Implementation Of The Lab Rotation Model In Blended Learning Based On Student Perspectives

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Abstract. The use of digital technology requires the world of education to transform digital so that students are increasingly in demand. One of them is Islamic Boarding School education which metamorphoses by providing education that is not only oriented towards religious knowledge but broader in the mission of improving the quality of human resources to be able to face a wider real life in accordance with challenges of the times. Various learning methods are applied in order to be able to balance and develop. One of them is the use of the Blended learning method, which is a learning method that combines technology-based learning and information with classroom or face-to-face learning. Combining learning or combining face-to-face, distance learning, and e learning. To implement the method, a study was conducted at the Darul Muta'allimin Islamic Boarding School Middle School to see students' perceptions. The blended learning model used is the lab rotation model. The results of research students' perceptions of learning using the blended learning method get a positive response with a value of 65% agree because it provides motivation for students to study hard and is very helpful in learning and the material provided is easy to understand.

1. Introduction

Tasikmalaya City is a city in the province of West Java which has 206 pesantren educational institutions spread across 10 sub-districts \cite{1}. Islamic Boarding School is the oldest religious education institution that grows independently, develops and has a major contribution to the education of the Indonesian people \cite{2}. The Role of Pesantren in the City of Tasikmalaya gives a good contribution to the moral education and character of the young generation in the city of Tasikmalaya. Islamic Boarding School has a strong tradition in the community so that it is able to transform into a product of local culture and original Indonesian society. Because its presence has given a populist impression on society through the application of a non-discriminatory education system so that it can be accessed by all groups. Islamic Boarding School applies an education system that prioritizes religious knowledge, this type of pesantren is known as the Salafiyah boarding school. Along with the development of education and community needs, pesantren metamorphose by providing education that is not only oriented towards religious knowledge but is broader in the mission of improving the quality of human resources to be able to face the wider real life in accordance with the challenges of the times. Islamic Boarding School reforms the existing education system by organizing multi programs, namely religious...
knowledge, general science and its practicalities. So, since the 90s the ponpes innovation in developing public education reached its peak. Almost all boarding schools that have been established in their santri abilities in the field of religion, then opened public education, such as junior high, high school and so on. This type of Islamic boarding school is known as modern Islamic boarding school. Darul Muta’allimin Islamic Boarding School is one of the boarding schools in the city of Tasikmalaya which has been established for almost a century, which holds a fusion education between salafiyah and modern namely yellow book study, Islamic junior high school, and Integrated High School.

In this study, the authors focus on the study of the application of blended learning in Islamic boarding schools which are included in modern boarding schools. The representation of the modern Islamic boarding school that was used as the object of this study was the Darul Muta’allimin Islamic Boarding School in Tasikmalaya City. More specifically, this study aims to determine the perceptions of students at the Darul Muta’allimin Islamic boarding school on blended learning technology. Most of the research in the field of blended learning compares blended learning with face-to-face or online learning with aspects of research that is investigating the effectiveness of instructional method learning [3]. Blended learning is learning that combines technology-based learning and information with classroom / face-to-face learning [4]. Combining learning or combining face-to-face, distance learning, and e learning [5].

Blended learning facilities make students able to learn flexibly because students easily interact with their teachers and obtain sources of information or teaching material both in class and outside the classroom through the help of online information technology[6]. In learning is not entirely done online but complement and overcome the material that has not been conveyed in learning when students study in class [7]. Blended learning can provide students with more experience and benefits, such as increasing ease of access to students in learning materials, improving the quality of learning, and reducing learning costs[8].

Effective blended learning starts from institutional commitment, improvement of facilities and access according to the conditions of learning so that user satisfaction will increase and learning will be more effective[9]. So students can meet the needs of society 4.0 and industry 4.0. One of them is by building a collaborative virtual learning environment [10] namely the existence of learning management to respond to changes in students in digital society [11].

2. Methods
The methodology in this study can be explained as follows:

2.1. Learning
The development of learning design based on blended learning must be able to provoke students’ creativity in discussing, interacting, and collaborating to get maximum outcome [12]. Blended learning learning model conducted by this research is a lab rotation model where students can move from one station to another with a predetermined schedule. online learning is specialized using a computer lab that has been provided specifically for a particular field that is managed by subject matter teachers such as ICT[13].
The title of learning in this research is how to make a presentation slide using Microsoft Power Point with 2x45 minutes learning time.

Table 1. Blended Learning Method.

| Learning Methods | Learning Activities                                                                 | Learning Media  |
|------------------|--------------------------------------------------------------------------------------|-----------------|
| Learning to Create Presentation Slides at Microsoft Power Point | The teacher conveys the purpose of learning Microsoft Power Point                  | White board    |
|                  | The teacher conveys basic material about Microsoft Power Point                      | Infokus         |
|                  | The teacher asks the extent to which students understand Power Point material       |                 |
|                  | The teacher asks the extent to which students understand Power Point material       |                 |
|                  | The teacher tests the student participants for the material presented.              |                 |
| E-Learning Method | Students see a video introduction to basic Microsoft power points                   | Computer        |
|                  | Students see the tutorial video making power points with Microsoft power point applications | Internet, Video |
| Practice Method   | Practice making slide presentations with Microsoft Power Point applications         | Computer, Microsoft Power Point application |
|                  | The teacher checks students whether they applications have understood and can make their own presentation slides |                 |
2.2. Questionnaire

After finishing learning students are given a questionnaire. The aim is to find out comments and explore students’ perspectives on learning with blended learning technology. The questionnaire used is an attitude scale that refers to the Likert scale parameters[14][15] with the choice of answers as a statement of participants’ perceptions of the learning methods of blended learning Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree. After finishing learning students are given a questionnaire. The aim is to find out comments and explore students’ perspectives on learning with blended learning technology. The questionnaire used is an attitude scale that refers to the Likert scale parameters[14][15] with the choice of answers as a statement of participants’ perceptions of the learning methods of blended learning Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree.

| No | Statement | Attitudes / Criteria |
|----|-----------|----------------------|
|    |           | Strongly Agree | Neutral | Disagree | Strongly Disagree |
| 1  | Blended Learning method learning makes it easier to understand the material |             |         |           |                   |
| 2  | Blended Learning learning methods Make learning not boring |             |         |           |                   |
| 3  | Learning Blended Learning methods students are more active to learn |             |         |           |                   |
| 4  | Blended Learning method learning makes it easy to access material |             |         |           |                   |
| 5  | Blended Learning method learning provides a motivational effect for learning |             |         |           |                   |
| 6  | Blended Learning method learning Suitable for use as a method of learning today |             |         |           |                   |

2.3. Analysis

The results of the data obtained from the questionnaire were analyzed using a Likert scale to measure students’ perceptions in learning using the blended learning method. At this stage is quantitative analysis. In quantitative analysis, what percentage will have a positive perspective compared to a negative perspective on learning using blended learning technology. With the assessment of the following criteria:
Table 3. Score Skala Likert

| Criteria        | Score Likert |
|-----------------|--------------|
| Strongly agree  | 5            |
| Agree           | 4            |
| Neutral         | 3            |
| Disagree        | 2            |
| Strongly Disagree | 1          |

The steps in analyzing result data are as follows:
- Check the completeness of the answers from respondents;
- Quantifying the results of checking by giving a score in accordance with predetermined weights;
- Making data tabulation;
- Calculate the percentage of each sub variable.

3. Result and Discussion

Data collection is obtained through questionnaires that are formulated and filled out by respondents who are then processed. Respondents involved in collecting data were 40 students of Class IX Islamic Boarding School at Darul Muta'allimin Islamic Boarding School. with the results that there are 9 students who give very agreeing answers, 9 agreeing with 12, neutral answering with 5, disagreeing with 8, and strongly disagreeing with 6. Measurements made using a Likert scale In order to be calculated in quantitative form, the answers of the Respondents can be given a weighted score or Likert score with the calculation of:
- Determine the scale of the answers along with the value of each scale
  With the formula: \( T \times P_n \)
  Information :
  \( T = \) Total number of respondents who voted
  \( P_n = \) Choice of Likert score
  With the following results:

Table 4. Results Value Criteria

| Criteria            | Score Likert (Pn) | Number of Respondents (T) | Total Score (Pn * T) | Percentase Criteria(%) |
|---------------------|-------------------|---------------------------|----------------------|------------------------|
| Strongly agree      | 5                 | 9                         | 45                   | 34.62                  |
| Agree               | 4                 | 12                        | 48                   | 36.92                  |
| Neutral             | 3                 | 5                         | 15                   | 11.54                  |
| Disagree            | 2                 | 8                         | 16                   | 12.31                  |
| Strongly Disagree   | 1                 | 6                         | 6                    | 4.62                   |
| **Total**           | **40**            | **130**                   | **100%**             |                        |
• Determine the criteria interval value
To determine the value of the interval (distance range) and the interpretation of percent in order to find out the assessment by the method of finding the percent score interval (I).
Interval Formula (I)
\[ I = \frac{100}{\text{Total Score (Likert)}} \]
\[ = \frac{100}{5} \]
Results (I) = 20
So, for the interval value from the lowest 0% to the highest 100% he following criteria for interpretation of scores based on intervals:

| Interval Value | Criteria          |
|----------------|-------------------|
| 0% - 19.99%    | Strongly Disagree |
| 20% - 39.99%   | Disagree          |
| 40% - 59.99%   | Neutral           |
| 60% - 79.99%   | Agree             |
| 80% - 100%     | Strongly agree    |

• Determine the yield value.
Before determining the results, the highest score (X) and the lowest score (Y) must be determined for the evaluation criteria using the following formula:
\[ X = \text{highest score Likert} \times \text{number of respondents} \]
\[ Y = \text{lowest score Likert} \times \text{number of respondents} \]
The highest number of scores for the ”Highly Agree” criteria is 5 x 40 = 200
The lowest score for the criteria of ”Strongly Disagree” is 1 x 40 = 40
value = 200
Y value = 40
So, if the total score of the respondent’s score is 130, then the assessment of the respondents’ interpretation of the learning of the blended learning method is the result of the value generated using the% Index formula.
\[ \text{Index Formula} \% = \left( \frac{\text{Total Score}}{X} \right) \times 100\% \]
\[ = \left( \frac{130}{200} \right) \times 100\% \]
\[ = 65\% \]
So, the value of the results obtained is 65% within the criteria of ”Agree”

4. Conclusions
Based on calculations using a Likert scale of the questionnaire given to 40 students, a score of 65% was obtained with the criteria of ”Agree” to the learning method of blended learning, in general participants gave a positive perception of the implementation of the learning method using the blended learning method. With the value per criterion that is stated Strongly Agree (34.62%), Agree (36.92%), Neutral (11.54%), Disagree (12.31%), and Strongly disagree (4.62%).

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