knowledge as possible. Students are only limited to memorizing without being faced with problems to think more and act. Therefore there is saturation and lack of motivation of students towards the subject matter and has an impact on the low student learning outcomes.

Motivation comes from the word motif, in English is motive or motion, then motivation which means movement or something that moves. This means something that drives the action, or is called intention. According to Hamzah B. Uno (2013: 3) that "motivation is an impulse found in a person to try to make changes in behavior that are better in meeting their needs." From the description above of the meanings above, the researcher concludes that the notion of learning motivation is an effort or effort to move or generate a person's mental strength to carry out activities in order to achieve learning goals.

Purwanto (2010: 46) states that: Learning outcomes are changes in students' behavior due to learning. Behavioral change is caused because he achieved mastery over a number of materials given in the teaching and learning process. Furthermore, he said that learning outcomes can be in the form of changes in cognitive, affective and psychomotor aspects. Learning outcomes are all behaviors that students have as a result of the learning process taken. Learning outcomes are a series of data, skills, skills, maturity, abilities, understanding and motor skills possessed by a person after going through a learning process, so changes in behavior and mindset are the results of learning. According to Dimyati and Mudjiono (2013: 3) "learning outcomes are the result of an interaction of learning actions and teaching actions. From the teacher's perspective, teaching action ends with a process of evaluating learning outcomes. From the student's side, the learning outcomes are the ending and the peak of the learning process. Based on the description above, it can be concluded that learning outcomes are a final assessment of the process and recognition that has been done repeatedly, and will be stored for a long time or will not be lost forever because the learning outcomes participate in forming individual individuals who always want to achieve better results so that it will change the way of thinking and produce better work behavior.

For this reason the teacher should strive to realize an active and enjoyable learning process by using innovative and creative learning media.

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According to Munadi (2013: 7) suggested that "learning media is everything that can deliver and channel messages from sources in a planned manner so as to create a conducive learning environment where the recipient can carry out the learning process efficiently and effectively".

From the above explanation it can be concluded that the learning media is everything that can be used to stimulate the mind, feelings, attention and ability or learner skills so as to encourage the learning process. Thus, learning media are all things or components that can be used to channel messages from the sender to the recipient so that it can stimulate students' thoughts, feelings, attention and interests in the teaching and learning process.

In this study the material that will be used is the science material of the sixth grade of the second semester, which is the material of the solar system. Based on Education Unit Level Curriculum (KTSP), BSNP (2006: 172) as for the basic competency standards and competencies that will be used are as follows:

Table 1.1

Basic Competency Standards and Competencies of Science

Basic Competency	Competency Standards
9. Understanding the sun as the center of the solar system and the interaction of the earth in the solar system	9.1 Describing the solar system and the position of the solar system 9.2 Describe the events of the earth's rotation, the earth revolution and the moon revolution 9.3 Explain the occurrence of lunar eclipses and solar eclipses 9.4 Explain the calculation of the Christian calendar and the Hijri calendar

Based on observations in class VI A SDN 257 Pelita, Kecamatan Lengkong, Bandung City during science lessons, especially solar system material, teachers used lecture methods more often and students were only asked to record and listen, teachers rarely used media that could support classroom learning. This is what makes students feel bored and uninspired so

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learning is not mean. The teacher has not utilized the existing learning media appropriately, effectively, interestingly, and meaningfully for students. Therefore there is saturation and lack of students' attention to the subject matter and have an impact on the low student learning outcomes.

To overcome the above problems, learning is designed using ICT-based learning media that can be in the form of powerpoints, videos, and images to assist teachers in conveying learning material on material that is difficult for students to accept so that it is expected that ICT-based learning media can increase motivation and learning outcomes of science. .

Learning based on Information and Communication Technology (ICT) or Information and Communication Technologies (ICT) is learning that uses technology and communication media in the field of learning by using electronic facilities to process and convey information (Sutopo, 2012). The main purpose of learning using Information and Communication Technology (ICT) is how a teacher can package interesting learning with information and communication technology media and students can be actively involved in learning (Arifin, 2012).

METHODS

A. Research Design

The research design used was Classroom Action Research (CAR). Suharsimi (Ekawarna, 2013: 4) suggests that: CAR includes three words: "research", "action", and "class". Research is the activity of looking at an object, using certain methodological rules to obtain data or information that is useful for researchers or interested people in order to improve quality in various fields. Action is a movement of activity that is intentionally carried out with certain objectives in the form of a series of periods / activity cycles. Class is a group of students / students who at the same time and the same place receive the same lessons from the same teacher / lecturer.

B. Research Participants

Participants are all people or people who participate in or participate in an activity. According to the views of Sumarto (2003: 17) participants, namely: "Taking part or

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involvement of people or society by providing support (energy, mind and material) and responsibility for every decision that has been taken in order to achieve the goals set together".

It can be concluded that participants are subjects involved in mental and emotional activities physically as participants in responding to activities carried out in the learning process and support the achievement of goals and are responsible for their involvement. In this study researchers involved several participants, namely: (1) SDN 257 Pelita, Lengkong District, Bandung City; (2) Principal of SDN 257 Pelita; (3) Class VI Science Teachers; (4) Students of SDN 257 Pelita, Lengkong District, Bandung City.

C. Research Instruments

Research instruments are needed to obtain research data. The research instrument itself is a tool used to measure observed phenomena. The instruments used are as follows: (1) observation sheet; (2) test of learning outcomes; (3) interview.

D. Research Procedure

This research will be carried out in 2 cycles. Learning conducted in each cycle will be carried out for 2 meetings. Each cycle has 4 stages: planning, action, observation and reflection. Researchers also use ICT-based learning methods in each meeting so that the planned goals can be achieved.

E. Data Analysis

In this class action research the types of data taken and analyzed are quantitative data. Of all the data obtained in the field, it is processed and analyzed, then the authors make conclusions about the ability of students to understand the material of the solar system with ICT-based learning media, individual completeness and motivation of science learning students based on ICT.

The data obtained from this study are motivational data and student learning outcomes. The data was obtained through observation, interviews, and tests on the sixth grade students of SDN 257 Pelita, Lengkong District, Bandung City. After the data is obtained, then the teacher examines and learns all the data that has been collected.

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RESULTS AND DISCUSSION

Results

1. Improved Efforts

This research was conducted in two cycles. Each cycle consists of two meetings. When learning science in class VI A SDN 257 Pelita, Lengkong Sub-district, Bandung City, by displaying writing, pictures and videos on a power point slide. The learning process by using ICT-based learning media makes students have high motivation and learning outcomes. The steps in implementing learning during cycle I and cycle II are as follows: 1) Prepare laptops, projectors and speakers; 2) Teachers before learning, first prepare supporting tools or ICT-based learning media such as laptops, projectors, and speakers; 3) Presenting images, videos and powerpoints; 4) The teacher presents pictures and videos on powerpoints related to solar system material. The use of powerpoint can encourage users to insert animation effects as well so that it makes it look more attractive; 5) Observing images, videos and powerpoints; 6) The teacher uses powerpoint when displaying text and images. This application helps create a media for delivering learning material delivered In addition, the teacher also broadcasts videos so that students are more interested and understand the material; 7) Questions and answers with students about the material; 8) The teacher after completing the presentation delivered the questions and answers with the students. This is done so that students recall the material that has been explained by the teacher. For students who are active and answer correctly given a reward in the form of a sticker star;9) Writing down important matters relating to the material; 10) When the teacher explains the material of the solar system, students record important matters relating to the material in their respective notebooks so that students can learn it again at home; 11) Communicate about student work results; 12) Teachers and students correct problems that have been done together.

2. Increasing Learning Motivation

Research to increase students' learning motivation by using ICT-based learning media has been conducted in class VI A SDN 257 Pelita, Lengkong District, Bandung City. The use of ICT-based learning media in the form of powerpoint in which there are videos and images

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can improve learning motivation so that students are interested and enthusiastic in learning about classroom learning.

The average result of observations made by two observers in cycle I was 74 (moderate). This has increased from observations in the initial conditions that is equal to 60 (low). In cycle II there was a return of 85 "high". Based on the observation data, there was an increase from the initial conditions to the first cycle to the second cycle. In addition to observation, researchers also obtained motivation results using questionnaires distributed to students.

After conducting research using ICT-based learning media in the form of powerpoint, images and videos show an increase in student learning motivation. By using ICT-based learning media students become passion for learning and learning activities become more enjoyable because the use of this powerpoint application can design and make presentations more interesting. Multimedia-based teaching systems (technologies that involve text, images, sound, and video) teachers can present learning material more interestingly, not monotonically and facilitate delivery.

3. Improved Learning Outcomes

Research on improving student learning outcomes using ICT-based learning media has been carried out in class VI A Pelita Elementary School, Lengkong District, Bandung City. Learning outcomes are examined using evaluation questions at the end of each cycle. The results of the recapitulation of learning outcomes in the initial conditions, cycle I, and cycle II. Based on the average data acquisition value in the initial conditions, cycle I and cycle II it turns out that there are changes and increases in each cycle. With the use of ICT-based learning media students can read writing, observe images and see and listen to videos displayed on powerpoints about the material of the solar system. The use of powerpoint in presenting this science material can increase students' enthusiasm and interest in learning. Students become more focused on learning the material being taught.

Discussion

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Efforts to increase the motivation and learning outcomes of science by using ICT-based learning media for grade VI students of SDN 257 Pelita, Lengkong District, Bandung City, 2017/2018 Academic Year, can be done using ICT-based learning media. This can be seen from the increase in the average motivation score from the initial condition 67 (low) to 82 (moderate) in the first cycle and increasing again to 89 (high) in the second cycle. As well as an increase in learning outcomes from the initial conditions the percentage of students who reach KKM (70) by 30% whose average score is 65. Cycle I is 70% with an average value of 77. Cycle II is 95% with an average value of 87.

CONCLUSIONS

He use of ICT-based learning media that can be in the form of powerpoints, videos, and images can help teachers in delivering learning material on materials that are difficult for students to accept so that ICT-based learning media can increase motivation and learning outcomes of students of SDN 257 Pelita, Lengkong District, Bandung City. The use of ICT-based media will make students more interested and not bored because students do not just observe the material only from the textbook. Many displayed moving pictures and videos related to the material. This has an impact on students' motivation, students who were initially less interested and considered this material were difficult to understand and understand to change into more enthusiasm because it felt fun and easy to understand and learn. The teacher is also facilitated in delivering the material, the teacher more easily describes the solar system so that students better understand what the teacher is conveying so that the learning outcomes can be improved.

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