BLENDED LEARNING: LEARNING MODEL TO IMPROVE STUDENT LEARNING OUTCOMES

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Abstract

In the current digital era, teachers are not the main learning resource for students, because students can access online learning resources. Changing the teacher's strategy in teaching is one way that teachers can do to get maximum learning outcomes. The blended learning model with the flipped classroom type can be implemented in the classroom by combining online learning at home and face-to-face in class. This study aims to determine the effect of this model on improving student learning outcomes.The method used is a quasi-experimental quantitative design. The population were all students of SMA Negeri 2 Meulaboh Aceh Barat with a sample of 60 students. The sampling technique in this study was by purposive sampling method. The research results showed that the test scores (pretest and posttest) in the control class and experimental class with a significance level of ∝=0.025 obtained *t-test* of 29.45 while the *t-table* had a value of 2.04. Because the *t-test* value is greater than the *t-table* value, it can be concluded that there is a significant influence from the application of the Blended Learning learning model with the flipped classroom type on the completeness of student learning outcomes.

Keywords: blended learning; flipped classroom; learning outcomes

INTRODUCTION

The learning process is the essence of school education activities, so learning, in essence, is an activity carried out by someone consciously. This can lead to changes in their behavior, including acquiring new knowledge and skills as well as forming positive attitudes and values (Hafinda & Zuhilmi, 2021). In the learning process, there is an interactive process among students engaged in learning activities as members of the learning community with various learning resources. Learning resources can be human, such as facilitators like mentors or civil servants, or non-human, such as books, radio and television broadcasts, recordings that can be seen and heard, the universe, and the problems faced (Balseman & Mappa, 2011).

In Islam, it is obligatory for us to seek knowledge through education, both within and outside formal education. In fact, Allah initiated the descent of the Qur'an as a guide for human life with a verse commanding His Messenger Muhammad SAW to read and write. This is mentioned in Surah Al-Alaq: 1, which states:

خَلَقَ الَّذِي رَبِّكَ بِاسْمِ اقْرَ

It means: "Read in the name of your Lord who created."

Reading is one manifestation of learning activities in education (Alpian & Yatri, 2022). In a broad sense, through learning, we can develop knowledge and improve our future lives. Learning is an essential requirement for being a jack-of-all-trades, whether in terms of knowledge, skills, or expertise (Rahman, 2022). Learning is a

personal effort that brings about new changes in behavior overall, as a result of personal experiences interacting with the environment. The academic achievement of students is also influenced by various factors, one of which is the teacher as an educator, as the teacher transfers knowledge to the students (Hafinda, 2021; Maria & Fauziah, 2022; W. Nugroho, 2022). Therefore, the quality of the teacher should be closely considered.

The subject of Islamic Education is a educational program that emphasizes Islamic values through a structured learning process (R. A. Nugroho, 2021).For some students, the Islamic Education subject is perceived as challenging and boring, especially when it comes to memorizing the material, as Islamic Education is closely related to memorization. According to the initial identification conducted by researchers, including observation and interviews with students and Islamic Education teachers at SMA Negeri 2 Meulaboh, Aceh Barat, during the teaching and learning process, many students were preoccupied with their own activities, talking to their seatmates, creating a non-conducive classroom atmosphere. Students lowered their heads to the desk, leading to a loss of concentration in learning. This may be due to teachers using lectures as the primary teaching method and summarizing material as an assignment (Kurniawan & Zunidar, 2021).

The limited use of learning media makes students unenthusiastic about learning. It is not surprising that many students find Islamic Education to be a boring and monotonous subject because the tasks assigned by the teacher are too numerous and ineffective. The lack of teacher expertise in using technology-based learning media hinders the learning process, as teachers seem to only deliver the material without paying attention to whether students are receiving the taught material effectively or not.

The researcher proposes a Blended Learning model with a flipped classroom approach to solve this issue because, according to the researcher, this model is suitable for use, considering both students and teachers are already technologically literate but may not be able to apply it effectively. Therefore, the researcher believes that the Blended Learning model with a flipped classroom approach, which is considered simple, does not require many school facilities, and is easy to implement, is highly suitable for the subject of Islamic Education. Interestingly, the research indicates that the Blended Learning model with a flipped classroom approach has not been applied by Islamic Education subject teachers at SMA Negeri 2 Meulaboh, West Aceh.

Blended learning consists of two words originating from English, namely "blended" and "learning" *(Afsari & Wahono, 2022)*. "Blend" means mixed, while "learning" refers to education. Blended learning seeks to combine face-to-face classroom learning with online learning efforts to make students more independent (Nasution, 2019; Rahmanita, 2023; Rahmi & Hafinda, 2023). In summary, the Blended Learning model is a method that incorporates two different learning sensations: the conventional learning model characterized by lectures or face-to-face learning, and the modern method dominated by online learning, utilizing technological advancements such as mobile phones.

Flipped classroom is one type or component of the Blended Learning model. The term "flipped" comes from English, meaning "to exchange," indicating a learning

approach where students first study the material before entering the classroom. Teaching materials, quizzes, and exercises are provided online, while material discussions and discussions take place in face-to-face settings (Dewi, 2019; Sukma et al., 2022).

Similar research related to learning models has been conducted by various authors, including the use of blended learning models with the internet as a medium. This has been discussed in various writings such as theses, journals, and books, including research on social studies learning methods using various approaches. Several studies have explained that the success of online-based learning can transform students' learning outcomes. For example, in a journal written by (Yapici & Akbayin, 2012), it is stated that "the research results revealed that the blended learning model contributed more to students' biology achievement than traditional teaching methods did, and that students' attitudes towards the internet developed statistically significantly." From this research, it can be concluded that blended learning positively contributes to students' learning achievement.

Similar findings were found in research conducted by (Aini, 2021), which states that "there is a significant difference in learning achievement between classes using face-to-face learning models and classes using blended learning models." This indicates that the implementation of blended learning models also has the potential to significantly improve student learning achievement compared to conventional learning methods.

By using the appropriate learning model, such as Blended Learning, especially the flipped classroom type, focusing on the topic of Islamic Education, the content being delivered becomes more easily accepted (Novianti & Rukminingsih, 2021). The learning process can utilize various audio, visual, and audiovisual media, such as YouTube, Google Classroom, Edmodo, WhatsApp, or other platforms (Wiganda & Fatonah, 2021). The presence of media can assist students in imagining the content more easily and, if students are unable to comprehend the video in one viewing, they can replay it.

Every student has a different ability to understand the material—some are quick to grasp concepts, while others are slower. Therefore, media plays a significant role in the learning process. The presence of a teacher who can interact actively with students during the learning process has a positive impact on students, increasing their motivation to participate in the learning process. Conversely, if the teacher cannot interact effectively, students who are accustomed to conventional learning may find this new model less effective when implemented (Aulia & Syahid, 2023; Khafifatul, 2022).

From the above elaboration, it is evident that e-learning media in the education sector has a tangible impact. Therefore, the subject of the research will be the utilization of the Blended Learning model with a flipped classroom type at the Senior High School (SMA) level, specifically focusing on the subject of Islamic Education. The objective is to assess the extent of the influence of the Blended Learning model on students' learning outcomes in the subject of Islamic Education at SMA Negeri 2 Meulaboh, West Aceh.

SMA Negeri 2 Meulaboh, West Aceh, is a public school equipped with technology-based learning facilities capable of supporting the implementation of the Blended Learning model. It includes projectors as teaching aids and internet facilities accessible when students are within the school environment. Unfortunately, not all teachers utilize these media for teaching, including Islamic Education teachers. The reason for choosing this title is to observe the implementation of this learning model with students who may be unfamiliar with utilizing technology. Additionally, it aims to broaden the perspectives of both students and teachers who may lag behind in technology adoption despite the availability of various applications that can enhance the learning process.

Based on the above problem background, the research objective is to examine the influence of the Blended Learning model with a flipped classroom type on the subject of Islamic Education at SMA Negeri 2 Meulaboh, West Aceh.

METHOD

The type of research used in this study is experimental research because the study is conducted to address learning problems in the classroom, and the research approach is quantitative. However, in this study, the researcher employs a quasi-experimental design. This design is used to assess the improvement in understanding the subject of Islamic Education using the Blended Learning model with a flipped classroom type, while the control group uses a conventional teaching model where the teacher plays an active role, and students are passive recipients. The researcher chooses to use the Nonequivalent Control Group Design because this design is more significant for this research. Nonequivalent Control Group Design is almost the same as the pretest-posttest control group design, except in this design, both the experimental and control groups are not selected randomly.

The research design starts with an initial test (pretest) given to both classes, followed by the treatment in the experimental class. The study concludes with a final test (posttest) given to both groups using the same questions and content.

In this study, the subject population comprises all students in SMA Negeri 2 Meulaboh, West Aceh, totaling 527 students. The research sample, consisting of 60 students, is determined using purposive sampling. Data is collected using data collection techniques such as tests and observations. The researcher administers tests at the beginning (pretest) and end of the study (posttest) to both sample classes. The test questions in this study consist of 10 multiple-choice questions with multiple-choice answers (A, B, C, D, and E). After the pretest is completed, the experimental class receives treatment, involving teaching the same material using the Blended Learning model with a flipped classroom type. The final step involves administering the posttest with 10 multiple-choice questions.

Referring to the research problem associated with the issues above, the research hypotheses are as follows:

H0   : $\mu A \leq \mu B$

H1   : $\mu A > \mu B$

Explanation:

H0 : Null hypothesis, states that there is no significant effect of implementing the Blended Learning model with a flipped classroom

type on students' learning outcomes in the subject of Islamic Education at SMA Negeri 2 Meulaboh, West Aceh.

H1. : Alternative hypothesis, states that there is a significant effect of implementing the Blended Learning model with a flipped classroom type on students' learning outcomes in the subject of Islamic Education at SMA Negeri 2 Meulaboh, West Aceh.

In other words, the hypotheses test whether the implementation of the Blended Learning model with a flipped classroom type has a significant impact on students' learning outcomes compared to the conventional teaching model.

The test results data are analyzed using the paired t-test because it involves two samples with the same subjects. The formula for the paired t-test is:

$$t_{calc} = \frac{\bar{x}}{\sqrt{\dfrac{\sum x^2 d}{N(N-1)}}}$$

Explanation:

$\bar{x}$= Mean;

$\sum x^2 d$ = Sum of squared deviations;

N = Number of students.

This test is appropriate when comparing two sets of data from the same subjects to determine if there is a significant difference between the means of the paired observations.

The observation data is analyzed using the percentage formula:

$$P = \frac{F}{N} \times 100\%$$

Explanation:

P: Percentage;

F= Total score obtained;

N= Total number of students

This formula calculates the percentage based on the total score obtained compared to the total number of students.

Observation Category Table:

No.	Assessment	Average Score	Percentage
1	High	3,00-4,00	>80%
2	Moderate	2,00-2,99	60%-78%
3	Low	2,00-1,99	<60%

Thus, the test results are analyzed using the paired t-test for the test data, while the observation data is analyzed using the percentage formula and categorized according to the observation category table.

FINDINGS

Implementation of Blended Learning Model with Flipped Classroom Type in Islamic Education Subject at SMA Negeri 2 Meulaboh, West Aceh

1. Pretest and Posttest Results of Students

No.	Pretest	Posttest	Difference
1.	40	90	50
2.	70	80	10
3.	50	70	20
4.	70	80	10
5.	80	100	20
6.	50	90	40
7.	80	90	10
8.	40	60	20
9.	70	80	10
10.	40	60	20
11.	80	90	10
12.	60	80	20
13.	80	80	0
14.	80	80	0
15.	90	90	0
16.	60	80	20
17.	50	80	30
18.	70	100	30
19.	70	80	10
20.	70	90	20
21.	70	80	10
22.	70	100	30
23.	70	90	20
24.	80	100	20
25.	60	80	20
26.	50	90	40
27.	80	80	0
28.	40	80	40
29.	60	100	40
30.	40	80	40
Total	**1990**	**2530**	**610**
Average	**66,34**	**84,34**	**20,34**

Explanation:

Pretest : Scores before the implementation of the blended learning model.

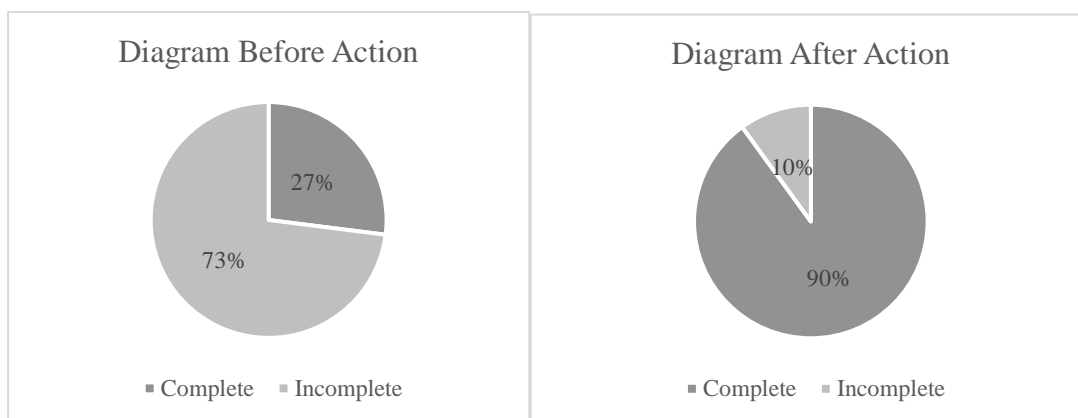Posttest : Scores after the implementation of the blended learning model.

Difference : Discrepancy between posttest and pretest scores.

Based on the table above, it can be said that the posttest scores are higher than the pretest scores, with a total posttest score of 2530 being greater than 1990. From the table, it is also known that there is an average difference between posttest and pretest scores of 20.33, with the average posttest score being 84.34 and the average pretest score being 66.34.

Here is a diagram of student proficiency before and after the implementation of the Blended Learning model with a flipped classroom type:

Diagram Before Action	Diagram After Action
27% / 73% (Complete / Incomplete)	10% / 90% (Complete / Incomplete)

The completion diagram before the intervention typically reflects the percentage of students who have achieved "completion" or reached a certain level of mastery of the material before the implementation of the action or learning intervention. Usually, "completion" means that students have achieved a certain score or level of understanding considered adequate according to learning objectives.

Based on the above diagram, it can be said that there is an increase in the level of student mastery, previously 27%, which has now increased to 90% after the implementation of the Blended Learning model with a flipped classroom type. There is a drastic decrease in the level of non-mastery, previously 73%, which has now decreased to 10% after the implementation of the Blended Learning model with a flipped classroom type.

2. Result of Teacher Observation Sheets

Statement	Value	Activity	Average	Percentage	Category
1	3	Introduction	3,4	85%	High
2	4				
3	3				
4	3				
5	4				
6	4	Core Activities	3,8	96%	High
7	4				
8	4				
9	4				
10	3				
11	4				
12	4				
13	4				
14	4				

15	4				
16	3				
17	4				
18	4				
19	3	Closing	3,5	87%	High
20	4				
Total	**74**	**Average**	**3,5**	**89%**	**High**

The table provides an evaluation of the teacher's performance during the introduction phase of the lesson. The "Value" column indicates the assigned score, and "Average" represents the average score. The information in the table is part of a broader evaluation of the teacher's activities during different phases of the lesson.

Based on the table above, it can be said that in each phase of the learning activities, the teacher's performance is in the high category with an average score of 3.5 (percentage level 89%). This consists of the introduction phase with an average score of 3.4 (percentage level 85%), the core activities with an average score of 3.8 (percentage level 96%), and the closing activity with an average score of 3.5 (percentage level 87%).

The Effect of Implementation Blended Learning Model with Flipped Classroom Type in Islamic Education Subjects at SMA Negeri 2 Meulaboh, West Aceh

To assess the impact of the implementation of the blended learning model with flipped classroom type, we can refer to the results of the test scores, namely the pretest and posttest scores. To calculate the difference between the pretest and posttest scores, the researcher used the formula for the t-test:

$$t_{calc} = \frac{\bar{x}}{\sqrt{\frac{\Sigma x^2 d}{N(N-1)}}}$$
$$= \frac{18}{\frac{\sqrt{281.880}}{30(30-1)}}$$
$$= \frac{18}{\frac{530,93}{970}}$$
$$= \frac{18}{0,611}$$
$$= 29,45$$

In comparing the calculated t-value with the critical t-value at a confidence level of 0.025 with a significance level of 5%, we can conclude that the critical t-value is 2.04. Because the calculated t-calc > t-critical (29.45 > 2.04), the null hypothesis (H$_o$) is rejected, and the alternative hypothesis (H1) is accepted. Thus, it can be concluded that there is an influence of the implementation of the blended learning model with flipped classroom type on students' learning outcomes in the Islamic Education subject at SMA Negeri 2 Meulaboh, West Aceh.

DISCUSSION

Implementation of Blended Learning Model with Flipped Classroom Type in Islamic Education Subject at SMA Negeri 2 Meulaboh, West Aceh

Driscoll elaborates on the definition of Blended Learning by referring to four different elements or concepts. First, Blended Learning is a learning process that seeks to integrate technological advancements to achieve educational goals, such as the use of websites. Second, Blended Learning is closely related to various learning approaches, namely cognitive, constructivist, and behaviorist approaches, to achieve desired learning objectives. Third, Blended Learning involves various formats of learning technologies, ranging from the use of CD-ROMs, web-based training, files, and video tapes, in conjunction with conventional face-to-face learning. Fourth, Blended Learning combines learning technology with real-world task instruction to create a positive impact on both learning and work (Khairunnisa, 2022).

The learning process is conducted in three meetings. In the first meeting, a pretest is conducted for both classes. In the second meeting, the experimental class receives treatment by using the Blended Learning model with a flipped classroom type, while the control class does not receive any treatment. In the final meeting, a posttest is administered with the same question format as the pretest, but the question numbers are randomized to assess the extent of students' memory and understanding.
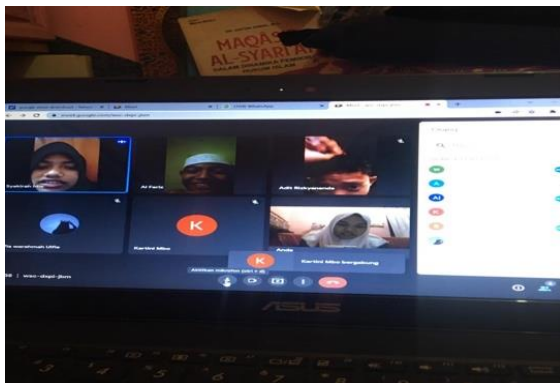
1. Online Learning in Class

Image showing the provision of learning materials through links for students.

Image depicting small group discussions to assess students' knowledge of the upcoming material.

Image illustrating the administration of an oral quiz.

2. Face-to-Face Learning in the Class

Image showing a discussion about quiz answers and the material that students have learned at home through the provided link by the researcher.

Based on the results of the initial test (pretest), it can be observed that, in general, students have not yet mastered the basic concepts of tolerance, harmony, and avoiding acts of violence. This is evident from the dominance of students who did not pass, with 27% of students passing and 73% not passing. Subsequently, the experimental class will receive an intervention before taking the posttest, namely the implementation of the blended learning model with a flipped classroom type before entering face-to-face classes. On May 22, the researcher shared a link in the WhatsApp group and conducted an oral quiz via Google Meet. The experimental class was then ready to attend face-to-face classes on Monday, May 23, 2022. Based on the results of the final test (posttest) in the experimental class, there was an improvement. This is evidenced by the increase in the number of students who passed, namely 90%, and only 10% did not pass. This proves that the students' grades can be considered to have passed the minimum completeness criteria (KKM) with an average score of >75.

The Effect of Implementation Blended Learning Model with Flipped Classroom Type in Islamic Education Subjects at SMA Negeri 2 Meulaboh, West Aceh

Based on the calculations above, it can be stated that there is an influence of the Blended Learning model with a flipped classroom type on improving student learning outcomes when compared to those who do not use the Blended Learning model with a flipped classroom type. Learning completeness can be measured based on the minimum completeness criteria (KKM) set at SMA Negeri 2 Meulaboh, West Aceh, for Islamic Religious Education, which is >75. To see how much influence the implementation of the Blended Learning model with a flipped classroom type has on Islamic Religious Education, it can be observed from the percentage of students who pass KKM and the percentage of students who do not pass KKM. This is evidenced by the completeness percentage of 30 students based on the posttest scores, with 90% of students passing and only 10% of students not passing.

In the experimental class, the teacher implemented the Blended Learning model with a flipped classroom type by sharing YouTube links, journals, and other materials in the WhatsApp group. Students were then given the opportunity to access and study the material before face-to-face classes. In face-to-face meetings, the teacher thoroughly discussed the material and asked students about any aspects they did not understand from the material they had studied online. The teacher and students then analyzed and evaluated during discussions, reviewing what the students had learned at home.

Throughout the research period, from the first to the last meeting in the experimental class, no obstacles were found. This is because students were already prepared to participate in the learning process since they were given a longer opportunity to study independently at home. In contrast, in the control class, students were not given the opportunity to study the material before the learning process took place. Instead, they directly learned it in class, and the teacher was their main source of learning.

CONCLUSION

The application of the blended learning model with a flipped classroom type obtained an observation sheet analysis result with a score of 89%, categorized as high. This proves that the researcher has successfully implemented the blended learning model with a flipped classroom type in the experimental class at SMA Negeri 2 Meulaboh, West Aceh. The success of implementing a learning model can be measured by the changes students experience in their learning. This encourages teachers to continuously generate creative ideas to change teaching strategies, preventing students from getting bored during the learning process. One such strategy is the implementation of the blended learning model with a flipped classroom type, as applied by the researcher in the experimental class. The results show a significant impact of implementing the blended learning model with a flipped classroom type on the learning outcomes of students in Islamic Religious Education at SMA Negeri 2 Meulaboh, West Aceh. This is evident from the test scores (pretest, posttest) in both the control and experimental classes. With the result of the t-test at a

significant level of ∝=0.025 and degrees of freedom df = 30, the calculated t-value is 29.45. Comparing this to the t-table value of 2.04 at a 5% error, it can be concluded that the null hypothesis (H0) is rejected, indicating a significant influence of the blended learning model with a flipped classroom type on the learning outcomes of students in Islamic Religious Education.

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