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THE USING OF FLASH INTERACTIVE MULTIMEDIA IN ISLAMIC EDUCATION COURSES TO IMPROVE SENIOR HIGH SCHOOL STUDENTS' CONCEPTUAL UNDERSTANDING

¹Rahmat Kuntoro, ²Udin Supriadi, ³Abas Asyafah

¹Postgraduate, Universitas Pendidikan Indonesia (UPI), Bandung, Indonesia

²Sekolah Menengah Atas Negeri (SMAN) 1 Rengat Barat Indragiri Hulu Riau, Indonesia

¹kuntororahmat@gmail.com

Abstract. Delivery of materials, which is often uninteresting, is one of the main causes of students' difficulties in understanding Islamic Education materials. The using of flash interactive multimedia in this course is a recent innovation in Islamic Education learning. Flash interactive multimedia has become a possible solution to present materials in a more interesting and meaningful way. Thus, the utilization of flash interactive multimedia is expected to aid students in understanding the concepts of Islamic Education materials. The aim of this study is to obtain an overview of improvement in students' conceptual understanding, comparing those who are exposed to learning using interactive multimedia and those treated with conventional learning. The present study employs quasi- experiment method, using pre-test post-test control group design. The subjects are 25 students in the experiment class and 25 students in control class, selected through purposive sampling. Data is collected through students' conceptual understanding test with multiple choices items. The findings show that conceptual understanding of students treated with flash interactive multimedia in Islamic Education lessons is higher than that of students treated with conventional learning. Students' conceptual understanding improves significantly using interactive multimedia, compared to students' conceptual understanding improvement in conventional learning.

Keywords: Flash Interactive Multimedia; Conceptual Understanding; Islamic Education

A. INTRODUCTION

Changes in curriculum is a common phenomenon all over the world, and many countries see it as a way to improve teaching and learning quality (Brodie, Lelliot, & Davis, 2002; De la Harpe & Thomas: 2009; Willink & Jacobs: 2013; Picower: 2013). Indonesian Government plays a significant role in improving the quality of education in the nation, i.e. through setting new policies on curriculum, producing the 2013 Curriculum. This curriculum is designed to perfect the previous curriculum, focusing on active learning approach based on religious and cultural values. Pertaining to this focus, the government has implemented some adjustments in several subjects, including the change from Islamic Education subject to Islamic and Character Education (Teachers' Manual for Islamic and Character Education). Islamic Education subject (shortened to IE) is a compulsory subject in all levels of education, from elementary school to university level. IE subject serves to instill Islamic moral values through conceptual understanding, such as following the examples of the Prophet Muhammad (in terms of character and moral values) in his life.

Understanding, or comprehension, is an ability to capture and further comprehend various facts which have certain meaningful correlations. Conceptual understanding is

important for students because it allows them to absorb, master, and retain the materials they learn for a long time (Taufiq, Suhandi, & Liliawati: 2017). The most important thing in learning Islamic Education subject is to apply the knowledge in practice. If the student is unable to put their knowledge into practice, they will never fully understand it. Hence, instilling good conceptual understanding on students, pertaining to Islamic Education, is one of the top priorities for teachers.

The reality of today's Islamic Education learning in the field is still far from what is expected. Teachers still rely on conventional methods to deliver the lesson. They use lecturing as the only delivery method and the blackboard/whiteboard as the only media. Such conventional learning is unable to fully develop and optimize students' understanding of the materials. Particularly because students do not find conventional method to be interesting, interactive, or improving their learning motivation. Conventional method is also less meaningful and tends to be tedious (Liu: 2010; Hammza, Daw, & Faryadi: 2013).

This is clearly not in line with what is expected from a teaching and learning process as mandated in the Government Regulation No. 19/2005 on National Education Standards. The Regulation stipulates that the teaching and learning process at schools should be delivered in such a way that is interactive, inspirational, fun, challenging, and motivating students to actively participate, as well as providing sufficient room for students' initiatives, creativity, and independence according to their talent, interest, and physical and psychological development. According to Bruner (Winatapura, 1993), during the lesson, students should be allowed to independently look for and find the meaning of what they learn. Therefore, teaching and learning process should actively involve students to allow them to develop their potentials and achieve good learning results.

On the other hand, today's development in technology is getting more rapid and advanced. Technology equipments such as computers have been an important and inseparable part of every modern individuals, including students. However, this fact is often overlooked in learning activities, particularly in IE learning. It calls for an innovation in the ways to deliver IE lessons so that students can understand the materials better. IE learning using flash interactive multimedia is a learning design that utilizes technology, such as computer application, to deliver more interesting and more interactive lessons. The captivating and interactive interface of the multimedia will increase students' interest and motivation in learning the materials. Previous studies show that the retention rate of students learning through multimedia is significantly greater than more traditional forms and their motivation and self esteem are also higher (Clarke & Swearingen: 1994). Learning through multimedia has great potentials to improve one's learning style (Mayer: 1999; Sweller: 1999; van Merrienboer, 1997). Thus, Islamic Education subject delivered using flash interactive multimedia is expected to improve students' conceptual understanding of the materials.

B. RESEARCH METHODOLOGY AND DESIGN

The present study employs quasi-experiment method using pre-test post-test control group design. The experiment group is treated with flash interactive multimedia learning, while the control group is treated without flash interactive multimedia. The control group is exposed to conventional learning.

The population in this study is all tenth grade students in SMAN 1 Rengat Barat. From the population, a sample of 25 students is selected for each group (the experimental and the control group) through purposive sampling.

The instrument implemented in the present study is conceptual understanding test, in the form of 16 items multiple choices test. The instrument is administered to students as the pre-test prior to the treatment. At the end of the treatment, the same instrument is administered to students as the post-test. To discover the improvement in students' conceptual understanding, the scores of pre-test and post-test are processed using N-gain equation as follows:

$$\langle g \rangle = \frac{\langle S_{post} \rangle - \langle S_{pre} \rangle}{\langle S_{maks} \rangle - \langle S_{pre} \rangle}$$

Source: Hake, 1999

The aspects of conceptual understanding measured in this study are exemplifying, inferencing, comparing, and explaining aspects. These aspects are chosen in consideration of their suitability to flash interactive multimedia. The followings are examples of flash interactive multimedia displays used in this study.

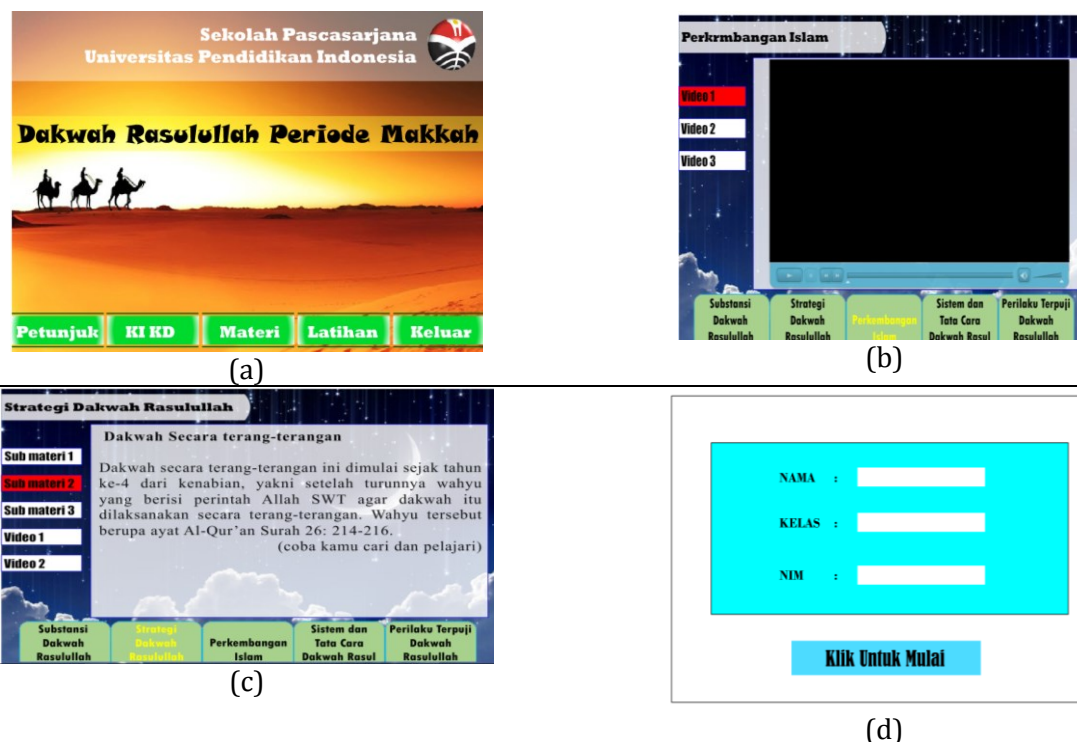


Figure B.1. Examples of Flash Interactive Multimedia Display (a) Home Page, (b) Text Material, (c) Video Material, (d) Questions

C. RESULT AND DISCUSSION

Based on the analysis of pre-test and post-test scores of students' conceptual understanding, N-gain data is acquired (Figure C.1).

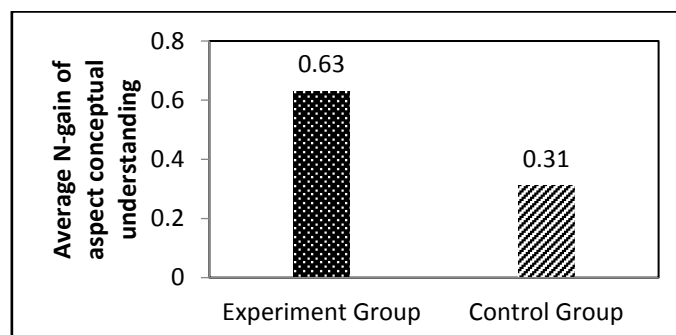


Figure C.1. Average N-gain of students' conceptual understanding

Figure C.1 shows that students' conceptual understanding in both experiment and control groups improves. The improvement of students' conceptual understanding in experiment class (using flash interactive multimedia learning) is higher than that in control class (without flash interactive multimedia; using conventional learning). This finding confirms previous studies that found that the using of interactive multimedia in learning is effective to optimize students' learning results (Zaidel: 2010; Andrade, Mercado, & Reynoso, 2008; Wiyono, Setiawan, & Paulus, 2012; Hue & Jalil: 2013; Hamzah, Rinaldi, & Razak: 2014; Mayer & Moreno: 2002; Bennet & Brennan: 1996). Using of multimedia in learning will improve students' learning efficiency and motivation. It also facilitates active learning and experimental learning, is consistent with student-centered learning, and guides students to learn better (Wiyono, Setiawan, & Suhandi: 2009).

Heinich (1996) states that interactive multimedia using allows for a more interesting and more interactive learning process, reduces the teaching time, improves students' learning quality, allows for flexible learning (anytime and anywhere), and improves students' reasoning skill. On the other hand, in conventional learning, teachers act as the sole source of information and focus only on knowledge transfer, which makes the learning process tedious and decreases students' learning motivation. In addition, the conventional method delivers the materials only through texts on the board, without any audio, picture, or video. This causes the students to find the materials difficult, which makes them unmotivated to learn (Hammza, Daw, & Faryadi: 2013).

Recapitulation of average N-gain score for each aspect of conceptual understanding for both experiment and control classes is displayed in Figure C.2.

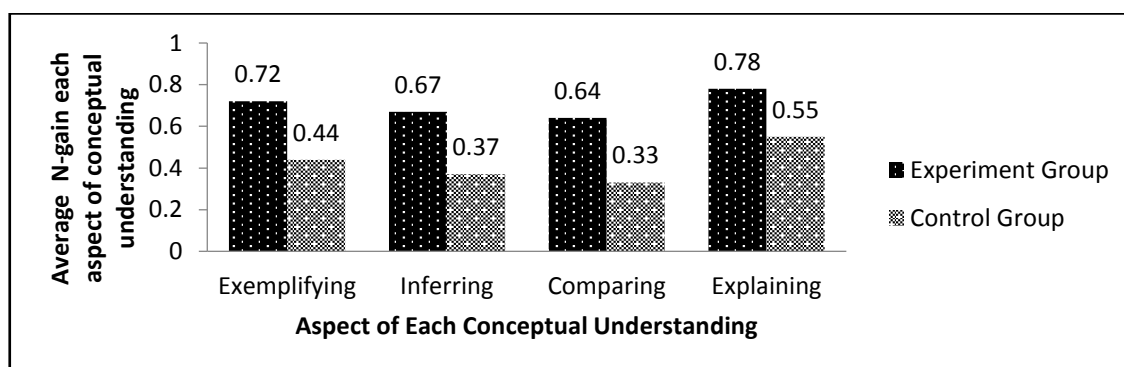


Figure C.2. Average N-gain score of each aspect of conceptual understanding

Figure C.2 shows that students' conceptual understanding improvement, in both the experiment and the control groups, varies according to each aspect of conceptual understanding. The N-gain scores in Figure 3 indicate that the improvement in each aspect of conceptual understanding is higher in students that learn using interactive multimedia (experiment class) than in students that learn using conventional method (control class). Figure 3 also shows that in experiment class, the highest improvement is on the aspect of explaining, with high category, and the lowest improvement is on the aspect of comparing, with medium category. Meanwhile, in control class, the highest improvement is found on the aspect of explaining (medium category) and the lowest improvement is found on the aspect of comparing.

The aspect of explaining experiences the highest N-gain improvement in both the experiment and the control groups. Multimedia application implemented in experiment group uses interesting displays and delivers materials in the forms of text, videos, and pictures interactively, creating better opportunities for students to understand and master the knowledge. A student can provide good explanation on a topic only if he masters the topic very well, understands the causality in the content, and possesses good reasoning skill (Taufiq et al.: 2017). The aspect of explaining in the control group does not improve much because

conventional method is less interesting and tends to be tedious, causing students to be unmotivated in learning. These findings confirm the previous studies that found that learning using interactive multimedia optimizes students' conceptual understanding, particularly on the aspect of explaining.

The aspects of comparing, inferencing, and exemplifying in experiment class show higher improvements than those in control class. Interesting display of multimedia makes it easier for the students to obtain information. In addition, information delivered through video allows for easier acquisition and retention of knowledge, as well as for making short inference of the information. Students' activities in looking for and finding the meaning of what they learn through interactive multimedia themselves also contribute to longer retention of information in the students.

D. CONCLUSION

The using of flash interactive multimedia in Islamic Education lessons improves students' conceptual understanding on the topic of the Prophet's effort to spread Islam in Mecca period better than the learning without using flash interactive multimedia (conventional learning), with medium category of improvement. Therefore, it is suggested that Islamic Education lessons on other materials can also be delivered using flash multimedia, as an alternative to optimize students' conceptual understanding.

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