THE EFFECT OF USING BLENDED LEARNING ON DIGITAL LITERATION IN HISTORY LEARNING AT SENIOR HIGH SCHOOL

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Abstract. *The era of the industrial revolution 4.0 which is currently rolling demands competent human resources to take part in the progress of the times. One of the demands that must be met in this era is the ability of digital literacy. Schools become an effective institution in the planning of capable human beings in accordance with the demands of the times. These challenges can be answered through learning activities using the Blended Learning model, where the learning process combines face-to-face with technology. This can be used by all subjects including one of them is a historical subject. This study uses a quasi-experimental method with a nonequivalent control group design. The populations in this study were high schools in Bandung and sample is one of the private schools in the city of Bandung. The results showed that the use of the blended learning model had an effect on the ability of digital literacy in history learning.*

Keywords: *Blended Learning, Digital Literation, Students, History Learning*

1. INTRODUCTION

Education in this era faced various complex challenges. This is inseparable from the characteristics of the 21st century, one of which is rapid change, so that events relating to society occur with a time (Puncreobutr, 2016). The events that occurred in this era present a different pattern that requires a responsive response to this. This condition certainly requires Human Resources who have the skills and readiness so that they can be part of the time. Benešovà & Tupa (2017) argue that generations in this era must have the power to adapt and innovate to play a good role in this era. Strong human resources can be obtained through various means, one of them through education. Education is a sector that provides leaders in the future must be able to facilitate education that can train students to think critically, logically and creatively is a need integrating technology into the field of education.

Technology in the field of education is presented as a device that supports facilitate the learning process so that its position is not the main one (Nurdyasnyah & Andiek, 2015). Technology in the form of a variety of software and hardware has a neutral and universal position so that it can be used by various disciplines, including one of them in the study of history. Historical learning has its characteristics because it is oriented to the past, while those who study it are students today. According to Kee & Kee (2015) there is a gap, so there needs to be an intermediary that can mediate historical events at the time with the knowledge of students living today. The alternative that can be done is to use good technology for devices, internet, digital tools and others.

Learning is an interactive dynamic activity not only for the teacher which is the center of information and learning but the teacher and student collaborate and align students as the center of learning Wilkerson (2003). The learning process encourages constructivist learning where students are active in building their knowledge accompanied by a teacher's guidance. The presence of technology in the classroom can provide a special experience for students (Bada, 2015; Sherman & Kurshan; 2005)

Given this century, the need for responsive humans is very much needed but can also show the right response so that it becomes a solution. Solving problems for someone who is not used

to it will be difficult so it requires other abilities, such as literacy skills. PISA 2018 data shows that from several countries, Indonesia has a very low position (OECD, 2019). The data does not describe Indonesian students as a whole but can provide a picture of how young people's literacy skills are.

Facing the difficulties above, learning with a blended learning typical can be an alternative in the learning procedure. Blended learning which is a combination of face-to-face and online learning can enhance learning that utilizes technology with conventional learning that is commonly done in the learning process (Bonk & Graham, 2012; Kerres & Witt, 2003). Blended learning also has the potential to improve literacy skills, because literacy is a necessity for effective learning (Sulisworo & Suryani, 2014).

Based on the description of the problems above regarding the maturity of education in the era in preparing future generations who are capable of both knowledge and skills. One of them is proficient in the skill of literacy, the learning process, including learning history must also facilitate these requirements. Accordingly, this study elevations the effect of blended learning on digital literacy skills in history learning.

2. LITERATURE REVIEW

2.1 Blended Learning

Blended learning or can also be called mixed learning exists one of a variety of learning models that can be used by teachers and students in learning activities. According to Bonk & Graham (2012) who revealed that Blended learning systems are a arrangement of face-to-face learning with learning using computers. However, Oliver and Trigwell (in Harsanto, 2017) shown that blended learning can be seen in several perspectives reasonably than just face to face such as the use of electronic media, learning media, learning contexts, theories and learning objectives. Blended learning is carried out in a variety of perspectives by the objectives to be obtained in the process.

Today technology is developing very rapidly in various sectors, including one of them in education. This can be used to incorporate learning with technological improvement. One of the original from the United States illustrates a teacher who uses online tools in the learning process so that learning turns into additional attractive to students (Pape, 2010).

Blended Learning can be done in the learning process by utilizing face-to-face and online media, according to Valiathan (2002, p. 50) such as e-mail, instant messages to web meetings. Besides, learning can also yield advantage of the Learning Management System (LMS), which functions to regulate the learning process so that it is more organized, for example by using LMS provided by the government for elementary schools to high schools. Therefore that teachers and students can interact in the LMS. Learning by using LMS can also be called synchronous learning or learning that look for to utilize the being of technology in the time decided upon by the students and teachers. Actually, agreeing to Kamarga (in Tarunasena, 2012, pp. 156-157) revealed that the nature of learning by using the asynchronous model pays attention to several aspects, namely: 1) tutorial which requires the teacher to give first to study the material under discussion; 2) The use of computers as a means to develop diverse learning; 3) Audio and teleconference that eases communication activities directly through the internet.

The era of the industrial revolution 4.0 is a condition in which the digital world dominates human life in various fields. According to Davis (in Hasan, 2019, p. 62) revealed that there are several things that play an important role in this era, which is related to digital technology related to the Internet of Think (IoT), Artificial Intelligence (AI), cloud computer and cognitive disruptive.

The stages of the use of blended learning that are used in the learning process are carried out by identifying learning objectives, conducting competency analysis, studying students, developing learning activities, compiling technical assessment, learning strategies, learning development and evaluation (Bonk & Graham, 2012, p. 78). These stages become the basis for developing this research. The use of blended learning is used in eleventh-grade Indonesian History subjects with basic competencies analyzing and reasoning changes and political developments in the early days of independence. In this section aims to see the ability of students' knowledge and skills. This is in line with the benefits of blended learning to develop competencies. Blended learning process facilitates conventional learning that presents learning

media, teaching materials in the form of hard files, with learning that utilizes technology, learning media, and teaching materials can be made in digital form so that the media presented are also many and available in various formats (Thorne, 2003, p. 132). Meanwhile, Pape (2010) sees that the learning process can provide opportunities for students to develop critical thinking skills, problem-solving, communication, collaboration and global awareness.

2.2 Literasi Digital

Digital literacy is the ability possessed by an individual in using and utilizing technology by their needs and knowledge. According to Hassugin (in Anggraeni, Fauziah and Fahyatun, 2019, p. 192) the concern is addressed with one's ability to obtain, process and use information properly. Digital literacy is related to a person's ability to information and use it properly for people's lives (Hassugin in Anggraeni, Fauziah, and Fahyatun, 2019). Based on the two opinions above, it shows that in the development of digital literacy in outline two abilities become prerequisites, namely the ability of knowledge of information and processing it.

In the opinion of Eshet-Alkalai & Chajut (2009, p. 713) revealed that digital literacy is the ability to integrate various cognitive competencies with emotional skills through the use of digital technology. Cognitive abilities are related to students' knowledge and emotional abilities related to the way someone in sorting and selecting information accordingly. The process of interaction that occurs in digital spaces allows one to receive information with a variety of interpretations so that there needs to be someone's intelligence in determining the right way. According to Szewczak & Snodgrass (in Johnson, 2008) revealed that in communication activities via e-mail or chat rooms in the network there are parts where a person is required to evaluate digital messages which of course requires cognitive abilities.

The relevance of funding cognitive abilities with digital literacy is already reflected in the concept of digital literacy which includes: awareness, ability to use digital facilities by using stages of identifying accessing, managing, integrating, analyzing, evaluating so that they can become a constructive activity that can add new knowledge (Martin in Bawden, 2008, p. 27).

In the context of learning history, digital literacy can be a bridge in reducing the gap between learning material and students themselves (Honan, 2008). This is related to the history of learning material that discusses the past while the students who study it are students today so there is a need for ways that make it easier for students to understand it without being separated from the characteristics of scientific disciplines. According to Littlejohn, Beetham & McGill (2012) can be seen in how to obtain information where students learn to determine information by learning, have value benefits and so on so that the competency of knowledge and skills is formed.

3. METHODS

The method used in this research is quasi-experimental. The quasi-experimental method was selected to gain conclusions in hypothesis testing. Quasi-experimental research has an element of intentionality in creating influenced conditions that are subject to study to be controlled therefore that the analysis can influence whether or not there are variables (Arikunto, 2008, p. 151). The design chosen was Nonequivalent Pretest-Posttest Control Group Design. This scheme consists of two groups consisting of an experimental group and a control group. The population used in this study was students of Eleven High School Pasundan 3 Bandung and the sample taken in this study was 72 students. The subsequent is a chart design of the Non-Equivalent Pretest-Posttest Control Group.

Table 1. Quasi Design of Nonequivalent Control Group Design Experiment

Kelas	Pre Test	Treatment	Post Test
Experiment	Y_1	X	Y_2
Control	Y_3	-	Y_4

Source : Sugiyono (2011)

Information:
Y1: Pre Test is given to the experimental class
Y2: Post Test is given to the experimental class

Y3: Pre Test is given to the control class
Y4: Post Test is given to the control class
X: Blended learning in experimental class and conventional learning in control class.

This research variable consists of independent variables and dependent variables. The independent variable is related to using blended learning and the dependent variable is digital literacy. The following is the relationship between the independent variable and the dependent variable. This study applies to learning with a blended learning model that is done online by utilizing the LMS namely Google Classroom. The study was conducted during 4 activities, namely: 1) Pretest and posttest activities for the experimental class and the control class; 2) The second and third activities are carried out by giving treatment to the experimental class in the form of learning using LMS; 3) The fourth activity is to do a posttest in the experimental class and the control class. The research period was conducted in the middle of March to April 2020 with the details of data stabilization as follows:

Table 2. Connectedness table variable, data, target and time of data collection

No	Variable	Data	Target	Time
1	Blended Learning	observation	Teacher and Students	During the process of learning history
2	Digital Literacy	questionnaire	Students	The initial activity and the final activity of learning history

The instruments in this study were prepared based on the development of blended learning in history learning. Questionnaire and observation become instruments in obtaining data. The points contained in the questionnaire and observation develop into indicators which are the translation of blended learning by students. Before conducting research, the questionnaire that was compiled was tested first on 55 students to find out the level of validity and reliability. The digital literacy questionnaire consists of 19 numbers, with decision making namely: if r arithmetic ≥ r table (0.266) with a significance of 5% then the question items correlate significantly to the total score so that it is declared valid. As for the reliability test using the Cronbach's Alpa 0.878 test, with decision making based on the criteria that alpha is between 0.70 - 0.90, high reliability (Ruseffendi, 1998).

Data analysis in this study used the N-gain test, normality test and homogeneity test. N-gain is used in research to determine the effectiveness of using blended learning in history learning. Normality test is intended to determine whether the data generated is normal or not by using a significance value (Sig.)> 0.05 normally distributed data and if significance <0.05 the data is abnormally distributed. This also applies to homogeneity tests to see whether the data is normal or not. The next stage taken in this research is to do either parametric or non-parametric statistical tests to see which hypotheses can be accepted or rejected.

4. RESULT AND DISCUSSION

This study took two stages of testing, namely the assumption test and the statistical test. Assumptions test is related to determining whether or not the data are normally distributed and looking at the homogeneity of respondents. The assumption test results will determine the statistical tests used in the next process. In this study the results of the assumptions test used significance> 0.05 and likewise the homogeneity test used significance> 0.05. Based on the use of these numbers, if they are greater than the specified number, they can be said to be normal or homogeneous and if they get the figures under the terms, they are not normal or not homogeneous. The assumption test results determine the statistical tests used, in this study using parametric and non-parametric. The following is the result of the description of the data processing process.

Table 3 Normality and Homogeneity Test Results

Experiment	Normality test	Homogeneity Test	**Control**	Normality test	Uji Homogenitas
	Sig.	Sig.		Sig.	Sig.

Pretest	0.95	0.66	Pretest	0.277	0.003
Posttest	0.133	0.051	Posttest	0.225	0.004

The assumption test results were carried out for both groups namely the experimental group and the control group. The results obtained in the experimental group both pretest and posttest have a Fcount> 0.05 so that it can be interpreted that the data contained in the experimental group are normally distributed and homogeneous. As for the control group, based on the data above shows that the homogeneity test produces Fcount 0.277 and 0.225 or normal. But in the homogeneity test section Fcount counts 0.00 which means it is not homogeneous. This refers to the standard number used, Sig <0.05. Based on these conditions the requirements for conducting parametric tests are not fulfilled because there is one part of the assumption results that are not homogeneous, then the statistical test used in this study is a non-parametric test using Mann Whitney. The following are detailed results from the Whitney Mean Test, namely:

Table 4. Mann Whitney Test Results

	n	Symp. Sig.
Eksperimen	36	0.000
Kontrol	36	

Decision making in this Whitney Man test uses if Fcount <0.05 means there is influence. The table above shows that the Asymp Sig is 0.00 meaning that there is an influence in learning history using blended learning and learning history using a conventional model of digital literacy. The following is a graph of the average values obtained by students in both the experimental class and the control class.

Graph 1 Differences in the value of control and experiment classes

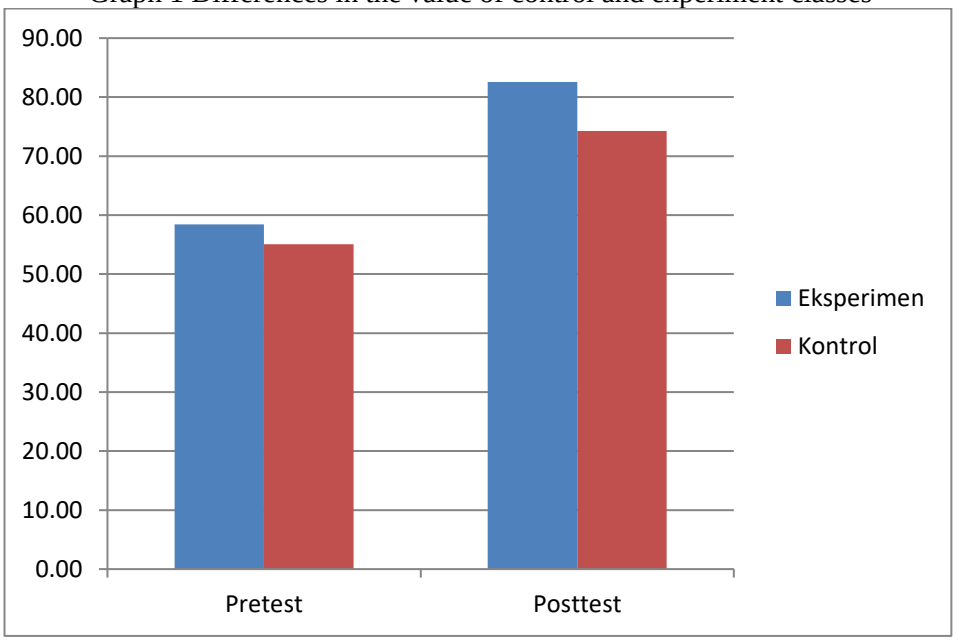

Table 5. Average data of N-gain digital literacy of students

No	Earnings Scores	Kelas Eksperimen	Control class
1	Highest N-gain	0.913	0.757
2	Lowest N-gain	0.190	0.075
3	N-Gain Average	0.561	0.419
4	Category	medium	medium

Based on the table above shows that the experimental class is in the medium category, as well as the control class. Moreover, the highest value in the calculation of N-Gain is in the experimental class which has a number of 0.913 or 91%, even though in the control class the

number shown is 0.75. This also happens in the control class, where the experimental class gets a high number. The average N-gain obtained in is 0.561 (56%) and the control class (0.419). The highest N-gain value gained from the experimental class is consistent with the activities observed that some students are wholehearted about the learning activities carried out. The learning time is set for 2 x 45 minutes but some necessitate additional time to sightsee the material of interest. But this does not apply in general so that in the experimental class there are still students who have not proficient prompt enlargement. As for the control class the activities are carried out online as well, but not many counsels are used such as the use of LMS, enough to use the chat application to be done conventionally with paper and pencil. Based on these activities, there is a proliferation and some are tranquil in the pretest and posttest.

The learning theory used in this study is a learning theory that ropes blended learning models. Constructivism converted one of the learning theories examined in this study. Constructivism is a learning theory that is constructed from cognitive theory and sociocultural learning theory. In blended learning students play an active role in developing knowledge that is based on learning in the network. Through this learning package books are provided to support learning and the use of power points to help students understand the material. Furthermore, another method used in the learning process that encourages students to build knowledge by assignments where students make sure of an exploration of learning resources but students can also rifle self-sufficiently and determine the feasibility of these resources in the learning process. Information obtained by students is assimilated into the context of the problems that exist in the assignment so that the activity also reliefs accommodate students thinking aptitudes. These activities are in line with cognitive theories which emphasize that a person's cognitive abilities are approximately active, where they constantly transform through the progression of interaction that occurs (Gredler, 2011). The interaction process that ensues either in the middle of students or with the teacher encourages students' thinking abilities, in this study the interaction that occurs is not done directly on the other hand through an intermediary media in the network.

The aspect of skills in this study is also a concern because it relates to digital literacy which not only demands students' knowledge but also the skills part. These skills are demonstrated by the ability of students to join LMS, to follow the process of activities carried out in learning, while also using virtual classes through online tools available on the internet. The series of activities carried out by students in the learning process through LMS facilitates different interactions because they are carried out in a network, giving opinions so that they can exchange ideas and knowledge. It also shows the character of students in the learning process that is influenced by various things, one of which is the social and cultural conditions of the community, therefore this study also uses the socio-cultural theory that emphasizes the importance of paying attention to how one's skills are in a group (Shunk, 2012).

The blended learning model in the learning process has advantages such as the convenience of students in accessing learning material and learning media because it can be accessed anywhere and anytime without space restrictions through the devices in their grasp. The learning process runs interactively because students exchange opinions through the LMS that has been provided. In addition, it indirectly increases literacy skills because learning is dynamic so students must first understand the ideas of their peers and the information they get so that they become interactive interaction activities. The description of the learning activities is in accordance with literacy skills formulated by Meyes and Fowler (in the Indonesian Ministry of Education and Culture, 2017) which explains that digital literacy is related to three competencies, namely: 1) Understanding concepts, having the ability to operate to find out appropriate behavior digital competence; 2) At the practical level, a person can implement digital capabilities in accordance with the discipline of the learning discipline; 3) Having the power of creativity and innovation in combining digital capabilities and the ability of scientific disciplines so as to develop the ability to follow up. In the third point, in this study the relative process undertaken by respondents has not yet reached the advanced level due to several limitations such as limited learning time. Within one day students can learn several subjects so that it is not possible for students to innovate in a very limited time. Development is carried out to digital competence and digital usage properly. This is in accordance with the socio-cultural theory that not only is someone affected by the environment, but someone can also influence

the environment with various supporting factors (Gredler, 2011).

Other benefits raised in learning activities using blended learning are able to remind students' skills, especially cognitive abilities, this is in line with Putra's (2012) which shows that there is an influence of blended learning with achievement, these conclusions are based on the static test conducted through two analyzes. In addition, Noviyanti's (2013) study also developed learning by using blended learning and self-regulating cognitive learning outcomes in social studies, where there is a student's ability to be more disciplined and independent network.

CONCLUSION

Based on the results of the study, it can be concluded that learning with a blended learning model on the digital literacy abilities of students in history learning has a significant influence with digital literacy in the control class. This can be seen in the N-Gain control class has an average of 56%, the figure is higher when compared with the control class. The significance obtained occupies a medium category. The results of observing the observation activities show that this happens because there are some students who are enthusiastic about learning blended learning using LMS, but there are some students who face problems when going to do asyncronus learning. This study also has limitations, especially the stability of the internet network which is not always good for the learning process. In addition, technical constraints sometimes occur in students and teachers where their devices cannot be used suddenly, repeat automatically and so that this becomes a suggestion for further research is to ensure that the devices can be used during the learning process and internet connection is well resumed. Implementation of blended learning for learning history provides benefits, one of which is access to learning media, learning material easily, but it also becomes a separate challenge for students and teachers to be able to determine the relevant and correct supporting resources.

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