

## **The Influence Of Information Technology Based Learning Media On Student Learning Motivation**

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### **Abstract**

The study of the Influence of Learning Media based on Information and Communication Technology (ICT) on Learning Motivation was carried out on Students in 1 Bandongan Public Middle School. This study was conducted on ninth grade students in Natural Sciences subjects. This study was conducted to determine the effect of the use of Information Technology and Communication-based learning media on Power Point programs on students' learning motivation. This study uses a quasi-experimental design with the form of nonequivalent control group design. Based on tests of normality, homogeneity, and t test from pretest-posttest data, the learning motivation of experimental class students can be concluded that first there are differences in learning motivation between students before and after treatment in the experimental class using ICT-based learning media. Second, there are differences in students' learning motivation between before and after treatment in the control class that uses media charta. Third, there is no difference in the increase in students' learning motivation between experimental classes that use ICT-based learning media with control classes that use media charta.

**Keywords:** *quasi design experiment, ICT, media charta, learning motivation.*

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### **Background**

Teaching and learning activities contain basic learning ideas to achieve the specified competencies, as well as pedagogical and andragogical ideas that examine learning so that it is not mechanistic. This component states that learning is an active activity of students in building meaning and understanding. Thus, in practice, teachers need to provide encouragement to students to use their authority in building ideas. Learning responsibility remains with the students themselves, while the teacher is responsible for creating pleasant situations, which can encourage students' initiative, motivation, and responsibility for lifelong learning (Arikunto, S, et al, 2013: 122).

In the learning process the teacher and students are two components that cannot be separated. Between these two components must be intertwined mutual support interaction. But to get optimal learning it takes several things outside the teacher and students that can support the learning process, one of which is the media for delivering

material. While student learning outcomes are determined, among others, by a combination of students' basic abilities and sincerity in learning. Seriousness is determined by the motivation in question. Therefore it is very important to foster students' learning motivation (Ministry of National Education, 2000: 145).

In junior high school, one subject must be followed by students is Natural Knowledge. Science learning is a tool that can help facilitate the communication of material and facilitate students in receiving information and interesting in learning. Learning tools can be in the form of teaching materials, learning aids, multimedia learning, etc.

According to Atikah Imas Nuraini and Septi Safitri in a case study on the Utilization of ICT in Assisting in Understanding of Environmental Science Lessons, it was stated that there was an ICT relationship to Natural Science Lessons. Learning Natural Sciences with an approach that includes technology aspects has several differences compared to conventional methods. These differences include: links and application of learning materials, creativity, attitudes, processes, motivations and concepts of knowledge. In the world of education students are required to know IT from an early age. Another thing stated in (Arikunto, S, et al, 2013: 123), that students need to know the use of science and technology from an early age. KBM needs to provide opportunities for students to obtain information from multimedia, at least in the presentation of material and the use of learning media. Yulaelawati, (2007: 143), said that learning that involves students to experience and talk with others will be more meaningful in learning, even learning success can reach 95%. Aside from being a means to improve student learning motivation, ICT-based learning can also facilitate teachers in delivering learning material, familiarizing teachers to adjust to the increasingly rapid development of the times. In the Minister of National Education Minister's Decree No. 16 of 2007 concerning Academic Qualification Standards and Teacher Competence in the field of ICT namely utilizing information and communication technology to communicate and develop themselves. Teachers must be able to use information and communication technology (ICT) to communicate and develop themselves.

Learning science in SMP Negeri 1 Bandongan not all teachers have consistently used Information and Communication Technology-based learning media (ICT) or Information Communication Technology (ICT), the motivation of students is still low (Supervision Document, 2017). The low motivation to learn suggests a problem in PBM, including problems in the communication component. All of these are things that can lead to low motivation to learn. Starting from the above, the general problem that will be examined in this study is how the influence of ICT-based learning media on learning motivation. Limitation of the problem in this study the writer formulates a general problem into sub-problems as follows: First, are there differences in learning motivation between before and after treatment in the experimental class using ICT-based learning media? Second, are there differences in learning motivation and students' understanding between before and after treatment in the control class that uses charta media? Third, is there a difference in the increase in learning motivation of students in

the experimental class using ICT-based learning media with control classes that use charta media? The purpose of this study was to determine the effect of ICT-based learning media on students' learning motivation. A study of educator perceptions in the use of ICTs for teaching, for professional development, administration, and personal use informs that most educators studied recognize that ICTs have a positive impact on students in the learning of Mwalongo A, (2011: 45), Heafner, T (2004: 49) in (Muhamad Fajrin, 2013, Journal of Educational Research is issued by the Institute of Research and Community Service (LPPM) of the Universitas Pendidikan Indonesia).

Motivation strategies that can be used by educators in producing students in learning can be done by connecting subject matter with environmental conditions, conditions of difficulty level, meaningful learning conditions, and disruptive meaningful strategies. Other efforts to produce students can also be done by giving hope to succeed, containing the success of the program, teaching objectives, remedial socialization from outside awards that can contain prizes, positive competencies, and learning outcomes (Brophy in Hamzah, 2009: 8). Motivation has an important role in learning and learning such as determining things that can be used as reinforcement of learning by facing students with problems which must then be found solutions based on the knowledge and experience of students (Hamzah, 2009: 27). The nature of learning motivation is a form of internal and external encouragement to students who are taking PBM to make behavioral changes (Hamzah, 2009: 31). Indicators of learning motivation formulated include (1) the desire and desire to succeed, (2) the existence of encouragement and needs in learning, (3) the existence of hopes and aspirations for the future, (4) the existence of appreciation in learning, (5) the existence of activities interesting in learning, (6) the existence of a conducive learning environment that allows students to learn well.

Based on the background above, this study is entitled The Influence of Information and Communication Technology-Based Learning Media Against Learning Motivation will be revealed by a quasi-experimental method design with nonequivalent control group design that will be carried out in class IX at 1 Bandongan Public Middle School Magelang District. Systematic writing consists of introduction, research methods, results and discussion, conclusions.

### **Research Methodology**

This study uses Quasi Experimental Design using the Nonequivalent Control Group Design design. The study consisted of experimental class and control class conducted on science subjects in class IX of SMP Negeri 1 Bandung, (Sugiyono, 2013: 114). Data Analysis Techniques use normalized gain. As expressed by Hake (2002: 3) that by getting the normalized gain average value, it will roughly be able to measure the effectiveness of a learning in conceptual understanding. The statistical test carried out in this study is the normality test, homogeneity test and hypothesis testing with two mean difference tests.

## **Findings and Discussion**

First, the average pretest-posttest score of the experimental class learning motivation consisted of 81.12 represented by 74% of students for the average pretest score while in the posttest score a score of 88.70 was represented by 80% of students. Based on the results of the normality test obtained the pre-test value of the experimental class learning motivation with a significance value of  $p\text{-value} = 0.200$  so that the  $p\text{-value} > \alpha$ , then based on the results it was decided that the sample came from a population with normal distribution. To post with a significance value of  $p\text{-value} = 0.006$ , so that the  $p\text{-value} < \alpha$ , thus the sample does not come from a population with normal distribution and homogeneity test of the pretest-posttest value of the experimental class learning motivation with a  $p\text{-value}$  significance value of 0.015, so  $p\text{-value} < \alpha$  so the sample does not come from a homogeneous population. Because the requirements for normality and homogeneity of pretest-posttest data of experimental class learning motivation were not fulfilled, the test continued with non-parametric tests with a significant value  $p\text{-value} = 0,000$ , so that the  $p\text{-value} < \alpha$  and this means that  $H_0$  is rejected which means motivation posttest scores experimental class learning is better than pretest scores. N-gain learning motivation in the experimental class with a normalized gain of 0.28. When compared with the gain index  $g \leq 0.30$ , the increase in learning motivation in the experimental class is categorized as low. The discussion of experimental class learning motivation was referred to the presentation of pretest-posttest data. Based on the results of the study it can be concluded that there are differences in learning motivation between students before and after treatment in the experimental class using ICT-based learning media.

Based on pretest-posttest scores, it is known that the increase in learning motivation in the experimental class is categorized as low. Second, statistical test of pretest-posttest data on learning motivation conducted on control class with 32 students. Based on the results of descriptive statistical testing, there are pretest-posttest results of information control class motivation that the average pretest-posttest score of control class learning motivation consists of 81.67 (74%) for the average pretest score while the average posttest score is obtained score of 88.06 (80%). The results of the normality of the control class learning motivation with a significance value of  $p\text{-value} = 0.082$ , so that the  $p\text{-value} > \alpha$ , the sample comes from a population with normal distribution and to post with a  $p\text{-value}$  significance value of 0.010, so that the  $p\text{-value} < \alpha$ . Thus the sample does not come from a population that is normally distributed. Homogeneity test with a significance value of  $p\text{-value} = 0.001$ , so that the  $p\text{-value} < \alpha$ , thus the sample does not come from a homogeneous population. Mann-Whitney test pretest-posttest control class learning motivation is of significance  $p\text{-value} = 0.002$ , so that  $p\text{-value} < \alpha$  and this means that  $H_0$  is rejected which means that the post-test score of the control class learning is better than the pretest score on the effectiveness of the effect of use media charta against the control class. The calculation results show the normalized gain average for pretest-posttest scores of control class learning motivation with a normalized gain of 0.20.

When compared with the gain index  $g \leq 0.30$ , the increase in learning motivation in the experimental class is categorized as low.

Based on n-gain of learning control class motivation, it can be concluded that there are differences in learning motivation between students before and after treatment in the control class that uses media charta. Based on the pretest-posttest score, it is known that the increase in the learning motivation of the control class is categorized as low. Third, the statistical test of score data increases the motivation of learning conducted on the experimental-control class. Based on the results of descriptive statistical testing, there was a score of an increase in learning motivation giving information that the average score of the increase in experimental class learning motivation was 8.43 (91%) and for the control class was 6.39 (93%).

Based on the recapitulation of the normality test obtained the value of increasing the learning motivation of the experimental class with a significance value of p-value = 0.043, so that the p-value  $< \alpha$  then the sample does not come from a normal distribution population and for the control class with a significance value of p-value = 0.200, so p-value  $> \alpha$ , so the sample comes from a population that is normally distributed. Based on the recapitulation of homogeneity test, it was obtained the value of increasing learning motivation of the experimental-control class with a significance value of p-value = 0.666, so that the p-value  $> \alpha$  then the sample came from a homogeneous population. Based on the Mann-Whitney test results obtained an average increase in learning motivation of the experimental-control class is of significance p-value = 0.436, so that the p-value  $> \alpha$  and this means that  $H_0$  is accepted which means there is no average difference between the increase of motivation learning experimental-control class. The average increase in learning motivation between experimental and control classes provides information that the average increase in experimental class learning motivation with gain normalization is 0.28 and the average increase in control class learning motivation with normalized gain is 0.20. When compared with the gain index  $g \leq 0.30$ , the increase in the learning motivation of the experimental class and control class is in the same category which is categorized as low.

Based on the n-gain of the experimental-control class learning motivation, it can be concluded that based on the results of the study it can be concluded that there is no difference in the increase in students' learning motivation between the experimental classes using ICT-based learning media and the control class using media charta. Four, the results of the data presentation showed that there was no difference in the increase in learning motivation between the experimental classes using ICT-based learning media and the control class that used the charta media in PBM IPA and increased motivation from the experimental-control class were both categorized as low.

The low increase in learning motivation between the experimental-control class showed the low influence of the use of ICT-based learning media in the experimental class and the use of media in the control class. This condition is because the learning motivation of the experiment-dick class students is in the very good category (referring to Arikunto, 2012: 232). ICT-based learning media have a low effect on increasing

learning motivation of students because the media design is not utilized according to the learning motivation needs of participants from value components, expectancy components, and affective components. Whereas the low influence of charta media on increasing students' learning motivation is caused by media designs that are not specifically created to facilitate learning motivation needs from value components, expectancy components, and affective components properly.

To support the usefulness of the facility, educators must be able to integrate motivation strategies into the subject matter. The effect of using ICT-based media and charta media on students' learning motivation is low, seen through PMB IPA in both classes. Based on observation sheets of learning and observation activities, the cause of the low increase in learning motivation of the experimental-control students in addition to the motivation of students who are not in good condition, this condition is also influenced by the lack of integration of the media into the implementation of motivational strategies such as giving gifts, praise .

In connection with the influence of ICT-based learning media on students' learning motivation, various features such as video, images, sound, text, graphics, and other facilities need to be used optimally. Based on the observations during the research in the PBM experimental class that uses ICT-based learning media namely power point, the researchers found several things related to efforts to improve the learning motivation of students through ICT-based media. Efforts to improve the learning motivation of students in PBM for value components, the educator can do it by making slides containing learning objectives by utilizing videos or images that are in accordance with the material. Thus it is expected that as stated in the School Management Guide if the students who are sure to learn are useful, able to master and the learning situation is fun it will be motivated. Participation of students in PBM can be pursued with Power Point (PP) media using PBL method. To further motivate PP slides that are made interactive by emptying several important sentences in slides and directing them to be answered by students, this is expected to build positive competition in terms of answering these questions. Efforts to improve students' learning motivation for expectancy components and affective components through PP media are simple and easy educators can do this by utilizing videos that can be obtained from [www.youtube.com](http://www.youtube.com) or other media. Motivation video can be displayed at the time of apperception or PBM closing and need strengthening with verbal communication. This is as appropriate as the theory that learning that involves students to experience and talk with others will be more meaningful in learning, even learning success can reach 95%, (Yulaelawati, 2007: 143).

## **Conclusion**

Based on the results of the study it can be concluded that: First, there are differences in learning motivation between students before and after treatment in the experimental class using ICT-based learning media. Based on pretest-posttest scores, it is known that the increase in learning motivation in the experimental class is categorized as low. Second, there are differences in students' learning motivation

between before and after treatment in the control class that uses media charta. Based on the pretest-posttest score, it is known that the increase in the learning motivation of the control class is categorized as low. Third, there is no difference in the increase in students' learning motivation between experimental classes that use ICT-based learning media with control classes that use media charta. Based on the pretest-posttest score, it is known that the increase in learning motivation of the experimental class and the control class are both categorized as low. Learning media is an important component in the implementation of the learning process so that it has become a necessity for educators to be able to choose and design media that suits learning needs. ICT-based learning media is a means of supporting learning. Based on consideration of the ease of designing and ease of use, the media based on ICT in the form of Microsoft power point presentation media can be an option for educators. This media is a simple media and the facilities in it are the same as facilities that can be used in other media such as interactive multimedia. The effectiveness of learning using Microsoft power point learning media should be equipped with facilities and infrastructure that support such as LCD pre-installers that are permanently installed in each class so as not to affect learning time. Educators must also equip themselves with laser pointers so that educators do not just sit in front of a laptop when running Microsoft power point programs. The use of media will be better if there is special training for educators in designing creative and innovative learning media, this training can be held within the scope of the MGMP so that training specifications can be devoted to specific subjects. This training can also be carried out within the scope of the school so that the facilities provided by the school can be maximally utilized for the learning process in schools. The results of this study are not research that can be generalized to all subjects, school levels, and educators. There needs to be further research related to the influence of the media on the spatial ability of students so that scientific studies on learning media will be more specific.

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