

UNIVERSITY OF TAMPERE

**Use of Blended Learning in Teaching
Islamic History:
The Case of the 8th Grade of Sukma Bangsa School
in Aceh**

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This thesis is intended to introduce blended learning methods in Sukma Bangsa School, Aceh. The purpose of this study is to demonstrate the effectiveness of blended learning method specifically in the study of Islamic history, which is one of the main topics in religion education lessons in the 8th grade at the three different locations of Sukma Bangsa School. The topic was chosen due to the fact that Islamic history can be said too difficult to be understood by the students because its has many topics that must be learned by them.

This study uses quantitative methods and was carried out during the first semester of the school year 2015 -2016 in the three locations of Sukma Bangsa School. Research data was obtained through the pre-test and the post-test that were conducted at the beginning of the research and the end of the research. The total number of students in this study was 142 students: 57 students from Sukma Bireuen, 34 students from Sukma Pidie, and 51 Students from Sukma Lhokseumawe. To analyze the research data from the pre-test and the post-test, SPSS software version 23 was used which will present the statistical data.

This study used a temporary teacher who taught Islamic history for the 8th grade students in the three different locations of Sukma Bangsa School. Temporary teachers were used because the permanent teachers are currently pursuing studies. The temporary teachers did not have much teaching experience. Therefore, in this study, the researchers provided training on the use of blended learning and how to make the classroom more attractive. This training was done in stages, either directly or online.

The results of the study at the three different locations of Sukma Bangsa School show that although there was an increase in the average value and standard deviation, the statistics do not show a significant difference between the achievement of students in the blended learning method and in the face-to-face method. Therefore, an understanding of context by the teachers in the use of blended learning is needed to improve students' achievement results.

Key words: blended learning, face-to-face, e-learning, teaching method, Islamic history, Sukma Bangsa School

CONTENTS

1	INTRODUCTION.....	1
1.1	GENERAL BACKGROUND	1
1.2	RESEARCH QUESTIONS	2
1.3	OBJECTIVES OF THE STUDY	3
1.4	HYPOTHESES OF THE STUDY	3
1.5	DEFINITION OF TERMS	4
2	REVIEW OF RELATED LITERATURE	6
2.1	DEFINITIONS OF BLENDED LEARNING	6
2.1.1	<i>The Implementation of Blended Learning.....</i>	<i>8</i>
2.1.2	<i>The Benefits of Blended Learning.....</i>	<i>9</i>
2.2	THEORETICAL ROOTS OF BLENDED LEARNING.....	10
2.2.1	<i>Cognitive Theory.....</i>	<i>10</i>
2.2.2	<i>Constructivist Theory.....</i>	<i>11</i>
2.2.3	<i>Academic Achievement</i>	<i>12</i>
2.3	ELEMENTS OF BLENDED LEARNING	14
2.3.1	<i>Face-to-face</i>	<i>14</i>
2.3.2	<i>E-Learning.....</i>	<i>16</i>
2.4	SUKMA BANGSA SCHOOL	18
3	RESEARCH METHODOLOGY.....	21
3.1	DESIGN OF THE STUDY	21
3.2	VARIABLES	23
3.3	POPULATION.....	23
3.4	SAMPLE	24
3.5	PLACE OF THE STUDY	24
3.6	TIME OF THE STUDY	25
3.7	TEACHER TRAINING	25
3.8	RESEARCH INSTRUMENT	27
3.9	VALIDITY OF THE TEST.....	29
3.10	RELIABILITY OF THE TEST	30
3.11	DATA COLLECTION	30
3.12	ANALYSIS OF DATA	31
3.12.1	<i>Descriptive statistics</i>	<i>32</i>

3.12.2	<i>Inferential statistics</i>	32
3.12.3	<i>Paired sample t-test</i>	33
3.13	IMPLEMENTATION OF BLENDED LEARNING IN THE EXPERIMENTAL GROUP.....	34
3.14	IMPLEMENTATION OF TRADITIONAL LEARNING IN THE CONTROL GROUP.....	35
3.15	ETHICS.....	36
4	ANALYSIS OF DATA AND RESULTS	38
4.1	PART 1: THE PRE-TEST SCORE BASED ON GROUP AND GENDER.....	39
4.1.1	<i>Sukma Bireuen School</i>	39
4.1.2	<i>Sukma Pidie School</i>	41
4.1.3	<i>Sukma Lhokseumawe School</i>	42
4.2	PART 2: THE PRE-TEST AND THE POST-TEST BASED ON GROUP.....	44
4.2.1	<i>Sukma Bireuen School</i>	44
4.2.2	<i>Sukma Pidie School</i>	46
4.2.3	<i>Sukma Lhokseumawe School</i>	47
4.3	PART 3: THE POST-TEST SCORE BASED ON GROUP AND GENDER.....	49
4.3.1	<i>Sukma Bireuen School</i>	49
4.3.2	<i>Sukma Pidie School</i>	51
4.3.3	<i>Sukma Lhokseumawe School</i>	53
4.4	DISCUSSIONS.....	56
5	CONCLUSIONS AND RECOMMENDATIONS	60
	REFERENCES	62

1 INTRODUCTION

1.1 *General Background*

Blended learning as a learning method has been growing faster in the last several decades. It has appeared as a connecting bridge between a traditional method (face-to-face) and a long distance method (e-learning). Roscoe (2012) claimed that students who used a blended learning method got better results than those who used a face-to-face in a political course. Kazu and Demirkol (2014) stated that a blended learning method produced a more positive effect on achievement in 12th grade biology lessons than a face-to-face method. Ziden's et al. (2011) study found that there were differences in science subject achievement between males and females in the use of blended learning. In general, males' achievement were higher than females, since male students were more comfortable using computers. In contrast, female students had difficulties working with computers (Shaw, 1999, as cited by Ziden et al., 2011). In addition, Jong (2016) mentioned that the use of blended learning in understanding stoichiometry could help students understand earlier, for instance, through watching videos or downloading materials through the internet so then they can understand what they will learn. Hence, blended learning is an alternative to the traditional teaching method and could be included in Sukma Bangsa School.

Sukma Bangsa School was established in July 2006 and is located in three different regions, i.e., Bireuen, Pidie, and Lhokseumawe, in Aceh. In general, Sukma Bangsa School uses a traditional method in the learning process, both in science and social studies. The face-to-face method is a common method and a mainstay for teachers in Sukma Bangsa school for delivery of learning material. In most cases, to avoid boredom, teachers sometimes insert video, presentation slides, or playing games into the class content. One of the subjects taught at Sukma Bangsa schools is Islamic Religion at all levels i.e. elementary and secondary school. Religion studies in the 8th grade include five main topics: Islamic jurisprudence (fiqh), faith (aqidah), Islamic history, morals, and how to read the Quran (tajwid). The five main topics have also many subtopics, for instance, the pillars of faith, the pillars of Islam, Islamic history, and Islamic culture. The subtopic Islamic history is usually taught in the 8th grade. Teachers who teach that subject have some difficulties to explain and to deliver it. As a result, students cannot understand well and are unsatisfied with the

result. Besides, students easily forget what they have learned. However, the problem could be resolved if teachers understand another teaching method. In addition, teachers do not understand in depth the subject of Islamic history. For this reason, some students do not achieve the minimum score. It can be seen from the data of the school year 2015-2016 where the average value of the 8th grade in Islamic history was 50.22, while the male grade was on average 48.33 and female 53.21.

Based on the observations and interviews during this study with the Islamic history teachers in the Junior High School of Sukma Bangsa, we found that teachers are still using the traditional method in the learning process, where teachers only speak in front of the class and are also still using paper to give homework or an exam to students. Even though Sukma Bangsa School has good facilities, for instance, the internet, a multimedia room, and a computer laboratory, teachers and students are not using it optimally. Therefore, our study will focus on the effect of blended learning use in the 8th grade in three different locations of Sukma Bangsa School.

Ideas for the study come from an article by Vargas and Tian (2013), which explained that e-learning is more than a technology. As blended learning relates also to the use of e-learning, we hope that this study will be beneficial for the improvement of e-learning practice not only for creative education in Sukma Bangsa School but also Indonesian schools in general. Especially, the research on blended learning may give benefits in the learning process.

1.2 Research Questions

Blended learning as a teaching method has a positive effect on the learning process. It can be assumed that it would increase students' attainment and students' achievement. As the limitations of the study, the focus will be on the three questions. First, what are the differences in students' achievement in the understanding of Islamic history in the use of a blended learning method in the 8th grade at the three different locations of Sukma Bangsa School?. Second, what are the differences in students' achievement in the understanding of Islamic history between males and females in the use of a blended learning method and a face-to-face method in the 8th grade at the three different locations of Sukma Bangsa School?. Third, what are the perceptions of students and teachers in the understanding of Islamic history in the use of a blended learning method and a face-to-face method in the 8th grade at the three different locations of Sukma Bangsa School?.

Since this study is intended to examine the impact of using blended learning in the teaching of Islamic history, it will be done basically to identify the difference in the students' achievement between the experimental and the control group, particularly those of the 8th grade. The second question is to find out the differences in results between males and females, and the third question

is to find out teachers' and students' perceptions of the benefits of the use of blended learning in the subject of Islamic history, and simultaneously this will be used as hypothesis data support in this study.

1.3 Objectives of The Study

The main objective of the study is to improve the quality of teaching in the Sukma Bangsa Schools. There are indications in the earlier studies that blended learning might be one solution for improving classroom instruction. Consequently, we have chosen to study the effects of blended learning in student learning achievements in Islamic history. Hence, in core the specific objectives of this study are as follows:

1. To examine the different effects in students' achievement in the use of blended learning method and traditional method with regard to Islamic history in the three different locations of Sukma Bangsa School.
2. To determine the different effect of blended learning method in students' achievement between males and females with regard to Islamic history in the three different locations of Sukma Bangsa School.
3. To obtain teachers' and students' perceptions of the use of blended learning method with regard to Islamic history in the three different locations of Sukma Bangsa School.

1.4 Hypotheses of The Study

The hypothesis used in this study will basically be developed based on what Khan (2008) had developed in his writing "An Experimental Study to Evaluate the effectiveness of cooperative learning versus traditional learning method". Our hypotheses are:

1. H₀₁: There is no significant difference between the pre-test and the post-test score in the experimental group
Ha: There is significant difference between the pre-test and the post-test score in the experimental group
2. H₀₂: there is no significant difference between the experimental group and the control group on the post-test score
Ha: there is significant difference between the experimental group and the control group on the post-test score

3. H₀₃: there is no significant difference between males and females in the post-test of the experimental group
Ha: there is significant difference between males and females in the post-test of the experimental group
4. H₀₄: there is no significant difference between the experimental group and the control group on males post-test scores
Ha: there is significant difference between the experimental group and the control group on males post-test scores
5. H₀₅: There is no significant difference between the experimental group and the control group on females post-test scores
Ha: There is significant difference between the experimental group and the control group on females post-test score

1.5 Definition of Terms

Blended Learning

According to Thorne (2003) and Mortera (2006), blended learning is a blend between face-to-face learning and e-Learning. Garnham and Kaleta (2002) as cited by Al-Qahtani & Higgins (2013) defined that a blended learning such as a composite course from the learning method of a face-to-face and an online instructional activities.

Traditional Learning

According to Singh et al. (2009), “Traditional Learning is defined as a learning process where learners and experts are present physically in same place at same time. Most famous traditional way of imparting education since it has started is the chalk and talk method” (p. 3).

Islamic history

Islamic history is an interesting study that many researchers, Muslim or not, involve in the research to get benefit from it. Islamic history is a part of Islamic knowledge and it cannot be separated with the root of Islamic belief. According to Nata (2000), Islamic history is something happened in the past about Islam and it describes the development of Islam from the earliest stage until now. In the same way, Islamic history can also be understood as something true happened in many aspects of Islam.

Academic Achievement

Academic achievement is an accomplished knowledge or capability built from a lesson of school usually seen in the form of test scores by teachers (Good, 1973, p. 7).

2 REVIEW OF RELATED LITERATURE

2.1 Definitions of Blended Learning

The term blended learning has been used in the design of education, and some may seem unsure about the term. Some people are still questioning when they hear about blended, "what is being blended?". Some scholars have given a general meaning of the term or developed a definition which is close each other in meaning. Heinze and Procter (2006) stated that blend means a mix, together to enhance to be better or a formula to make a harmony or engaging. Whereas learning has a common meaning related to "learn", while learning has a general meaning connoted to that is learned, thereby at a glance implying learning pattern containing mixing elements, or a merger between one pattern with another pattern. Correspondingly, Mosa (2006) mentioned that blended learning mixes two elements, classroom lesson, and online learning.

Blended learning has a various definition from the expert. Mortera (2006) said that blended learning is a teaching method integrating between face-to-face and distance learning. Kanuka, Brooks, and Saranchuck (2009) stated blended learning can minimalize a limit on time, place, and situation but there has a good interaction between teachers and students. Thorne (2003) mentioned blended learning as a new innovation and a new solution in the learning process to develop human ability using technology through online learning with keeping their interaction and participation as well as face-to-face. According to Graham et al., (2005), blended learning has two types in the learning process such as, the traditional environment used in a rural area and learning distributed environment which grow up in a row with a new technology allowing expansion and distributed communication and interaction. In addition, Bhonk and Graham (2006) explained that blended learning is a combination of two models teaching and learning namely traditional learning system and distributed learning system which stressed the central role of technology in blended learning.

From some definition expressed above, generally the previous researchers define that blended learning can be interpreted as a learning merge or combine into face-to-face with ICT or combine aspects of web-based learning with traditional learning "face-to-face". In other words, blended learning is a learning method that combines face-to-face meetings with online materials in harmony. Blended Learning is designed for students who need a face-to-face learning in addition

to web-based learning. With the blend of learning methods, teachers and students can meet directly through online learning that can be accessed anytime, anywhere 24 hours a day, 7 days a week. With the application of blended learning students are expected to understand the material better and be more active in participating in learning, so that it can improve students learning outcomes. Online learning or e-learning in blended learning can be an extension of the traditional classroom lesson using face-to-face learning. Blended learning is learning to use information technology in the form of e-learning as a medium in delivering learning and to increase students' motivation to study in a more modern and attractive way. Blended learning process may be more effective because the learning process which is usually done using conventional or face-to-face will be assisted by a web learning or e-learning with information technology that can be done anytime and anywhere. Learning with blended learning can shift the principle of learning from the teacher-centered to students-centered. Blended learning is complementary learning lack of face-to-face learning and e-learning. Blended learning makes students' classroom activities become more varied. The learning process using blended Learning method might be occurred after school hours, specifically in the e-learning session. In the blended learning, the focus is students, and students learn independently in a specific time and responsible for their own learning. The atmosphere of the blended learning method can be said to force students to be more active in the learning process.

Using blended learning with combining face-to-face and e-learning needs willingness from teacher and student to achieve the goals. Driscoll and Carliner (2009) mentioned that using blended learning can integrate or merge a learning program in a different format to reach the general purpose. For teachers, they must prepare extra before the delivery of the learning material. In addition to uploading learning material in moodle, teachers must have a pedagogical skill to liven up the learning the process in face-to-face and online/distance learning. Rusman (2009) expressed blended learning is a combination of various approaches, so teachers must be able to combine two or more methods of approach in learning to achieve the objectives of the learning process. One of the examples is a combination of web-based learning approach and face-to-face simultaneously.

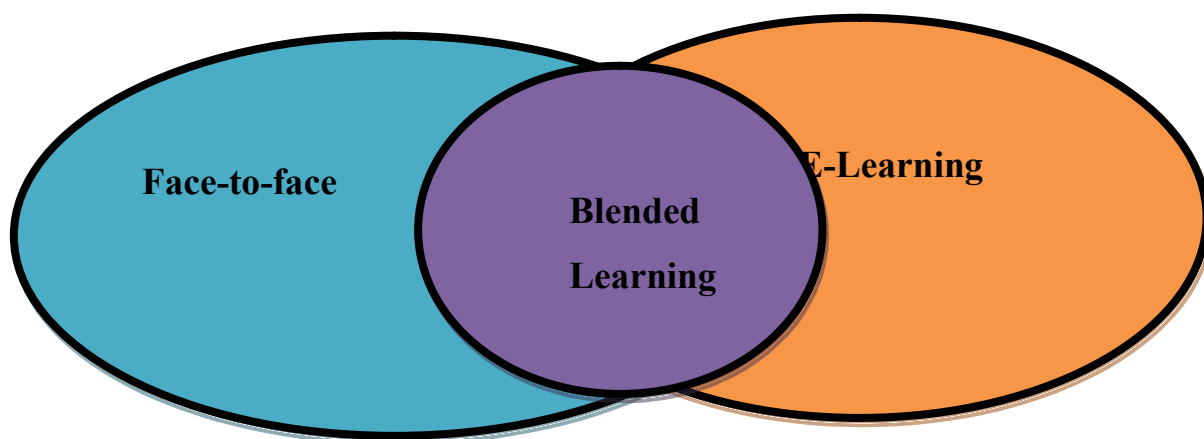


FIGURE 1. The illustration of Blended Learning

2.1.1 The Implementation of Blended Learning

According to Rusman et al., (2012), the implementation of blended learning in Indonesia is more used by the education administrator in the open university and distance learning. Previously, the administrator of education allowed an open university to make distance learning process, but now since the ministry of education published the decree NO.107/U/2001 (July 2, 2001) about distance learning process in higher education, the higher education having the capacity to operate an open education or distance learning using blended is allowed. The learning and teaching material is delivered using text, grafik, animation, simulation, audio, and video. In a traditional method, teachers are a person who knows anything to transfer her/his knowledge to students. Therefore, in blended learning the focus is students.

The implementation of the blended learning method in elementary and secondary is not necessary needed if the implementation is the same as in higher education. This is caused by the differences of approaches and teaching method mainly in higher education which operates distance learning. In the implementation of the elementary and secondary level, teachers must implement face-to-face in the learning process, but it doesnot mean that elementary and secondary can not use blended learning. They can implement blended learning, but its technical aspects can not be equated with the learning process in the distance learning. Liuk (2006) who conducted research in many schools in Estonia found that the characteristic of blended learning can not be determined by region or country. Schools who will implement the blended learning method should be supported by computer technology and the internet. In general, blended learning is used in 7-12 years (elementary) and 11-18 years (secondary). Others, Liuk (2006) found that there is no significant

difference between male and female in choosing entirety web-based learning or distance learning. The blended learning process will be needed when teachers will give the learning material, homework, or an assignment to students conducted after school hours. Prayitno (2015) mentioned that blended learning is needed when learning process is not only using face-to-face but also can be added with the internet, to make easier or faster the communication process between teachers and students. Teachers and students can be positioned as a learner and can help to accelerate the process of education by applying flip classroom based on information and communication technology.

In designing blended learning teachers should set the teaching materials that qualified to organize distance learning method, for instance, to prepare teaching materials that can be learned by the students, teaching materials that can be learned in face-to-face meeting, and teaching materials that can be learned through the internet. By preparing three conditions above, at least teachers will understand how to convey the teaching material and how students will accept it well including teaching materials that must be learned or managed by students or other supporting teaching materials. Teachers also must understand both hardware and software that will be used in blended learning. In addition, teachers should set criteria for students' assessment in blended learning. The criteria appointed is based on how long students will do the assignment and the level of difficulties. As the criteria deals about learning, teachers should have a standard evaluation in blended learning method.

2.1.2 The Benefits of Blended Learning

According to Dwiyoogo (2015) in the development of technology in learning method, recently there is no ideal method for all various teaching method because every technology has advantages and disadvantages. Printing technology has a flexible advantage as learning sources because it can be taken anywhere without the electricity. While a computer has an interactive advantage such as text, picture, film, animation, and it can be converted to the digital mode but the mobility is limited depending on the electricity. Hence, all kind of technologies have an advantage for special learning objectives and for the characteristics of a particular field. As well as a learning method in elementary can be effective, but it is not for higher level or vice versa. Hence, the different learning methods for different characteristics is needed.

To fulfill every learning needs with different characteristic using blended learning is most appropriate. Using blended learning allows learning process to be more professional to handle the learning needs with the most effective ways, efficient, and has high appeal. Dziuban et al.,(2004)

found that blended learning program is potential ways to increase students achievement and also decrease the dropout rate compared with a fully online method. Similarly, Husamah (2014) as reviewed by Noviansyah (2015) stated that the advantage of blended learning method can increase learning process the impact of which is to provide convenience to students to access learning material and also help them to increase their achievement.

2.2 Theoretical Roots of Blended Learning

Based on the previous study, blended learning method focuses on cognitive development, therefore, the underlying theory is cognitive theory and constructivist theory.

2.2.1 Cognitive Theory

The emergence of cognitive theory heavily influenced by behaviorist thinking primarily of research by Albert Bandura. Schunk (1996, p.118) found that people can learn or perform actions just by looking at what others are doing. Wiryokusumo (2009) stated that cognitive theory arose from the view of many researchers to various limitations in the theory of behaviorism because they consider that behaviorism can not effectively solve the problem of how people think. People who do not agree with behavioristic analysis assume that people are more than just a behavior they do. People can make a plan, have memory, can solve the problem, and make hypotheses. From those cognitive aspects Wiryokusumo (2009) also concluded that human beings cannot be seen entirely just by looking their behavior. In line with this, Alonso et al., (2005) stated that cognitive process is based on an understanding of how the brain works during the learning process and what factors are likely to influence success.

Cognitive activists believe that there is a need more to see people from various cognitive processes that they do like memory, attention, and reasoning. Therefore, cognitive arose from the need to understand more about the various processes of the human thinking. One of the effects in cognitive psychology is a digital computer. The behaviorists view that human cognitive processes can not be observed, so it may not be studied scientifically. But for the cognitive, a computer is a machine that has the cognitive processes that can be applied to modeling in a software. People started to write a computer code to duplicate a process of human thought as a step to develop an appropriate cognitive theory and could be tested (Wiryokusumo, 2009).

Budiningsih (2005) mentioned that the cognitive theory is a theory that is more concerned with the process of learning rather than learning results. This theory also emphasizes that the parts

of a situation are interconnected with the whole context of the situation. This theory also has a certain view that learning is an internal process that includes memory, retention, processing of information, emotions, and other factors. The Cognitivists focus are on the brain. They argued that how the human process and store the information is very important in the learning process. In addition, Ormrod & Davis (2004, p.152) claimed that cognitive theory considers that learning process in each person is different and unique.

2.2.2 Constructivist Theory

Gruber & Voneche (1977) as cited by Applefield et al., (2000) stated that the term constructivist is commonly known from the view of Piaget. Constructivist theory is a theory that arose from the result of deep thinking of cognitive theory because of the widening of the cognitive perspective (Pritchard, 2013, p.17). Constructivist theory is based on an idea that people create knowledge based on what he/she sees and feels (Al-Huneidi and Schreurs, 2011). However, Schunk (1996, p. 229) explained that the constructivist, seen from the perspective of psychology and philosophy, will create human thinking based on what he/she learned and understood. Constructivism itself sees learning as a process in which the learner is actively building or constructing a new idea or a new concept based on knowledge owned in the past or recently. Therefore, a constructivist approach in the learning process is based on the fact that each person has the ability to construct again the experience or the knowledge he had.

Rangkuti (n.d.) stated that constructivist theory was developed by many experts such as Piaget and Vygotsky. Piaget assumed that each individual constructs his/her own meaning through the process in her/his self, while Vygotsky assumes that individuals construct their own meaning through a social interaction process that has been done. Those are what can be said as a stream of constructivism. Rangkuti (n.d.) also stated in the constructivist view, learners can act as a shaper and transformer of knowledge. There are four characteristics of learning in constructivism. First, any learning process has been formed independently by students. Second, the relationship between a new understanding is taken from previous understanding. Third, the existence of social interaction rules. Fourth, the need for meaningfulness in learning. These characteristics can be defined as an approach where individual learners are able to find, acquire, and transform the information obtained as a more complex knowledge. Therefore, the constructivist's approach makes students as learning-centered.

Wiriyokusumo (2009) stated that constructivist learning emphasizes some things. He explained that good learning is based on a situation where students can solve problems, cases, or

tasks that teachers give. Students also have been constructed and supported by teachers throughout the learning process. When students' ability has grown, teachers' support could be eliminated slowly so that students are able to learn independently. One of the examples of constructivist learning is a problem-based program. In blended learning students will inevitably have to raise constructivism in itself because teachers in the learning process did not necessarily transfer knowledge to students in the form of an all-around perfect. Students need to build knowledge based on their experiences. So that students truly understand and can apply the knowledge, they should work to solve problems, find everything for himself, try desperately to get ideas. New knowledge is constructed by the learner activity based on knowledge that has been acquired previously. Instead, teachers can provide convenience to this process, by providing opportunities for students to find and implement their own ideas, and to teach students to become aware of and consciously use their own strategies for learning.

2.2.3 Academic achievement

An understanding of academic achievement in seeing students' result is varied. Experts still disagree about the meaning and definition of "academic performance", "academic achievement" and "learning outcomes" as a way to measure student learning outcomes (Yusuf, 2002). Simpson and Weiner (1989) in their study as cited by Yusuf (2002) defined performance as something that can be measured or observed from a person or animal based on a particular situation. Therefore the required criteria are used to measure performance in the situation. Singer (1981) and Dever (1981) as cited by Yusuf (2002) stated that those criteria are to perform mental tests by asking subjects to do something to deal with a case rather than just a symbol.

Tests are usually made as a standard to measure skills in school subjects. Academic achievement is usually measured in relation to what was achieved at the end of the subject matter. Steve (2000) as cited by Yusuf (2002) claimed that the results of academic achievement are the result of the ability of students (learning outcomes) generated by the school. These learning outcomes should be a hallmark to see the quality of the teaching process in the school in general. When learning outcomes produce something good, it could mean that the process of teaching occurs in the schools. Hamalik (2001) argued an understanding of the results in learning as some vital lessons which work as a change in a person's behavior which can be observed and measured in terms of knowledge, attitudes, and skills. The change can be interpreted as the improvement and development toward a better condition than ever before.

Because of the wide range of academic achievement, in this study and as a limitations, we will discuss learning achievement. Learning achievement is a phrase consisting of two words, namely "achievement" and "learning", with different meaning. To understand more about the terms of learning achievement, the researchers describe the meaning of both words. Achievement is an activity that has been done, created either individually or in groups. While Djamarah (1994) stated that achievement is what has to be created, the work, the results are pleasing and obtained by persistence in working.

Wasty (1998) defined that learning is a process by which behavior is caused or changed through practice and experience. Learning is an activity that is consciously and regularly done by someone who will change both individual knowledge, skills, attitudes, and behaviors resulted from the process of training and experience of the individual in their interaction with the environment. Hence, learning achievement is the result achieved by students during the learning process in a certain period of time. Generally, learning achievement in school provides a grade (in number) given by teachers to students, which works as an indication of the extent to which students have mastered the subject matter being presented. In this case learning achievement is expressed with numbers, letters, or sentences in a certain period.

Tests commonly used to record students progress during instruction is called formative tests. This test is developed to measure the extent to which a particular section of the lesson has been understood by students, such as a unit or a specific chapter in the textbook. This test can be questions, quiz, or a test of a unit of study. These tests all give emphasis on measuring learning outcomes that are intended to achieve and use test results to improve teaching and not merely to give the value (Gronlund, 1985). The purpose of this test is to identify successes and failures of students to learn, so it can be adjusted to the learning process.

The presence of learning achievement in human life at certain levels and types can give satisfaction also in humans, particularly that of the school. Therefore, learning achievement has several functions.

- a. As an indicator of the quality and quantity of knowledge held by students.
- b. A symbol of desire to know. Based on the assumption that psychologists stressed this case as a tendency curiosity and common human needs.
- c. Information material in educational innovation. The assumption is that learning achievement can be pushed for students to improve science and technology, and act as feedback to improve the quality of education.
- d. An internal and external indicators in education. The indicator means that the learning achievement level of productivity used as indicators of an educational institution. The

assumption is that the curriculum used is relevant to the needs of the community and participants.

- e. An indicator of the absorption capacity (intelligence) protege. In the learning process of learners are the main problem and the first, due to educate participants are expected to absorb all the subject matter that has been programmed into the curriculum.

Cronbach (1985) said that the usefulness of learning achievements are manifold, relying on experts and versions, as follows:

- a. as feedback for educators in teaching.
- b. for the purposes of the diagnostics.
- c. for the purposes of guidance and counseling.
- d. for the purposes of placement or majors.
- e. for the purposes of selection.
- f. to determining contents of curriculum.
- g. to determine the wisdom.

2.3 Elements of blended learning

2.3.1 Face-to-face

The traditional method of learning or conventional method or face-to-face method is a meeting between teachers and students physically in a classroom used before technology came. Teachers will stand up in front of the class and students sit on their chair. This method is a common method that teachers used and called teacher-centered. Consequently, teachers need more pedagogical skill in this method.

The face-to-face method places teachers as main knowledge or teacher-centered and put students as passive knowledge receivers. Students' knowledge will depend on teachers. Vice versa, some students who have a good understanding to receive lesson felt unsatisfied. Most students will find curiosity hampered or delayed because of the teaching process centered on teachers. Hence, learning as the main learning function will be disturbed.

Using the face-to-face method in the learning process has advantages and disadvantages in the implementation. Below, we will express some advantages and disadvantages of face-to –face method.

The Advantages of Face-to-Face

Traditional method or face-to-face or conventional is a favorite teaching method in learning the process. The method believes that frequent interaction in class would make teachers and students understanding the ultimate goal of learning. Teachers will explain and students will ask immediately if they do not understand. Jaggras (2014) found that some of the students felt they will get quick response and detail answer from teachers. In contrast, this will not happen in e-learning. Moreover, using face-to-face will give the emotional relationship between teachers and students because teachers are not only concerned with the academic progress of their students but also shaping students' character.

The Disadvantages of Face-to-Face

Since teachers are senior as a single source of knowledge in the learning process, in the case of teachers who does not come to the class the knowledge transfer will be delayed. Even though there have substitute teachers but usually, this will give bad impact to students motivation. This method is only making students as a passive object. Research conducted by Al-Qahtani and Higgins (2013) found some disadvantages of face-to-face, for instance, making students as learners are less self-directed and student-centered learning as well as limitations in serving the specific needs of students. In addition, in the method of face-to-face, students usually get bored with the delivery of material that is merely a lecture course.

How to Make Face-to-Face More Attractive in Blended Learning

A face-to-face method that will be used in blended learning is actually no different from the face-to-face in general or the traditional method. The difference is the use of technology in face-to-face method. With the use of technology in face-to-face, teachers are expected to turn on or relieve boredom student of tasks online that they get.

The things that teachers can do to make the classroom atmosphere during the sessions of face-to-face in blended learning for example, as the main one is the existence of the computer/laptop connected to the internet network, teachers can also create or looking for a computer game that contains contents according to the material while it is being taught, it could also create an interactive quiz that can make students more interested in learning materials, and divide the students into groups to discuss a particular case (Tao et al., 2011). Class layout settings such as students seating arrangements can also be done by teachers so that students do not feel bored with studying and or teachers can also use the outdoor classroom in order to create an atmosphere of togetherness and students also can help each other to understand the subject matter.

However, the creativity of teachers is needed during the sessions of face-to-face so that students do not get motivation after they work online.

2.3.2 E-Learning

E-learning is consisted of two parts, namely 'E' which stands for 'electronic' and 'learning'. E-learning means learning with the help of electronic devices. Tafiardi (2005), Ibrahim and Suhardiman (2014) mentioned in its implementation, e-learning using audio components, video or computer device or a combination. In other words, e-learning is a learning which in practice is supported by technological services such as telephone, audio, videotapes, satellite transmissions or computer. Horton (2000) claimed that e-learning is an activity of web-based learning which can be accessed from the Internet. This is not much different with Brown (2003) who simply said that e-learning is a learning activity that utilizes a network (Internet, LAN, WAN) as a delivery method, interaction, and the features supported by various other forms of learning services.

E-Learning methods or commonly called a long-distance teaching method emerged as a reaction to complaining students against the use of face-to-face. From previous studies on distance learning or e-learning shows that students feel comfortable and interested in using e-learning for learning as the time can be adjusted (Jaggars 2014, Aslanian and Clinefelter, 2013, Benbunan-Fich and Hiltz 2003, Farris, Haskins, and Yemen 2003, Hittelman 2001, Flowers and Cotton 2003, Kariya 2003, Noel-Levitz 2006). However, some studies also show that although distance learning an alternative to face-to-face, some disadvantages arise in practice.

During the session on distance learning in blended learning teachers must be able to prepare properly content in the presentation that can stimulate interest in children's learning, preparing learning resources in the form of video and audio, and set up the links that suit the material or the online learning resources other (Rovai, 2004). Vargas and Tian (2013) stated that the application of distance learning must be greater than the meaning of the technology itself. Characteristics of e-learning itself can be seen from the use of technology to get information or communication made between teachers and students. The utilization of computers and computer media network will broaden the range of learning locations with a limited number of students. This is caused by the use of e-learning that can be done anytime and anywhere. Additionally, Rovai (2004) stated that distance learning is a method that can accommodate the limitations of time, location, space, participants, and may ask the mentor without need for face-to-face.

The Advantages of E-learning

E-learning enables both teachers and students, easy interaction between learners with material/subject matter. Learners can share information or opinions about various matters relating to the development needs lessons or self-learners. In addition, teachers can put learning materials and tasks that must be done by students in a particular place on the web to be accessed by learners. By request, teachers can also provide opportunities for learners to access learning materials and specific exam questions that can only be accessed by learners in a specific time span. Therefore, the use of e-learning should be maximized by the students in the learning process.

Klein & Ware (2003) stated that the e-learning facilitates each learner to study according to what they want and what they need. This means that each student, anyone can learn anything they wish. Al-Qahtani & Higgins (2013), Al-Musa and Al-Mobark (2005) mentioned that the e-learning methods can reduce travel costs to get to school because e-learning does not need special classrooms. In addition, Al-Qahtani & Higgins (2013), Hameed & Cullen (2008) also explained that e-learning provides the opportunity for students rarely or afraid issued an opinion in the classroom for active discussion online. The same is delivered by Al-Huneidi and Schreurs (2011) who noted the advantages of e-learning include learning time is flexible and could be anywhere, minimizing the cost of the use of classrooms, provision of material quickly, and serve the number of students unlimited. In addition, Khan (2005), Al-Qahtani & Higgins (2013) stated that e-learning is an innovation in learning, interactive, making people learn as a center of learning, and facilitate learners' needs wherever and whenever.

The Disadvantages of E-learning

Although e-learning provides many conveniences for students as it will be difficult to reach if the area does not have a computer or internet facilities. Less intense interactions between teachers and students sometimes make students reluctant to complete their online tasks. Roscoe (2012) in his study found that students who take a course online are usually not completed the study. Marc (2002), Al-Qahtani & Higgins (2013) mentioned that cheating students in answering the questions could have been due to the work tasks online. Besides that, Al-Huneidi and Schreurs (2011) mention that several weaknesses in e-learning is less frequent among teachers and students to meet and low desire of students to complete the task.

2.4 Sukma Bangsa School

With the background of tsunami disasters occurred on 26 December 2004, affecting thousands of school buildings destroyed and thousands of people lost their lives. As is known, about two thousand and five hundred teachers are reported to have died (Media Indonesia, January 7, 2005), plus the number of lecturers who became the victims of the tsunami. The University of Syiah Kuala - one of the reputable universities in Aceh reported that about one hundred and three lecturers died and ninety-two missing (Media Indonesia, January 11, 2005). Then the government with the private sector and foreign institutions gave great attention in rebuilding the educational facilities in Aceh. They are intensively involved in the rehabilitation and construction of school buildings, provision of education in emergencies, and mental development of Aceh children who suffered psychological trauma after the disaster.

Within this framework, the Sukma Foundation participated in the development programs of education in Aceh. Sukma Foundation initiative was realized by building three schools (Sukma Bangsa School) in three districts in Aceh, namely Pidie, Bireuen, and Lhokseumawe, and one school in Nias, North Sumatra. Certainly, there are a number of reasons why Sukma Foundation oriented to the development of quality and the potential of children. One fundamental reason is the long-term aspect of usability of public funds collected through "Program Indonesia Menangis" Metro TV for a few months after the tsunami.

Sukma Bangsa School, which was built in the post of the reconstruction of Aceh on December 26th, 2004, formally began the learning process after inaugurated by the President of the Republic of Indonesia, Susilo Bambang Yudhoyono, on July 14th, 2006. Sukma Bangsa School was dedicated to the development of the people of Aceh and Indonesia generally. On that basis, besides maintaining the standard qualification of the school quality, the learning process done in Sukma Bangsa School is also directed to uphold the values of Aceh, Islamization, humanitarian, and Indonesian in general. All of these values work as the basis of orientation and the direction of the learning process in the schools.

Vision

The vision of Sukma Bangsa School is "creating a positive educational environment for the children of Indonesia in Nanggroe Aceh Darussalam to improve the quality of Indonesian human resources having a good academic ability, skill, and morality".

Mission

The mission of Sukma Bangsa School is to conduct of the dynamic learning, creative and participatory, which is able to develop a potential range of students; equip students with the content knowledge, life skills, and social skills; and arose the potential leadership, and the open mental attitude and tolerant.

Objectives

The objectives of Sukma Bangsa School are:

1. Establishing independent learning communities, intelligent, and civic values.
2. Developing students' ability to possess knowledge in science, technology and social culture, and to have social sensitivity, independent personality intellectually, emotionally and spiritually.
3. Implementing the transparency and accountability of school management.
4. Encouraging community participation in community-based learning.
5. Constructing the center for educational development around Sukma Bangsa School.

Curriculum

The curriculum used in Sukma Bangsa School is the 2006 National Competency-Based Curriculum (CBC) and the National Curriculum 2013. In practice, it would be seen as a dynamic and flexible curriculum documents that are responsive to local needs and sensitive to each others development of science taught. On that basis, the learning process will be focused on the establishing students' understanding of science concepts (content knowledge), the development of creative thinking ability, critical, analytical, and oriented toward problem solving (thinking skills), vocational skills, entrepreneurship, and leadership as well as planting appreciation to art and culture.

Facilities and Equipment

Sukma Bangsa School has a good infrastructure and provides the needs for support of a good education. Here are the facilities and infrastructure:

1. Classrooms (Elementary, Junior High & High School)
2. Libraries
3. Laboratories
4. Dormitories
5. Offices

6. Compound Managers Office
7. Compound Staff Room
8. Meeting Rooms
9. Function Rooms (Counseling Room, Office for Students Representatives, Clinic, School Committee & Community Room, Extra-curricular Activities Room, Reception Area, Guest & Parent Reception Room, Art Room, Function hall, Music Room, Store, Mosque, Residence)
10. Equipment – IT System (Baedowi et al., 2005).

In summary, the blended learning method is a combination between the face-to-face method and the e-learning method. The blended learning method is basically the excellence of the two learning method, the face-to-face, and the e-learning method. The blended learning method emphasized that students should be an active participate in the learning and they can build their own knowledge. Students built their own knowledge based on what they have seen and what they have learned, and then they try to create new knowledge. The blended learning method accommodated students to learn what they will learn regardless of the time and space. Hence, in the blended learning method, students can organize their own knowledge, and the learning process is more important than the results.

Budiningsih (2005) stated that the cognitive theory is a theory that is more concerned with the process of learning rather than learning results. The blended learning method encouraged students to think that the learning is important for their future life. Students can learn anything. The other benefits that students can get from the blended learning method, they still have a chance to meet the teachers in the class. Hamalik (2001) claimed that the learning process can change human behave, and it can be viewed and measured within the knowledge, attitudes, and skills.

3 RESEARCH METHODOLOGY

This study aims to evaluate the effectiveness of blended learning use in teaching Islamic history in the 8th grade of Sukma Bangsa School. The chapter is divided into the following topics:

1. Design of the Study
2. Variables
3. Population
4. Sample
5. Place of The Study
6. Time of The Study
7. Teachers Training
8. Research Instrument
9. Validity of Test
10. Reliability of Test
11. Data Collection
12. Analysis of Data
13. Implementation of Blended Learning in the Experimental Class
14. Implementation of Traditional Learning in Control Class
15. Ethics

3.1 *Design of The Study*

This research is a quantitative research using an experimental approach. According to Sugiyono (2010, p. 72), an experimental research can be interpreted as the research methods used to find a specific treatment effect compared to the other with a predetermined condition. In this experimental study, the researchers control or manipulate the group treated and measure the effect of the treatment. In other words, the researchers examined whether the treatment given has effected to the results of the study. In all experimental studies, participants were² divided into two groups, the first group is the group that receive a treatment [experimental group] and the second group is the group that does not receive any treatment [control group]. The results of the research

or the bound variable measured by tests or instruments that produce a quantitative data (Lodico et al., 2010, p. 28-29).

Based on Creswell (2002, p. 332-333), Louis et al. (2007, p. 275-280), the experiments of this study will use a pure experimental study design in which there is one control group and one experimental group. The activities in this research were selecting participants to control the groups, giving pre-test to the experimental group and the control group to ensure equality, giving post-test to both groups to see the effect of treatment (outcome), providing one or more interventions to the experimental group, isolating and manipulating the independent variable (treatment), and preventing the contamination between the control group and the experimental group. Researchers collected the pre-test scores, in order to compare the net score between the pre-test and the post-test. Researchers will connect the pre-test scores of the control group and the experimental group to see if they are statistically not different, then carrying out the post-test for both groups.

In this study, an experimental model was used the pre-test and the post-test. Both groups (the experimental group and the control group) were tested early before the experimental performed to measure the initial state (O1). After that, the experimental group was given treatment (X), while the control group was untreated. Then both groups were re-tested (post-test = O2) after treatment completed. The post-test was used to see the differences in learning outcomes between the experimental group and the control group through a t-test. The illustrations can be described as follows:

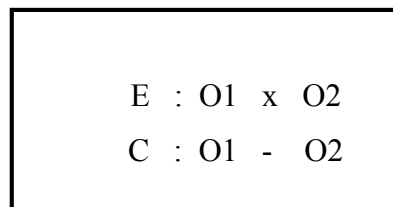


FIGURE 2. The illustration of the experimental research

where:

E = Experimental group

C = Control group

O1= Initial state

O2= The final condition after treatment is given

X = Treatment

- = Untreated

The difference between the group shown by O1 x O2 in the experimental group compared with O1-O2 in the control group (Cohen et al., 2007, p. 279).

3.2 Variables

According to Sugiyono (2010, p. 39), a research variable is an attribute or a character or a value of people, objects or activities that have a certain variance defined by the researchers to learn and then drawn the conclusions. In this study we distinguish variables as follows:

Independent variable

The independent variable is a variable that affects dependent variable. It happens because of the changes or the emergence of the dependent variable. The independent variable in this study is teaching method and it is divided into:

- a. an experimental group: using blended learning method (X1).
- b. a control group: using face-to-face method (X2).

Dependent variable

The dependent variable is a variable that is affected or changed due to the independent variables. In this study, the dependent variable is students' achievement (Y).

Controlled variable

A Controlled variable is a variable that is used as a treatment analysis material in experiment conducted such as, teacher, time, and classroom conditions

3.3 Population

In line with the objectives of this study to perceive the effect of blended learning used in Islamic history in Sukma Bangsa School, the participant i grade n this study is students in the 8th from all location of Sukma Bangsa School. The total population of the students in Sukma Bangsa Bireuen is 57 students (30 males and 27 females), the total population of students in Sukma Bangsa Pidie is 34 students (9 males and 25 females), and the total population of students in Sukma Bangsa Lhokseumawe is 51 students (25 males and 26 females).

3.4 Sample

Before implementing an experimental class, students in the three different locations follow the pre-test, which aims to map the students' ability in Islamic history. The pre-test and other academic data, such as the report in the second semester of the religion lesson when they were in the 7th grade, become the basis to determine the experimental group and the control group. Study participants were selected randomly and used the multi-stage sampling technique. This is a technique to control the differences that may arise between experimental research participants. By using this technique, researchers believe that we can get the heterogeneous participants with different backgrounds and experience evenly distributed between the two groups of the research.

Based on the academic data above, in the first stage of multi-stage sampling, researchers randomized classes by grouping students into three categories; high category, medium category, and low category. Students in each category will be sorted from the highest to the lowest score. Furthermore, in the second stage, students in the first row will be joined in the experimental group (using blended learning), students in the second row will be joined in the control group (using face-to-face), students in the third row will be joined in the experimental group, students in the fourth row will be joined in the control group, and so on until all students are divided into both group of research.

The result of random group for Sukma Bangsa Bireuen was 28 students into the experimental group and 29 students in the control group, Sukma Bangsa Pidie was 17 students in the experimental group and 17 students in the control group, and Sukma Bangsa Lhokseumawe was 26 students in the experimental group and 23 students in the control group. Furthermore, the diversity of two research groups were tested again using independent sample t-test to obtain a group that heterogeneously and with the impartial ability.

3.5 Place of the study

The study was conducted in Sukma Bangsa School in the three different locations: Junior High School of Sukma Bangsa Bireuen, located at Medan-Banda Aceh street, Cot Keutapang village, Jeumpa Bireuen district, Aceh; Junior High School of Sukma Bangsa Pidie, located at Medan-Banda Aceh street, Meunasah Balee Pineung village, Peukan Baro Pidie district, Aceh; and Junior High School of Sukma Bangsa Lhokseumawe, located at Medan-Banda Aceh street, Panggoi village, Lhokseumawe City, Aceh. Researchers selected the students of the 8th grade in the first semester of the school year 2016-2017. These schools were chosen as they have the same

characteristics and more or less similar ability; moreover, the schools have complete facilities included internet hotspot area, computer laboratory and LCD. These facilities support the learning process by applying blended learning in Islamic history subject.

3.6 Time of the study

The researchers needed five weeks to collect the material of Islamic history subject as the data research. The first week was for pre pre-test, randomization classes and guidance to teachers and students about the use of e-Learning. The second until the fourth weeks (3 times meetings) was the implementation of the experimental (blended learning) and the control group (face-to-face) with 3 hours per week (3 x 40 minutes) for Sukma Bangsa Bireuen and Lhokseumawe, but in Sukma Bangsa Pidie the duration was 2 hours per week (2 x 40 minutes). This difference is due to the condition in Sukma Bangsa Pidie as a semi dormitory, where there are only some students who live in the school dormitory. Students who do not live in the dorms sometimes stay in the dorms to come and learn together with their friends, if they have difficulties in understanding the lessons in the school.

In the fifth week after the completion of the delivered material to students, students did a post-test, both the experimental group and the control group. Researchers did the research and retrieved the data in the three different locations, starting from the first week of September until the last week in October 2016 with the following details of research: at the Sukma Bangsa Bireuen began in the first week of September and ended in the first week of October 2016, while in Sukma Lhokseumawe and Pidie the research began in the last week of September and ended in October 2016.

3.7 Teacher Training

In this study, the blended learning method was used in learning of Islamic history with the topic "The history of science during the Umayyad Daula". This study used temporary teachers. The teachers that used in the three different locations of Sukma Bangsa School were novice teachers who did not have much experience in teaching. The reason why researchers using temporary teachers is because the permanent teachers who teach in religion studies continuing his studies at the master level. Therefore, to make the novice teachers understand the methods of e-learning and blended learning, researchers gave them the treatment.

A treatment or training session was given to teachers of religion studies at the 8th grade in the three different locations of Sukma Bangsa School. They were given training session or a treatment before and during the experimental process. A Training or treatment administered for several times, so the teaching in the classroom using the e-learning and the face-to-face run well. The treatment or a training session was run according to the following schedule:

First meeting: discussed about the duration of the implementation of the study, the subjects being taught and the class or students to be used as a research class. Teachers received training on the use of e-learning, uploading materials to be delivered in the experimental class and make rules that will be applied to research class.

Second meeting: researchers provided training to teachers on how to run the discussion forum on e-learning, to create and upload some types of problems as well as to apply the method of face-to-face were varied by discussion and question and answer session in learning. Researchers also trained students of the experimental class for the use of e-learning

Third meeting: researchers and teachers discussed a lesson plan for the experimental group, the plan included the instructional goals and the list of materials needed to carry out the study. Teachers were prepared learning materials in the form of power point, video, etc with a suggestion from researchers. Furthermore, teachers leaded the students to use e-learning in the learning process, such as having discussion forums, answering some questions, and accessing supporting materials.

Fourth meeting: teachers prepared a lesson plan for the control group. A lesson plan outlined for the control group was focused on reading the same material in accordance with the instructional procedures (the activity) recommended in textbooks. The procedures were organized in the three stages of lesson planning: opening, instruction and participation, and closing. These stages provide an opportunity to learn and work on a variety of purposes in reading, writing, and understanding the material presented using a variety of instructional techniques such as discussions, lectures, and working groups.

Fifth meeting: researchers gave some direction to teachers to hold several strategic approaches in the learning process that the subject matter can be delivered and well received within the time planned.

Sixth meeting: researchers directed teachers to conduct reviews on materials that had been delivered. Furthermore, students were arranged to follow the post-test, a booklet given to them and some students were randomly chosen to be interviewed by researchers after they completed the post-test.

3.8 Research Instrument

In this study, the instrument that used in the research process of data collection was an instrument with a test form. Tests conducted by researchers in a form of written test was an objective test with multiple-choice test forms (multiple choice item) and essay. This instrument determined the level of understanding and mastery of the concept of Islamic history on the topic " The history of science during the Umayyad Daula". In the form of a multiple choice test instrument, students answered 20 items multiple choice questions with four answer options and 5 essay questions. The score for each multiple choice questions was 3, so the total score for the multiple choice was 60. The score of each essay was different, for instance, question 1 was 4, question 2 was 6, question 3 was 8, question 4 was 12, and question 5 was 10. The total score for the essay questions was 40. In this study, the instruments were given namely:

Pre-test

The pre-test was conducted before the learning began and was given to the experimental group and the control group with the same instrument.

Post-test

The post-test was conducted in the last meeting when all the indicators were already delivered by the teachers. In other words, the post-test is given to students after being given treatment of a sample group. In starting this study, researchers with teachers who teach the Islamic history discussed and worked together to make questions that will be used as pre-test exam to students in the 8th grade. This was done to enable the common understanding between researchers and Islamic history teachers on the topic that will be presented in the classroom. The questions were prepared based on the handbook of students and teachers in Islamic history.

The correct instrument will allow researchers to obtain valid data, the accuracy and trustworthy. The minimum requirements to be met by a research instrument were of two kinds: the validity and the reliability. The validity and the reliability testing were used to determine the ability of the instrument to reveal the actual data to make it easier for researchers to solve examined problems. Therefore, we determine the value of reliability and validity as the basic guidelines for getting a right and good instrument on the questions that we used in the pre-test and the post-test. Besides using the pre-test and the post-test instruments, researchers also used the instrument of class observations and interviews with teachers and students at the end of the

research. The data obtained from observation and interview only used to support obtained results from the main instrument the pre-test and the post-test.

Interviews

An interview with students and teachers was conducted to get an opinion about blended learning process. Interview in this study was conducted twice. First, during the research in the classroom to get the early students' and teachers' perception in the use of blended learning method and to find out difficulties encountered when they used e-learning, to observe the improvement process in reducing the problems that may arise and to encounter the implementation of blended learning after the post-test. The second stage of the interview was conducted after the post-test. It was done to complete the information about overall perception of students and teachers during the use of blended learning. The data from the two stages of interviews were used to obtain the perceptions of students and teachers to see the advantages and the disadvantages in the use of blended learning method, and it will be recommended to Sukma Bangsa School.

Piloting Tests

Before obtaining the correct instruments, formerly, researchers tested the validity two times. Firstly was in Sukma Bangsa School and secondly was in Junior High School (SMPN) 3 Bireuen. We made two types of question as a comparison. The first type consisted of 15 multiple choice and 5 essay questions, and the second type consisted of 20 multiple choice and 5 essay questions. In the two types questions, there were questions same and different. The first validity test conducted in Sukma Bireuen School by the number of students 57. The test used 20 multiple choice and 5 essay questions. The results from Sukma Bireuen School showed five questions with the validity value under 0.3. They are number 1, 4, 9, 16, and 19. After the removal, the cronbach alpha value is 0.614.

Subsequent to the removal, we re-used the questions with the validity value above 0.3 and made some new questions which will be tested in the second validity test. The second validity test conducted in Junior High School (SMPN) 3 Bireuen by the number of students 41 with consisting of 2 classes. Class A consisted of 21 students, and the rest will be in class B. In this school, we used two types of question. The first type used 15 multiple choice and 5 essay questions, and the second type used 20 multiple choice and 5 essay questions. The cronbach alpha in class A who used the first type questions was 0.661, and the questions of number 2, 6, 8, 14 were under the validity value 0.3. After the removal, the results of cronbach alpha is 0.735.

The piloting test in class B SMPN 3 Bireuen used 20 multiple choice and 5 essay questions. The analysis result from the class B was 0.565 cronbach alpha. Further finding showed a few questions with the validity value under 0.3. These questions are question number 1, 8, 13, 17, 18, and 15. After deleted these questions, we then achieve the results of 0.644 cronbach alpha. Based on the two piloting test results, we selected the questions with reference to the limit of validity value 0.3. The questions that selected will be the pre-test questions. These questions will be used for the pre-test in the three different locations of Sukma Bangsa School and the results will be the basis for randomization. In addition, other supporting data for randomization came from their final grades in the subjects of religion and the class.

Furthermore, the correlation between the items scores and the total score compared with the value of r table at a significance level of 0.05 by the number of respondents 98. We then had the r-table 0.444. From the analysis, there were 15 questions were not valid from 35 questions tested. However, invalid questions will be still used for repair. Thus, in this study, researchers used 20 multiple choice and 5 essay questions.

3.9 Validity of The Test

According to Kimberlin and Winterstein (2008), “validity is the extent to which the interpretations of the results of a test are warranted, which depends on the particular use the test is intended to serve” (p. 2276-2284). An instrument is valid if it is able to measure what is desirable and can reveal the data variables properly (Arikunto, 2006, p. 168). A valid test for a particular purpose or a specific decision making, it may not be valid for the other purpose of decision-making. So, the validity of the test should be linked to the specific goals or decision-making. For instance, the admission tests in the high school must be linked to the test and it can reflect students’ achievements for the future.

The concept of the validity of the test can be divided into three kinds, namely content validity, construct validity, and the empirical validity or the criteria validity. A good content validity is a test that actually measures the mastery of the material that should be controlled in accordance with the teaching content. Construct validity is analyzing the validity of how far the test items were able to measure what is really going to be measured in accordance with a specific concept or conceptual definition that has been set. Empirical validity is equal to the validity of the criteria, which means that the validity is determined based on the criteria, both the internal criteria as well as the external criteria. The empirical validity of test results obtained through a test to respondents similar to the respondents who would evaluate or examined (Matondang, 2009).

3.10 Reliability of The Test

The instrument reliability test was intended to determine the degree of permanence of a measuring instrument, meaning that the instrument is said to be reliable if used repeatedly against the same object, and it will produce the same results. A valid test is usually reliable, but not all that reliable tests were valid (Arikunto, 2006). Based on that understanding, all items of the test instruments learning achievement should be in the category reliable. For the reliability testing, we used Flanagan formula as following:

$$r_{11} = 2\left(1 - \frac{S_1^2 + S_2^2}{St^2}\right)$$

FIGURE 3. The reliability test formula

where:

r_{11} = reliability of test

S_1^2 = The first parts of the variance, in this case, the variance scores the odd item

S_2^2 = The first parts of the variance, in this case, the variance scores the even item

St^2 = the total variance is the variance of total score

In this study, researchers used SPSS 23 with the alpha models. While in the decision making of reliability, the instrument can be said reliable if the Cronbach alpha is greater than 0.444. From the analysis, the alpha value was 0.614 and 0.735. Therefore, if the r value greater than r table = 0.444, it can be stated that the instrument is very reliable (Pratiwi and Suhartini, 2016).

3.11 Data Collection

The data collection is an important activity for research, and it will determine the success or failure of a study. In this study, researchers used two main sources, a primary data, and a secondary data. At the primary data, researchers used a pre-test (before the research was executed or before the treatment of the experimental class) and a post-test (after research completed or after the treatment and the provision of material has been communicated well to all students). In the context of learning, the type test of research instrument used a tool to measure students' learning

achievement. The pre-test and the post-test were performed for both groups (the experimental group and the control group) and the data were collected and analyzed using SPSS version 23. The data gathered from the pre-test and the post-test were presented using descriptive and inferential statistics. The descriptive analysis was used to learn the effects of blended learning method applied in Islamic history of the 8th grade to find the mean and the standard deviation. The t-test and the correlation were used to probe the relationship between the effect of the use of blended learning method in teaching and learning on students' achievement.

The secondary data used in this research was to support the primary data such as documentations, observations, and interviews. In this study, the documentation obtained from the archives of the teacher or a homeroom on students' achievement in the final test of the second semester of the school year 2015-2016. The observations were made when the experimental group (using blended learning) taken place, with the aim to find out how teachers' perform using an e-learning method combined with a face-to-face method. On the other hand, researchers also observed the activities and students participation following Islamic historical materials using a blended learning. In the end of the study, researchers also interviewed teachers and students from the experimental group and the control group about their experiences using a blended learning method and a face-to-face method in Islamic history.

3.12 Analysis of Data

The data analysis is an important thing to do in a research. The data analysis is usually performed after all required data is complete and valid then later become the basis for problem solver that being studied. To analyze the data, researchers required a sharpness and accuracy tool to provide accurate analytical as a conclusion. If the analysis tool used inappropriately, it will give bad effect to the conclusions and for its use will adversely affect the implementation of findings study. Therefore, the understanding of using appropriate analytical tools desperately needed by researchers and the results of the study will be justified scientifically.

In general, the analysis technique is divided into qualitative analysis and quantitative analysis. In the qualitative analysis techniques, the data will be generated in narrative and it is not in the form of numbers while in the quantitative analysis technique the data will be formed in numbers and it can be narrative. This section will discuss the quantitative analysis technique because the research in this study using quantitative analysis. Quantitative analysis techniques are typically using statistical analysis. Statistical analysis is divided into two groups: descriptive

statistics and inferential statistics. In addition, this study also used comparative analysis, paired sample t-test, which is a part of inferential statistics.

3.12.1 Descriptive statistics

Gravetter & Wallnau (2016, p. 7) stated "descriptive statistics are statistical procedures used to summarize, organize, and simplify data". Muhson (2013) mentioned that the descriptive statistics are the data analysis by describing the existing data without adding and creating a general conclusion. Rasyad (2003, p.6) explained that descriptive statistics are only analyzed a problem or an issue. Rumsey (2010, p.13) described that descriptive statistics are numbers that concluded multiple datasets. In addition, Rumsey (2010) also stated that the descriptive statistics help researchers to get a rough idea in his/her experiments so that researchers can conduct a formal experimentation and the analysis appropriate with the expectation.

In the data presenting, descriptive statistics can be used in various forms. Isotalo (2001) stated that descriptive statistics can be presented in the form of graphs, charts, and tables, and it also can be used to calculate other types of measures such as average, variance, and percentage. Muhson (2013) mentioned that the descriptive statistical analysis techniques can be used in the data presentation of table's form or a distribution frequency; in a visual form such as histograms, polygons, bar charts, pie charts; in calculating the measure of central tendency such as mean, median, and mode; in calculating the size of the layout such as quartiles, deciles, and percentiles; and calculating the size of distribution such as standard deviation, variance, and range.

3.12.2 Inferential statistics

Gravetter & Wallnau (2016, p. 7) stated "inferential statistics consist of techniques that allow us to study samples and then make generalizations about the populations from which they were selected". Muhson (2013) mentioned that in inferential statistics the effort to draw a conclusion and make decisions based on the analysis of data already exists. The analysis was conducted based on a particular sample from a population so that the results can be generalized based on the existing population. Rasyad (2003, p.7) claimed that inferential statistics are a statistical analysis to make decisions based on the characteristics of the sample population.

Based on the type of analysis, inferential statistics are divided into 2 types, correlation analysis and comparative analysis. Muhson (2013) stated that the correlation analysis is an analysis conducted to find the relationship or influences between two variables or more while the

comparison analysis is an analysis that aims to compare between two conditions or more, and the analysis depends on the data type scale and the number of population. The correlation analysis has the independent variable and the dependent variable with the kind of scale such as:

- a. Nominal data, the qualitative data that does not have a level, for instance, sex, parents' work, and hobbies.
- b. Ordinal data, the qualitative data that have a level, such as the level of education, a position, rank, and class rank.
- c. Interval/ratio data, the quantitative data or the numeric data or can be counted, i.e; income, academic achievement, height, weight, and the level of intelligence.

Beside the analysis techniques described above, there have two groups of statistical analysis based on the parameter form such as parametric statistics and non-parametric statistics. Parametric statistics test is a statistical analysis that establishes certain requirements on the form of distribution or population, for instance, an interval data scale and a normal distribution. Non-parametric statistics is a statistical analysis that does not define those terms. Thus, to be able to use parametric statistical techniques, it should be reviewed the requirements in advance.

Muhson (2013) stated that the requirements in the use of parametric statistical techniques were:

1. Samples were taken randomly.
2. Quantitative data.
3. Normal distribution data.
4. There was a linear relationship between the independent variables with the dependent variables
5. The error variance resulting from a regression equation must be homogeneous/equal to any value of X.
6. There was not a too high correlation between independent variables.
7. The error that occurs was purely derived from the regression and not from any other observation error.
8. There was the homogeneity of variance
9. There was the homogeneity of regression.

3.12.3 Paired Sample t-test

Paired sample t-test or also commonly called a repeated measures design is a paired two-sample test. The sample test is to compare results before and after a treatment. In this study, researchers

wanted to measure the students' achievement in Islamic history before the applying of blended learning method, and we will re-measure it after implementing blended learning method in the experimental group. The results achievement of the experimental group will be compared with the control group who did not get a treatment. A measuring instrument was used to view the results of students' achievement in the both groups, based on the pre-test and the post-test. Therefore, in this study, researchers observed the classes to see the differences in students' achievement between the experimental and the control group in general.

In this study, the researchers used the null hypothesis, if there was no effects, relationships, or differences condition between before and after a treatment. The alternate hypothesis was also used if there was an effect, relationships, or differences condition before and after a treatment. Gravetter & Wallnau (2016, p. 356) stated “The alternative hypothesis states that there is a treatment effect that causes the scores in one treatment condition to be systematically higher (or lower) than the scores in the other condition. In symbols, $H1: \mu D \neq 0$ ”. Gravetter & Wallnau (2016) also stated formula used in a paired sample t-test: $t = \frac{MD - \mu D}{S_{MD}}$. In this study, to find out the effect or differences in students' achievement in Islamic history after a treatment used the limit value of 0.05. The limit value of 0.05 is similarly with the criteria for rejecting the null hypothesis. The hypothesis was tested by the t-test as a basis of conclusions, discussions, and recommendations.

3.13 Implementation of Blended Learning in The Experimental Group

Based on the previous explanation that the method of blended learning (BL) is learning that combines a face-to-face and an online learning (e-learning), then before implementing this method, there are some things that need to be prepared by teachers for the implementation in line with expectations, including teachers should have good skills in applying e-learning besides that he/she also needs to prepare digital reference sources that can be referenced by students. Teachers also need to design appropriate reference for a face-to-face and the need to provide time to manage internet-based learning to develop the materials, for example, to develop instruments discussion, assessment and answer questions posed by students both in-person or online. After these things, the implementation of the blended learning method in the research group can be run properly. Furthermore, researchers will describe the implementation steps of the blended learning method in the experimental group.

First step: the first step in the implementation of the BL in the experimental group was teachers must identify the needs, knowing the goal to be achieved using this method. Considering

the factors in schools that may affect the implementation of BL group, researchers cooperate with the resources (temporary teachers) that will help in this study for the success of the implementation of blended learning. Teachers also expressed some rules that must follow during the course of research for example students in the blended learning group were not allowed to share the application with students in the control group. Teachers learned the application of e-learning and he/she used it as a learning support in the face-to-face. Lastly, teachers uploaded all of the material that will be delivered to students into e-learning template.

Second step: in the second step, teachers did some warm-up activity in the experimental group to prepare and to present of the learning material in the face-to-face session. Teachers prepared a room that can be used for delivering power point materials and video materials, and the room connected to the internet (online content), such as, a multimedia room or a computer laboratory room. Furthermore, he/she made sure students were ready to accept the material in the face-to-face. After a conducive situation in the classroom to start the learning, teachers delivered material "The history of science during the Umayyad Daula" using power point and video playback with the direct instruction method or lectures and the discussion was conducted by teachers in front of the student in the classroom.

Third steps: in the third step, teachers prepared students to online learning with access to e-learning. Teachers directed students to log into e-learning applications before they can download all the material relating to "The history of science during the Umayyad Daula", then they can follow the discussion forum, frequently asked questions and answered quizzes or practiced questions by online.

Fourth step: the closing of the experimental implementation. In this study, teachers facilitated students to do learning activities. The learning process focused on students or also called the student-centered, so teachers were obliged to supervise and guide them, especially when they follow the lessons using the application or a feature of e-learning, and parents acted as mentors or companion when they access after school hours or at home. Teachers and students can take the advantages of e-learning as well as possible to improve the quality of the previous face-to-face method. Moreover, they can continue the communication and they can do the distance learning after school hours or when they went back to home without having to be in the same place.

3.14 Implementation of Traditional Learning in The Control Group

A face-to-face method used as it had done before the discovery of printing technology, audiovisual equipment, computers, and teachers were the main source of learning. Teachers delivered the

learning content, did a question and answer discussions, and gave guidance, assignments, and exams. All done in a synchronous way, meaning that all the contents of the learning at the same time and the same place. Some variations could be done on a face-to-face method, for instance, teachers divided the learning materials into the topics that should be discussed by students in the classroom. They make a paper to be presented, do questions and answers, and solve a problem. The traditional learning method or a face-to-face focused on the same material according to instructional procedures (the activity) that recommended in textbooks. There are three stages set out in this activity: opening the learning activities, participation, and closing the learning activities.

Mueen (1992) stated that traditional learning methods are mostly monotone (all students were glued to the same activities). The instructions were fully from teachers where he/she stands in front of students and very rarely move out of place. He/she asked one of students (usually one a good student) to read the material, on the other hand, students listened in silence. Teachers then explain things that were poorly understood by them. Students' participation was very limited while teachers play an active role, and there was no student interaction. At the end of the lesson, teachers usually give the questions relating to the material that has been delivered.

The questions were given to determine how far students have mastered or understood the materials that have been taught, then students should give answers orally or even that they must reproduce the answers previously so the understanding does not take precedence. This method encouraged students to memorize the material rather than to understand the material. The traditional learning method can be varied by discussion among students, debriefing, group presentations, and students were not boredom. In the reality, it was rarely carried out by teachers so that the teaching and learning as reflecting the monopoly of teachers, students are very limited in the understanding and the creative thinking of students is attenuated. However, if teachers teach using the face-to-face method varied by questions and answers, discussions, group works, presentations, and others, in the study, students will not feel bored while receiving the material that presented in class. Therefore, researchers have also provided training several times for teachers who will carry out the control class. In conclusion, they will implement a varied of the face-to-face method, and the class can actually be used as class control toward the experimental class.

3.15 Ethics

A good research is a research that everything is done properly in accordance with the rules of academic and it also conceal a confidential research data to prevent any inconvenience that may arise from the data source. Before starting this study, as researchers we have had discussions and

requested permission from the head of regional education, the school directors and the principals at the three different locations of Sukma Bangsa School. We also informed parents of the 8th grade that the study aims to examine the effectiveness of blended learning method to improve the learning achievement of their children. In general, this study received positive responses from schools and parents. Researchers had also asked permission to the principal of junior high school 3 Bireuen to conduct a piloting test at the 8th grade. Researchers also explained to the students about the piloting test and this study, and all data obtained will not be shared. Moreover, the results of this study will be presented to the school and the parents of students in the three different locations of Sukma Bangsa School.

4 ANALYSIS OF DATA AND RESULTS

In this chapter we will present the results of the experimental studies that we have done and they are divided into three parts, namely:

Part 1

Part 1 shows the pre-test score based on the group and a gender per group consisting of:

Sukma Bireuen School

Tabel 1 shows the pre-test score based on the group

Tabel 2 shows the pre-test score based on gender in the experimental group

Tabel 3 shows the pre-test score based on gender in the control group

Sukma Pidie School

Tabel 4 shows the pre-test score based on the group

Tabel 5 shows the pre-test score based on gender in the experimental group

Tabel 6 shows the pre-test score based on gender in the control group

Sukma Lhokseumawe School

Tabel 7 shows the pre-test score based on the group

Tabel 8 shows the pre-test score based on gender in the experimental group

Tabel 9 shows the pre-test score based on gender in the control group

Part 2

Part 2 shows the pre-test and the post-test in the experimental group and the control group consisting of:

Sukma Bireuen School

Tabel 10 shows the pre-test and the post-test score in the experimental group

Tabel 11 shows the post-test score based on the group

Sukma Pidie School

Tabel 12 shows the pre-test and the post-test score in the experimental group

Tabel 13 shows the post-test score based on the group

Sukma Lhokseumawe School

Tabel 14 shows the pre-test and the post-test score in the experimental group

Tabel 15 shows the post-test score based on the group

Part 3

Part 3 shows the post-test score based on the group and a gender per group consisting of:

Sukma Bireuen School

Tabel 16 shows the post-test score based on gender in the experimental group

Tabel 17 shows the post-test score of male in the experimental group and the control group

Tabel 18 shows the post-test score of female in the experimental group and the control group

Sukma Pidie School

Tabel 19 shows the post-test score based on gender in the experimental group

Tabel 20 shows the post-test score of male in the experimental group and the control group

Tabel 21 shows the post-test score of female in the experimental group and the control group

Sukma Lhokseumawe School

Tabel 22 shows the post-test score based on gender in the experimental group

Tabel 23 shows the post-test score of male in the experimental group and the control group

Tabel 24 shows the post-test score of female in the experimental group and the control group

4.1 Part1: the pre-test score based on group and gender

In part 1 there were nine tables wherein each location would have three tables.

4.1.1 Sukma Bireuen School

From the table 1 students who were in the control group had higher pre-test score ($M = 23.76$, $SD = 7.342$) than students who were in the experimental group ($M = 22.75$, $SD = 9.272$). With the $t(55) = -0.456$, $p > 0.05$ indicating that there is no significant difference between the experimental group and the control group. This means that the basic ability of students between the experimental group and the control group was not different.

TABLE 1. The pre-test score based on the group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Pre-test	Experimental	28	22.75	9.272	-.456	55	.650
	Control	29	23.76	7.342			
Total		57					

From the table 2 the male students who were in the experimental group had lower pre-test score ($M = 21.36$, $SD = 9.676$) than the female students ($M = 24.14$, $SD = 8.986$). With the $t(26) = -0.789$, $p > 0.05$ indicating that there is no significant difference between males and females. This means that the basic ability between males and females were not different in the experimental group.

TABLE 2. The pre-test score based on gender in the experimental group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Pre-test	Male	14	21.36	9.676	-.789	26	.437
	Female	14	24.14	8.986			
Total		28					

From the table 3 the male students who were in the control group had lower pre-test score ($M = 22.63$, $SD = 7.788$) than the female students ($M = 25.15$, $SD = 6.793$). With the $t(27) = -0.920$, $p > 0.05$ indicating that there is no significant difference between males and females. This means that the basic ability between males and females were not different in the control group.

TABLE 3. The pre-test score based on gender in the control group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Pre-test	Male	16	22.63	7.788	-.920	27	.366
	Female	13	25.15	6.793			
	Total	29					

We can see from those all tables that the achievement of the pre-test scores between the experimental group and the control group is almost the same from the table 1, and likewise between table 2 and table 3 which shows that the pre-test achievement of boys and girls had almost alike in the Islamic history.

4.1.2 Sukma Pidie School

From the table 4 students who were in the control group had higher pre-test score ($M = 40.06$, $SD = 11.535$) than students who were in the experimental group ($M = 39.06$, $SD = 8.081$). With the $t(32) = -0.293$, $p > 0.05$ indicating that there is no significant difference between the experimental group and the control group. This means that the basic ability of students between the experimental group and the control group was not different.

TABLE 4. The pre-test score based on the group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Pre-test	Experimental	17	39.06	8.081	-.293	32	.772
	Control	17	40.06	11.535			
	Total	34					

From the table 5 the male students who were in the experimental group had lower pre-test score ($M = 39.00$, $SD = 10.520$) than the female students ($M = 39.08$, $SD = 7.708$). With the $t(15) = -0.016$, $p > 0.05$ indicating that there is no significant difference between males and females. This

means that the basic ability between males and females were not different in the experimental group.

TABLE 5. The pre-test score based on gender in the experimental group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2-tailed)
Pre-test	Male	4	39.00	10.520	-.016	15	.587
	Female	13	39.08	7.708			
	Total	17					

From the table 6 the male students who were in the control group had higher pre-test score ($M = 44.40$, $SD = 9.864$) than the female students ($M = 38.25$, $SD = 12.084$). With the $t(15) = 1.002$, $p > 0.05$ indicating that there is no significant difference between males and females. This means that the basic ability between males and females were not different in the control group.

TABLE 6. The pre-test score based on gender in the control group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2-tailed)
Pre-test	Male	5	44.40	9.864	1.002	15	.332
	Female	12	38.25	12.084			
	Total	17					

Viewed from the whole table, it is clear that from the table 4 the achievement of the pre-test scores between the experimental group and the control group is almost the same and likewise between table 5 and table 6 which shows that the pre-test achievement of boys and girls had almost alike in the Islamic history.

4.1.3 Sukma Lhokseumawe School

From the table 7 students who were in the experimental group had higher pre-test score ($M = 32.69$, $SD = 11.120$) than students who were in the control group ($M = 29.80$, $SD = 14.38$). With

the $t(49) = -0.807$, $p > 0.05$ indicating that there is no significant difference between the experimental group and the control group. This means that the basic ability of students between the experimental group and the control group was not different.

TABLE 7. The pre-test score based on the group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2-tailed)
Pre-test	Experimental	26	32.69	11.120	-.807	49	.424
	Control	25	29.80	14.338			
Total		51					

From the table 8 the male students who were in the experimental group had higher pre-test score ($M = 35.15$, $SD = 10.854$) than the female students ($M = 30.23$, $SD = 11.256$). With the $t(24) = 1.135$, $p > 0.05$ indicating that there is no significant difference between males and females. This means that the basic ability between males and females were not different in the experimental group.

TABLE 8. The pre-test score based on gender in the experimental group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2-tailed)
Pre-test	Male	13	35.15	10.854	1.135	24	.268
	Female	13	30.23	11.256			
Total		26					

From the table 9 the male students who were in the control group had higher pre-test score ($M = 33.31$, $SD = 14.913$) than the female students ($M = 26.00$, $SD = 13.253$). With the $t(23) = 1.291$, $p > 0.05$ indicating that there is no significant difference between males and females. This means that the basic ability between males and females were not different in the control group.

TABLE 9. The pre-test score based on gender in the control group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Pre-test	Male	13	33.31	14.913	1.291	23	.210
	Female	12	26.00	13.253			
	Total	25					

Viewed from the whole table, it is clear that from the table 7 the achievement of the pre-test scores between the experimental group and the control group is almost the same and likewise between table 8 and table 9 show that the pre-test achievement of boys and girls had almost alike in the Islamic history.

4.2 Part 2: the pre-test and the post-test based on group

In part 2 there were six tables wherein each location would have two tables.

4.2.1 Sukma Bireuen School

H₀₁: there is no significant difference between the pre-test and the post-test score in the experimental group

H_a: there is a significant difference between the pre-test and the post-test score in the experimental group

From the table 10, the students in the experimental group had pre-test scores (M = 22.75, SD = 9.272) and after getting treatment using blended learning method the post-test scores had (M = 54.00, SD = 12.520). The t-test calculation states the t value (54) = -10.614, p < 0.05. This result indicates that there was significant difference between the students' achievement in the pre-test and the post-test. Hence, H₀₁ was rejected while H_a was accepted. This also shows that there is significant difference between the scores of pre-test and post-test in the experimental group.

TABLE 10. The pre-test and the post-test score in the experimental group

Group	Test	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Experimental	Pre-test	28	22.75	9.272	-10.614	54	.000
	Post-test	28	54.00				
Total		56					

H₀₂: there is no significant difference between the experimental group and the control group on the post-test score.

H_a: there is a significant difference between the experimental group and the control group in the post-test score.

From the table 11, the students in the experimental group had higher post-test scores (M = 54.00, SD = 12.520) than those in the control group (M = 50.17, SD = 16.872). Despite the differences in the mean from both groups, the t-test calculation states that the t value (55) = 0.970, $p > 0.05$. This result indicates that there was no significant difference between the students' achievement who used blended learning method and face-to-face method. Thus, H₀₂ was accepted while H_a was rejected. This also shows that there is no significant difference between the post-test in the experimental group and the control group.

TABLE 11. The post-test score based on the group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Post-test	Experimental	28	54.00	12.520	.970	55	.336
	Control	29	50.17	16.872			
Total		57					

From the previous table 10, the pre-test scores that obtained by the students at the beginning of the study increased significantly on the post-test scores in experimental group. Although there are differences from the mean, as shown in table 11 above, based on the t-test results were not significant. There was no significant difference in the post-test scores between the experimental

group and the control group. It can be concluded that the use of blended learning in Islamic history does not give effect on the students' achievement in Sukma Bireuen School.

4.2.2 Sukma Pidie School

H0₁: there is no significant difference between the pre-test and the post-test score in the experimental group

Ha: there is a significant difference between the pre-test and the post-test score in the experimental group

From the table 12, the students in the experimental group had pre-test scores (M = 39.06, SD = 8.081) and after getting treatment using blended learning method the post-test scores had (M = 54.29, SD = 8.130). The t-test calculation states that the t value (32) = -5.480, p < 0.05. This finding indicates that there was significant difference between the students' achievement in the pre-test and the post-test. Hence, H0₁ was rejected while Ha was accepted. This also shows that there is significant difference between the scores of pre-test and post-test in the experimental group.

TABLE 12. The pre-test and the post-test score in the experimental group

Group	Test	N	Mean	Std. Deviation	t	df	Sig (2-tailed)
Experimental	Pre-test	17	39.06	8.081	-5.480	32	.000
	Post-test	17	54.29	8.130			
Total		34					

H0₂: there is no significant difference between the experimental group and the control group on the post-test score.

Ha: there is a significant difference between the experimental group and the control group in the post-test score.

From the table 13, the students in the experimental group had similar post-test scores (M = 54.29, SD = 8.130) within the control group (M = 54.29, SD = 11.213). Despite the differences in the standard deviation from both groups, the t-test calculation states that the t value (32) = 0.000, p >

0.05. This finding indicates that there was no significant difference between the students' achievement who used blended learning method and face-to-face method. Thus, H_0 was accepted while H_a was rejected. This also shows that there is no significant difference between the post-test in the experimental group and the control group.

TABLE 13. The post-test score based on the group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2-tailed)
Post-test	Experimental	17	54.29	8.130	.000	32	1.000
	Control	17	54.29	11.213			
	Total	34					

From the previous table 12, the pre-test scores that obtained by the students at the beginning of the study increased significantly on the post-test scores in experimental group. Although there are differences from the standard deviation, as shown in table 13 above, based on the t-test results were not significant. There was no significant difference in the post-test scores between the experimental group and the control group. It can be concluded that the use of blended learning in Islamic history does not give effect on the students' achievement in Sukma Pidie School.

4.2.3 Sukma Lhokseumawe School

H_0 : there is no significant difference between the pre-test and the post-test score in the experimental group

H_a : there is a significant difference between the pre-test and the post-test score in the experimental group

From the table 14, the students in the experimental group had pre-test scores ($M = 32.69$, $SD = 11.120$) and after getting treatment using blended learning method the post-test scores had ($M = 53.62$, $SD = 16.425$). The t-test calculation states that the t value (50) = -5.379 , $p < 0.05$. This result indicates that there was significant difference between the students' achievement in the pre-test and the post-test. Hence, H_0 was rejected while H_a was accepted. This also shows that there is significant difference between the scores of pre-test and post-test in the experimental group.

TABLE 14. The pre-test and the post-test score in the experimental group

Group	Test	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Experimental	Pre-test	26	32.69	11.120	-5.379	50	.000
	Post-test	26	53.62	16.425			
Total		52					

H₀₂: there is no significant difference between the experimental group and the control group on the post-test score.

H_a: there is a significant difference between the experimental group and the control group in the post-test score.

From the table 15 students in the experimental group had higher post-test scores (M = 53.62, SD = 16.425) than those in the control group (M = 50.96, SD = 19.671). Despite the differences in the mean from both groups, the t-test calculation states that the t value (47) = 0.516, $p > 0.05$. This finding indicates that there was no significant difference between the students' achievement who used blended learning method and face-to-face method. Thus, H₀₂ was accepted while H_a was rejected. This also shows that there is no significant difference between the post-test in the experimental group and the control group.

TABLE 15. The post-test score based on the group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Post-test	Experimental	26	53.62	16.425	.516	47	.609
	Control	23	50.96	19.671			
Total		49					

From the previous table 14, the pre-test scores that obtained by the students at the beginning of the study increased significantly on the post-test scores in both groups. Although there are differences from the mean, as shown in table 15 above, based on the t-test results were not significant. There was no significant difference in the post-test scores between the experimental group and the

control group. It can be concluded that the use of blended learning in Islamic history does not give effect on the students' achievement in Sukma Lhokseumawe School.

4.3 Part 3: the post-test score based on group and gender

In part 3 there were nine tables wherein each location would have three tables.

4.3.1 Sukma Bireuen School

H₀₃: there is no significant difference between males and females in the post-test of the experimental group

H_a: there is a significant difference between males and females in the post-test of the experimental group

From the table 16 shows that male students who were in the experimental group had lower post-test scores (M = 51.93, SD = 14.296) than female students (M = 56.07, SD = 10.579). Although it appears differences between the mean of both sexes, but the t-test calculation shows that the value of $t(26) = -0.872$, $p > 0.05$. It can be concluded that there was no significant difference between boys and girls in the mean value of the post-test in the experimental group. Thus, the H₀₃ was accepted and H_a was rejected.

TABLE 16. The post-test score based on gender in the experimental group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2-tailed)
Post-test	Male	14	51.93	14.296	-.872	26	.391
	Female	14	56.07	10.579			
	Total	28					

H₀₄: There is no significant difference between the experimental group and the control group on males post-test scores.

H_a: There is a significant difference between the experimental group and the control group on males' post-test scores.

From the table 17, male students who were in the experimental group had higher post-test scores ($M = 51.93$, $SD = 14.296$) than male students who were in the control group ($M = 50.38$, $SD = 15.903$). Although it appears the mean differences in the both group, but the t-test calculation shows that the value of $t(28) = 0.280$, $p > 0.05$. This result indicates that there was no significant difference between the experimental group and the control group in the post-test scores. Thus, H_{04} was accepted and H_a was rejected. This means that the blended learning method does not provide a significant impact to the male students in both groups.

TABLE 17. The post-test score of male in the experimental group and the control group

Gender	Group	N	Mean	Std. Deviation	t	df	Sig (2-tailed)
Male	Experimental	14	51.93	14.296	.280	28	.782
	Control	16	50.38	15.903			
Total		30					

H_{05} : There is no significant difference between the experimental group and the control group on females post-test scores.

H_a : There is a significant difference between the experimental group and the control group on females' post-test scores.

From the table 18, female students who were in the experimental group had higher post-test scores ($M = 56.07$, $SD = 10.579$) than female students who were in the control group ($M = 49.92$, $SD = 18.652$). Although it appears the mean differences in the both groups, but the t-test calculation shows that the value of $t(25) = 1.064$, $p > 0.05$. This finding indicates that there was no significant difference between the experimental group and the control group in the post-test scores of both groups. Hence, H_{05} was accepted and H_a was rejected. This means that the blended learning method does not provide a significant impact to the female students in both groups.

TABLE 18. The post-test score of female in the experimental group and the control group

Gender	Group	N	Mean	Std. Deviation	t	df	Sig (2-tailed)
Female	Experimental	14	56.07	10.579	1.064	25	.298
	Control	13	49.92	18.652			
	Total	27					

The findings indicate that there is a difference in student achievement results when viewed by gender. Table 16 shows that the mean of female students were higher than male students in the use of blended learning method in the learning of Islamic history when viewed by the mean scores, but in using t-test there was no significant. In table 17 and 18 when viewed by the mean scores, it appears that both boys and girls had better scores when using the blended learning method. However, based on the statistical test (t-test) can be concluded that the use of blended learning methods in the Islamic history did not affect significantly in the students' achievement both men and women in Sukma Bireuen School.

4.3.2 Sukma Pidie School

H₀₃: there is no significant difference between males and females in the post-test of the experimental group

H_a: there is a significant difference between males and females in the post-test of the experimental group

From the table 19 shows that male students who were in the experimental group had higher post-test scores (M = 60.25, SD = 8.057) than female students (M = 54.26, SD = 7.512). Although, it appears differences between the mean of both sexes, but the t-test calculation shows that the value of $t(15) = 1.787$, $p > 0.05$. It can be concluded that there was no significant difference between boys and girls in the mean value of the post-test in the experimental group. Thus, the H₀₃ was accepted and H_a was rejected.

TABLE 19. The post-test score based on gender in the experimental group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Post-test	Male	4	60.25	8.057	1.787	15	.811
	Female	13	52.46	7.512			
	Total	17					

H₀₄: There is no significant difference between the experimental group and the control group on males post-test scores.

H_a: There is a significant difference between the experimental group and the control group on males' post-test scores.

From the table 20, male students who were in the experimental group had higher post-test scores (M = 60.25, SD = 8.057) than male students who were in the control group (M = 59.40, SD = 6.107). Although it appears the mean differences in the both group, but the t-test calculation shows that the value of $t(7) = 0.181$, $p > 0.05$. This result indicates that there was no significant difference between the experimental group and the control group in the post-test scores of both groups. Thus, H₀₄ was accepted and H_a was rejected. This means that the blended learning method does not provide a significant impact to the male students in both groups.

TABLE 20. The post-test score of male in the experimental group and the control group

Gender	Group	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Male	Experimental	4	60.25	8.057	.181	7	.862
	Control	5	59.40	6.107			
	Total	9					

H₀₅: There is no significant difference between the experimental group and the control group on females post-test scores.

H_a: There is a significant difference between the experimental group and the control group on females' post-test scores.

From the table 21, female students who were in the experimental group had higher post-test scores ($M = 52.46$, $SD = 7.512$) than female students who were in the control group ($M = 52.17$, $SD = 12.350$). Although it appears the mean differences in the both groups, but the t-test calculation shows that the value of $t(23) = 0.073$, $p > 0.05$. This finding indicates that there was no significant difference between the experimental group and the control group in the post-test scores. Hence, H_0 was accepted and H_a was rejected. This means that the blended learning method does not provide a significant impact to the female students in both groups.

TABLE 21. The post-test score of female in the experimental group and the control group

Gender	Group	N	Mean	Std. Deviation	t	df	Sig (2-tailed)
Female	Experimental	13	52.46	7.512	.073	23	.943
	Control	12	52.17	12.350			
Total		25					

The findings indicate that there is a difference in student achievement results when viewed by gender. Table 19 shows that the achievement of male students was higher than female students in the use of blended learning method in the learning of Islamic history when viewed by the mean scores, but in using t-test there was no significant. In table 20 and 21 when viewed by the mean scores, it appears that both boys and girls had better scores when using the blended learning method. However, based on the statistical test (t-test) can be concluded that the use of blended learning methods in the Islamic history did not affect significantly in the students' achievement both males and females in Sukma Pidie School.

4.3.3 Sukma Lhokseumawe School

H_0 : there is no significant difference between males and females in the post-test of the experimental group

H_a : there is a significant difference between males and females in the post-test of the experimental group

From the table 22 shows that male students who were in the experimental group had lower post-test scores ($M = 47.31$, $SD = 12.010$) than female students ($M = 59.92$, $SD = 18.209$). Although it

appears differences between the mean of both sexes, but the t-test calculation shows that the value of $t(24) = -2.085$, $p < 0.05$. It can be concluded that there was significant difference between boys and girls in the mean value of the post-test in the experimental group. Thus, the H_{01} was rejected and H_a was accepted.

TABLE 22. The post-test score based on gender in the experimental group

Test	Group	N	Mean	Std. Deviation	t	df	Sig (2-tailed)
Post-test	Male	13	47.31	12.010	-2.085	24	.048
	Female	13	59.92	18.209			
	Total	26					

H_{04} : There is no significant difference between the experimental group and the control group on males post-test scores.

H_a : There is a significant difference between the experimental group and the control group on males' post-test scores.

From the table 23, male students who were in the experimental group had higher post-test scores ($M = 47.31$, $SD = 12.010$) than male students who were in the control group ($M = 37.73$, $SD = 14.974$). Although it appears the mean differences in the both group, but the t-test calculation shows that the value of $t(22) = 1.740$, $p > 0.05$. This result indicates that there was no significant difference between the experimental group and the control group in the post-test scores of both groups. Thus, H_{04} was accepted and H_a was rejected. This means that the blended learning method does not provide a significant impact to the male students in both groups.

TABLE 23. The post-test score of male in the experimental group and the control group

Gender	Group	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Male	Experimental	13	47.31	12.010	1.740	22	.096
	Control	11	37.73	14.974			
Total		24					

H₀₅: There is no significant difference between the experimental group and the control group on females post-test scores.

H_a: There is a significant difference between the experimental group and the control group on females' post-test scores.

From the table 24 female students who were in the control group had higher post-test scores (M = 63.08, SD = 15.318) than female students who were in the experimental group (M = 59.92, SD = 18.209). Although it appears the mean differences in the both groups, but the t-test calculation shows that the value of t (23) = -0.467, p > 0.05. This finding indicates that there was no significant difference between the experimental group and the control group in the post-test scores. Hence, H₀₅ was accepted and H_a was rejected. This means that the blended learning method does not provide a significant impact to the female students in both groups.

TABLE 24. The post-test score of female in the experimental group and the control group

Gender	Group	N	Mean	Std. Deviation	t	df	Sig (2- tailed)
Female	Experimental	14	56.07	10.579	1.064	25	.298
	Control	13	49.92	18.652			
Total		27					

The findings indicate that there is a difference in student achievement results when viewed by gender. Table 22 shows that the achievement of female students was higher than male students in the use of blended learning methods in the learning of Islamic history, this finding reveals that females are better than males significantly in the using of blended learning methods in the learning

of Islamic history. Based on the mean scores, female students had better scores when using face-to-face method. In contrast, male students had better scores when using blended learning method, as seen in table 23 and 24. However, based on the statistical test can be concluded that the use of blended learning methods in the Islamic history did not affect significantly in the students' achievement both boys and girls in Sukma Lhokseumawe School.

4.4 Discussions

In this section, we will discuss the results based on the statistical test results as well as the answer to the three research questions in this study. The first research question will be answered in part 1 and part 2; part 3 is to answer the second research question and the third research question will be answered in part 4.

Part 1: The purpose of this research is to assess the effects of using blended learning method in the subject of Islamic history in the 8th grade. The comparison of the pre-test scores in the experimental group and the control group at the three different locations of Sukma Bangsa School using statistic analysis reflects that there is no significant different between the two groups, and both groups are almost equal in the students' achievement in the Islamic history in the 8th grade (table 1, 4, and 7). In addition, the comparison of the pre-test scores between male students and female students in the experimental group and the control group was not significant at the level limit of 0.05 (table 2, 3, 5, 6, 8, and 9). This means that students who are in the experimental group and the control group at the three different locations of Sukma Bangsa School can be said that they have the same basic capability in the subject of Islamic history before the research.

Part 2: H_0 : the achievement result in the experimental group shows significant results in the post-test rather than the pre-test. The mean difference between the pre-test and the post-test shows a significant result in the level limit of 0.05 in the three different locations of Sukma Bangsa School. Hence, the null hypothesis that "there is no significant difference between the mean scores of the experimental group on the pre-test and the post-test" is rejected.

The results of tables 10, 12, and 14 indicate that the mean value of the post-test in the experimental group that use blended learning method has increased rather than the pre-test. These results are inline with Kazu and Demirkol (2014) which stated that the post-test scores were better rather than the pre-test scores, and the post-test scores in the experimental group using blended learning was better than the post-test scores in the control group using face-to-face in biology subject.

H0₂: The achievement of the post-test scores in the experimental group shows better result rather than the control group even though there has different in the mean value of both groups. such as shown in table 11, 13 and 15, or even the mean value of the experimental group was same with the control group such as shown at Sukma Pidie School (table 13), but in the statistic t-test analysis the differences and similarity was not significant at the level limit of 0.05. Therefore, the null hypothesis that "there is no significant difference between the mean scores of the experimental group and control group on post-test" was accepted. These results support previous studies conducted by Tosun (2015) which stated that the use of blended learning method does not give positive impact in enhancing teachers vocabulary ability in the result of the post-test.

Kennedy and McCallister (2000) found that there was no significant difference between the approach of e-learning, face-to-face and blended learning to improve student achievement results. Similarly Lim, Morris, and Kupritz (2014), Hameed et al. (2008), Lim and Yoon (2008) found that there was no significant difference between a blended learning and an e-learning to improve students' achievement, but the results were different with several other studies. Al-Zahrani (2008), Korkmaz, and Karakus (2009), Al-Qahtani and Higgins (2013), and Kazu and Demirkol (2014) stated that the achievement of students with the use of blended learning is better than the traditional method or face-to-face method. In addition, Jang and Hong (2016) claimed that there was no statistically significant difference in the satisfaction of nursing students, although satisfaction scores increased slightly. The reason why there was no significant difference in satisfaction scores between the two groups is most of the students who participated in the study was easy learning through lectures and they did not fully adapt to blended learning. Hence, it is necessary to provide education using blended learning methods in a sustained process.

Part 3: H0₃: The different results of the post-test scores between males and females in the experimental group shows that there was no significant results on the level limit of 0.05 level (tables 16 and 19). Therefore, the null hypothesis "there is no significant difference between males and females in the mean scores of the experimental group on the post-test" was accepted. These statistical results are supported by Adidoye (2015), as he found that there was no significant difference between the results of the achievement of boys and girls in geography lessons in the learning approach using a blended learning method and a face-to-face method. In addition, these results also confirmed the study conducted by Umoren (2006), and Baer and Baer (2005) as cited by Adidoye (2015) that students' achievement result does not exist in gender .

Table 22 shows that there was significance difference between the female and male students' achievement in the use of blended learning methods in Islamic history at Sukma Lhokseumawe School, and the mean scores of female students was better than male students. Therefore, H0₃ was

rejected and H_a was accepted. It means that there was significant difference between the mean value of males and females in the experimental group on the post-test scores, and the post-test result of females was higher than males. These findings are dissimilar to the study conducted by Kazu and Demirkol (2014), who revealed that the academic achievement grade average in a biology course of the experimental and the control group did not have significant difference depending on gender. These results also contrast with research performed by Ziden et al. (2011) which showed that male students were more comfortable using computers than females. In addition, the study by Hakkarainen et al. (2000) as cited by Ziden et al. (2011) stated that male students' scores were higher than female in ICT skills.

H_{04} : The achievement of the mean value of males on the post-test scores in the experimental group and the control group shows that there were no significant results. The differences between the two groups show there were no significant results at the level limit of 0.05 in the three different locations of Sukma Bangsa School. Therefore, the null hypothesis "there is no significant difference between experimental and control group in the mean scores of males on the post-test" was accepted.

H_{05} : The achievement of the mean value of females on the post-test scores in the experimental group and the control group shows that there were no significant results. The differences between the two groups show there were no significant results at the level limit of 0.05 in the three different locations of Sukma Bangsa School. Hence, the null hypothesis "there is no significant difference between experimental and control group in the mean scores of females on the post-test" was accepted.

The table results of 17-18, 20-21, and 23 show that males and females obtained better value when using the blended learning method based on the differences of the mean scores, while the result of table 24 shows that female students obtained lower scores when learning using the blended learning method. Although there was a difference in the mean score, based on the calculation of the t-test it can be concluded that the use of the blended learning method did not affect significantly to the achievement of males. These results were confirmed with a study conducted by Adidoeye (2015) which stated that girls show better achievement results than boys, however, the differences were not significant results. Similarly, Kazu and Demirkol (2014) revealed that the achievement of males in the experimental group showed that there was significant difference in biology lessons.

Part 4: From interviews conducted by researchers with the students in the experimental group (using blended learning method), it can be deduced:

1. In using the blended learning method the learning process becomes less monotonous.

2. Students tended to be more active and feel happy to follow the lesson using the blended learning method, because in addition to being taught by the lecture method, students were also able to access course materials that were provided in the e-learning which was equipped with various additional references and a variety of videos about "the development of science of the Umayyahs time" and equipped with quizzes or practice questions to measure student understanding of the material provided.
3. Students felt more effective if they used the blended learning method, because the students did not have to record all the material presented by the teacher. They just downloaded such material on e-learning that was provided in word format, pdf, power point, video, and relearned it at home.
4. Students were delighted by the use of the blended learning method because in the e-learning session they could interact in the form of chatting with other students and teachers like in social media, so that the students did not feel awkward in the discussion and could ask something that was not delivered yet.
5. The reason why there were no significant differences between the experimental group and the control group was because the students had not fully adapted to the method of blended learning, and they were still very limited to access e-learning and many of them did not have internet access at home. Similarly, the results of blended learning between males and females were not significant because the students had a problem with the internet connection and computer skills were still weak.

From interviews conducted by researchers with the teachers in the experimental group (using blended learning method), it can be deduced:

1. Teachers liked the blended learning method because it is a new method for them in the teaching process.
2. The blended learning method helped them to give student grades because the moodle software of e-learning can set a score automatically; hence, they did not have to make corrections manually.
3. Teachers did not understand well how to use the blended learning method so that the blended learning method became less attractive.
4. The level of awareness among the students of blended learning group to learn and to repeat the lesson at home both online and offline is very low, thus, the results of the post-test were that there were no significant differences between the blended learning method and the face-to-face method.

5 CONCLUSIONS AND RECOMMENDATIONS

Based on the t-statistic results showed that there was no significantly different between students in the experimental group and those in the control group. Therefore, it can be concluded that the blended learning method is not recommended to use in Islamic history subject at Sukma Bangsa School. The result supported with Kennedy and Mc Callister's (2000) study as cited by Al-Qahtani and Higgins (2003) that there was no significant difference in the results of students' achievement between face-to-face, e-learning, and blended learning. In contrast, a study was conducted by Roscoe (2012) and Kazu and Demirkol (2014) stated that a blended learning method can help students to increase their achievement rather than a face-to-face method.

Moreover, it can be concluded that there is no significant difference between males and females in the achievement of Islamic history in the use of blended learning method, especially in Sukma Bireuen and Sukma Pidie. This result is in line with Adidoeye (2015) which stated that there was no significant difference achievement between boys and girls in geography lessons. However, the results obtained in Sukma Lhokseumawe School showed that female students had higher scores than male students. These results contrast with the study conducted by Ziden et al. (2011) which stated that the male students more comfortable when working with computers.

However, despite the use of blended learning methods showed that there were no significant results in students' achievement on Islamic history subject, blended learning method is an interesting new method for teachers who teach Islamic history subject. Based on the interview after the research, it can be said that teachers feel that the blended learning help them, for instance, to save and upload all the Islamic history material, teachers can give automatically scores using moodle (in particular to the multiple choice questions), teachers can monitor student activity in the use of e-learning, such as, monitoring and engaging in discussion forums. Likewise, students feel that blended learning method is a new thing where they can download course material any time and ask teachers through discussion forums, even when they were at home. The interview results from the perception of students and teachers support with what was said by Kanuka, Brooks, & Saranchuk (2009) that blended learning method minimizes the limitations of time, space, and situation.

Some difficulties were also faced in this study both from teachers, students, and the existing conditions. Obstacles were in the implementation of blended learning as follows: teachers were not familiar using a computer and online systems, so that e-learning sessions were not maximal. Moreover, they have a lack of classroom management and pedagogy. The ability of pedagogy will be a benchmark in the learning process in accordance with the expected results. In addition, problems faced by students in the implementation of blended learning is a lack of interest in reading the material that has been uploaded by teachers in moodle.

The implementation of blended learning in this study was also influenced by geographical environment, culture and cultural communities around Sukma Bangsa School. Sukma Bangsa Bireuen and Sukma Bangsa Lhokseumawe can be said more easily to get an information because it located in urban areas, while Sukma Pidie School is far from urban areas. This condition indirectly gives effect to the internet connection that is often expressed by teachers and students at Sukma Pidie School during the research. Based on the conclusions above, some recommendations as follows:

1. In applying blended learning, teachers should have good computer skills and good pedagogical skill. When teachers face moodle in the e-learning sessions, they can understand the menus and can manage both sessions (face-to-face and e-learning).
2. Teachers' pedagogy skills should be empowering through teachers' training, seminars, and discussion forums with experts. These activities should be facilitated by the local education department or school.
3. Computer training is needed to improve teachers' skills, so teachers understand computer well.
4. Blended learning method should be notified to all teachers with training and seminars, so that teachers are more familiar with the blended learning.
5. An operator/instructor who had mastered in the use of e-learning to help teachers when working with e-learning is needed.
6. Good infrastructures, a technology, and the internet are needed when schools want to implement the blended learning method in the learning process.
7. Study on the implementation of blended learning should be done in long period, for instance, in two semesters of the school year.

This study took place for 3 months in the first semester of the school year 2016-2017. Further research on the effect of blended learning should be done by using teachers who have good pedagogy ability, literate using computer, and with long time period. Teachers for further research should be able to manage the class well, both in a face-to-face and e-learning sessions.

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