The development of whatsapp group discussion to solve the limitation of lecture-students interaction at class

A R Fauzi

Universitas Nahdlatul Ulama Blitar, Jalan Masjid 22, Blitar City, Indonesia

E-mail: achmadryan@unublitar.ac.id

Abstract. This study aims to produce an e-learning product in the form of WhatsApp Group Discussions that are valid and feasible to use. This research based on the idea of overcoming problems about the limited interaction between teachers and students in the classroom, and responding to technological developments that enter education. This research uses the development steps from Gall and Brog. The instrument used is an expert learning and technology validation sheet. The results of the validation data analyzed using a combined analysis formula to determine the feasibility of the product. This research conducted on students of PGSD UNU Blitar. The results of the study show that in combination, the products developed have met the criteria sufficiently valid. This indicates that in terms of learning and technology the product is feasible and can be used in lectures. Thus, the product can overcome the problem of limited interaction between lecturers and students of UNU Blitar in lectures activity.

1. Introduction

Technology has entered into various fields of life without exception in the world of education. The development of technology in education can be utilized by educators to develop an interactive multimedia based learning [1], [2]. The application of such learning makes students today prefer to use their electronic devices rather than notebooks to record various information that has been given [3], [4], [5]. Moreover, the ease of students to exchange or access information [6], books and hand notes are increasingly left behind.

In line with the ease that students have in accessing information, the interaction between lecturers and students is also decreasing. Their preoccupation with operating smartphones diverts their attention in lectures. This apparently also happened to students of PGSD UNU Blitar. Based on the observations of researchers during lectures, when there was a presentation in front of the class, students who were sitting behind were comfortable operating a smartphone without paying attention to their friends in front. When entering the discussion session, only the students who sit ahead are actively involved in the discussion. The incident did not only happen once, but several meetings and repeated. This causes a limited interaction between lecturers and students in the classroom. This has an impact on the lack of activity and their involvement in the discussion, whereas with the discussion activities, they will get a lot of information.

Therefore, it is necessary to take a concrete step so that the incident does not recur. The steps can be done are to develop WhatsApp Group Discussion. WhatsApp Group Discussion is a WhatsApp application feature to form a group that adds a particular topic. This step was done because the communication media used by students today is the WhatsApp application. Almost all students already have the WhatsApp application installed on their smartphone. WhatsApp is the most
commonly used application because it makes it easy for users and shortens the time to get information [7]. Therefore, this application is no stranger to users.

WhatsApp development as a discussion group has been carried out by several researchers. The results of the study also showed results that support the use of WhatsApp as a discussion group. The use of WhatsApp as a discussion group can increase the knowledge and skills of nursing students in practice in the clinic. The group provides information that assists students in integrating theory and practice [8]. The trial of the use of WhatsApp and Google Drive in lectures that lasted for thirteen meetings showed results that were in line with the researchers’ plan to develop internet based blended learning [9]. WhatsApp is a social media application that is often accessed by students [10]. Students get extensive information through WhatsApp because information from the application is often used as a reference by students. WhatsApp causes communication to be easier between health workers and their patients [11]. Officers can monitor the progress of the condition of the patient remotely and various healthy living tips. WhatsApp’s advantage for patients is that communication becomes more intense without having to meet a health worker directly.

Four studies have focused on developing WhatsApp and showing clear research results. However, these studies do not focus on developing WhatsApp as a discussion group, which is specifically used by students of education. Research that has been carried out still shows the use of WhatsApp in the health sector. Therefore, WhatsApp has not been used as a discussion group for PGSD students. Therefore, to overcome the existing problems and the idea of developing a WhatsApp Group Discussion, this research is important to do. This study aims to develop the WhatsApp Group Discussion, which is legally used in teaching PGSD students to overcome the problem of limited interaction between lecturers and students.

2. Method

This research is a development research. This study uses a research step developed by Gall et al. The research steps include: (1) preliminary research; (2) planning; (3) develop the initial product form; (4) conducting initial product field trials; (5) revise the initial product to obtain the main product; (6) conducting field trials of the main products; (7) revise the main product; (8) conduct operational field tests; (9) revise the final product; (10) disseminate and implement products. [12]

This research data was obtained from the expert validation sheet and the user validation sheet. Expert validation sheets are used to obtain product validity data. This expert validation sheet is divided into two: learning expert validation sheets and technological expert validation sheets. User validation sheets are used to obtain user practicality data. Both validation sheets were prepared by researcher in which contained indicators of ease of use, level of use of technology, and effectiveness of learning.

The data that has been obtained will be analyzed gradually. The first stage is an analysis of validity and practicality. This analysis is conducted to determine the level of validity and validity of the product. This analysis is done using the formula:

\[ V = \frac{TSEV}{S_{-max}} \times 100\% \]  

Note

\( V \) = Expert validity

\( TSEV \) = Total score from expert

\( S_{-max} \) = Maximum score

Then, expert and user validity score is interpreted according Table 1.
Table 1. Product validity criteria [14].

| No | Percentages     | Criteria          | Interpretation                  |
|----|-----------------|-------------------|---------------------------------|
| 1. | 81% - 100%      | Very valid        | Can to use without revision     |
| 2. | 61% - 80%       | Quite valid       | Can to use within little revision|
| 3. | 41% - 60%       | Less valid        | Not recommended to use           |
| 4. | 21% - 40%       | Invalid           | Can’t to use                    |
| 5. | 0% - 20%        | Very invalid      | Very unusable                   |

The results of the analysis of the first phase will enter in the second stage. This second phase was carried out to test the feasibility of using the product. This second stage analysis was carried out with combined analysis. The combined analysis formula is:

\[
V_{-tot} = \frac{V1 + V2}{2} \times 100\%
\]

Note

- \(V_{-tot}\) = Combined validity
- \(V1\) = Validity score from learning expert
- \(V2\) = Validity score from technological expert

Then, combined validity score is interpreted according Table 2.

Table 2. Combined validity criteria [15].

| No | Percentages     | Criteria          | Interpretation                  |
|----|-----------------|-------------------|---------------------------------|
| 1. | 81% - 100%      | Very valid        | Can to use without revision     |
| 2. | 61% - 80%       | Quite valid       | Can to use within little revision|
| 3. | 41% - 60%       | Less valid        | Not recommended to use           |
| 4. | 21% - 40%       | Invalid           | Can’t to use                    |
| 5. | 0% - 20%        | Very invalid      | Very unusable                   |

Table 3. Learning Expert Validation.

| No. | Statements                                                                 | Score |
|-----|-----------------------------------------------------------------------------|-------|
| 1   | The use of application can involve the students                             | 1     |
| 2   | The use of application encourages the students to discuss actively          | √     |
| 3   | The use of application encourages the students to read the material which is shared | √     |
| 4   | The use of application allows the communication between the lecturers and the students | √     |
| 5   | The use of application allows the communication between the students and the other students | √     |
| 6   | The use of application to support the implementation of E-Learning          | √     |
| 7   | The use of application is to support the achievement of the lecturer’s goals | √     |
| 8   | There is a suitability between application usage and student development level | √     |

Total Score of Each Criteria: 2 15 8

Total Score: 25
3. Result

3.1. Learning Expert Validation

The result of learning expert validation is shown in Table 3. The validator gives suggestions by adding the results of the validation in following up on the lack of lecturers can ask questions about lecture material to cause class discussion.

3.2. Technological Expert Validation

The result of technological expert validation is shown in Table 4.

| No. | Statements                                                                 | Score |
|-----|-----------------------------------------------------------------------------|-------|
| 1   | The application is easily accessible to the students and the lecturers     | √     |
| 2   | The application is to support the students and the lecturers to access information | √     |
| 3   | The application is to support the lecturers and the students to communicate and discuss | √     |
| 4   | The application can support the remote communication                       | √     |
| 5   | The application shows that an application of technological developments for learning | √     |

Table 4. Technological Learning Expert.

The validator gives suggestions to add the validation results so that they are rearranged related to the information shared closed by the conversation afterwards.

4. Discussion

4.1 Analysis of Learning Expert Validation’s Results

Based on validation data by learning experts, information is obtained that out of the eight indicators highlighted, there is one indicator with two scores, five indicators with three scores, and two indicators with four scores. From this assessment, a total score of 25 is obtained. The score of 25 is included in the analysis formula. The results of the analysis showed a score of 78.125%. The score of the analysis is interpreted and gets a fairly valid criterion, which means it can be used with minor revisions. Furthermore, the product was revised in accordance with expert advice, namely giving questions related to class discussion material.

4.2. Analysis of Technological Expert Validation’s Results

Based on validation data by technological experts obtained information that out of the five indicators highlighted, there were four indicators worth three, and one indicator was four. The valuation is obtained by a total score of 16. The score of 16 is included in the analysis formula. The results of the analysis show a score of 80%. The score of the analysis is interpreted to have sufficiently valid criteria which means it can be used with minor revisions. Furthermore, the product was revised in accordance with expert advice by giving a redesign, so that the material was not covered by the discussion afterwards.
4.3. Combined Analysis
After analyzing the results of expert validation, a combined analysis carried out by combining the score of expert validation. The results of these scores are included in the combined analysis formula and produce a score of 79.06%. This score included in the criteria is quite valid. Then, the product developed can be used with a little revision. WhatsApp Group Discussion products are quite suitable for use in lecture activities, although they still need revision according to expert advice. This is because this product has been quite valid according to the learning and technology criteria.

The results of this study also showed increasing student activity in discussions. Students who at the time of presentation sit behind will actively ask and argue through the products developed. This is in accordance with the indicators of student involvement and ease of communication that get valid and usable criteria. These results indicate the problems of interaction limitations based on the results of previous studies had successfully completed.

The use of this product is supported by various findings that the use of WhatsApp allows someone to communicate with each other and share information with friends, family or others [16]. WhatsApp also allows one to form groups to communicate more easily, practically without the need to repeat information [17], [18]. This makes WhatsApp a chat application for smartphones, which makes it easy to communicate [19]. In terms of education, the use of WhatsApp like this will provide convenience in communication between the lecturers and the students, creating a conducive atmosphere in the classroom, forming a discussion and ease of sharing information. [20] Thus, WhatsApp Group Discussion products are very helpful for the lecturers and the students in discussed related material. It is also used to overcome problems in the limitations of classroom interactions.

5. Conclusion
After going through a series of development processes, this research has produced a WhatsApp Group Discussion product that can be used in lectures. Feasibility in terms of learning and technology has shown that this product can achieve the objectives of this study. This product can be used to overcome the problem of limited interaction between the lecturers and the students of UNU Blitar in the lecture class.

6. Suggestion
The use of WhatsApp Group Discussion should cause the lecturers to be more active to attract students. The lecturers should take the time to plan well the discussion process, so that student activities and information shared are not covered by conversations that arise.

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