The Use of Google Classroom Application in a Blended Learning Environment

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Abstract. Educational challenges in the era of the industrial revolution 4.0 in the form of changes in the way of learning, thinking patterns and ways of acting students in developing creative innovations in the educational process. Today’s learning has used a variety of ways and technologies as the main supporting tools to increase student knowledge and competency. The Google Classroom application is a learning application that uses internet technology that is easily accessed through smartphone devices and develops the activeness and independence of student learning. The results of this study indicated that the use of the Google Classroom application: (1) made it easy for students to access learning resources, (2) fostered student interest in learning, (3) trained student learning discipline, (4) made students learn anytime and anywhere, (4) supports Blended learning when outside the classroom.

Keywords: Google Classroom, Blended Learning, Learning Application

1. Introduction

The 4.0 industrial revolution with all its impact supports that educators need to update themselves to make changes starting from the way they teach, how they act students in developing their innovation and creativity. Today’s learning needs to be designed using a variety of ways by involving technology in learning to increase knowledge and competence to maintain students’ learning experiences.

The implementation of technology at school has important roles. Most teachers and students know how to use it. They can access it by using a laptop, computer, and smartphone. For students, it helps them to search some literatures for their assignments, relearn the materials which were taught in class, and communicate with their friends and teachers. For teachers, they get many resources about teaching materials, journals, and e-books; make power points with some animations that can attract the students’ attention, and keep interaction to their students everywhere by using online learning application.

Blended learning is one of the learning models that combine online learning with the application of technology and face to face directly in the classroom. In the face to face, learning is done between teachers and students while in online learning using learning applications in the form of e-learning. The use of e-learning in learning systems aims to expand access to public education, hence learning materials can be accessed easily, without being limited by space and time, interactive, and effective. E-learning can not only increase the number of students who wish to register, but also provide
opportunities for students who were previously declared unable to attend education to be able to do so [1].

One e-learning application to support the implementation of learning with a blended learning model is google classroom. This tool is very easy to use and free. Teachers can create online classrooms and invite their students then create and distribute assignments and materials. The main advantage of google classroom is that all assignments are displayed in good order and they can always be accessed and checked [2]. Therefore, the students don't need to worry about losing assignments when they submit. Teachers can also directly give the scores and give feedback.

Some previous researches showed a positive impact on the use of Google Classroom, first was found that students were not interested in learning because of traditional learning [3]. Hence, it caused their learning outcomes were not optimal. To overcome this problem, the teacher used Google Classroom application which can create a video, save time and paper, and distribute tasks well. Second previous research was showed that Google Classroom increased student participation and learning and improved classroom dynamics [4]. Based on these findings, the researchers tried to know the use of google classroom at social and science classes whether there is different perception at both classes. The purpose of this study is to analyze the use of the google classroom application by high school students on learning based on blended learning.

Literature Review

Technology gives advantages for teachers and students. Advantages of teachers using technology are improving the quality of teaching and learning process, offering and providing more flexibility. While, the advantages of students using technology are always giving free and unlimited seats, and giving students a chance to join international programs like a seminar, training and more [5].

Blended learning is a concept of teaching and learning process which includes face to face and teaching supported by ICT [6]. Besides, blended learning does not leave face to face interaction in learning activities, but it helps the teaching and learning process every time and everywhere which provided by online learning application [7]. Moreover, A research showed that the academic achievement average of the students who have studied in the blended learning environment has been found higher than the academic achievement average of the students who have studied in traditional learning environment [8].

Blended learning is a combination of face-to-face methods with the use of computers in the learning process [9]. Blended learning is also learning that emphasizes students to learn freely, flexibly, solve problems and be oriented to the real world through the practice of student learning [10]. Blended Learning appears because of the learning environment has used internet technology in their daily life. Blended learning does not mean change traditional teaching at class, but it redesigns the strategy to utilize technology, hence it needs learning applications that will help the students to operate blended learning [11]. Blended learning changes the way students learn in the digital era, between students and teachers have ample opportunities to interact and communicate with each other in learning in the classroom and learning outside the classroom [12].

In learning outside the classroom required e-learning applications to support its implementation. E-learning focuses on online learning without face to face interaction while face to face learning strongly supports the existence of teachers and students can interact with students both physically and emotionally [13]. One e-learning application that is open source is the Google Classroom application which is a free application designed to help students and teachers communicate, collaborate, organize and manage assignments, go paperless, and much more [14]. The design of google classroom is more familiar to students because they already use several products from Google via an account. Google Apps has connectivity between google classroom with a google drive account so there is no need to worry about storing documents on a computer [15]. The google classroom application is available for everyone with Google Apps for Education, a free suite of productivity tools including Gmail, Drive, and Docs [16].

2. Method

The type of research used in this research was descriptive research to describe the use of the google classroom application by high school students on learning based on blended learning. This research
was conducted at the SMA Negeri 4 Kendari with respondents consisting of 15 students from the Natural Sciences department and 31 from the Social Sciences Department. Collecting data in this research use the USE Questionnaire technique, a tool used in the preparation of questions that would be made in the form of questionnaires with indicators including usage, satisfaction, easiness, the difference with teachers' art.

The research data were analyzed with descriptive statistics in the form of percentages, categorizations, and graphs. Categorization was done to learn about how the use of google classroom applications by high school students in learning based on blended learning.

Table 1. Categorization of the use of the google classroom application by high school students

| No   | Interval                     | Category |
|------|------------------------------|----------|
| 1    | 75% ≤ X ≤ 100%               | Very good|
| 2    | 50% ≤ X < 75%                | Good     |
| 3    | 25% ≤ X < 50%                | Enough   |
| 4    | 0% ≤ X < 25%                 | Less     |

The use of the google classroom application was categorized good by high school students in learning based on blended learning if the percentage of student answers is in the minimal category good to very good.

3. Results and Discussion

The first step taken in this study is to provide instructions to respondents on how to use the google classroom application from joining classes, accessing material, sending assignments, and doing quizzes/exercises. Meanwhile, teachers are also guided to manage learning classes with a blended learning model using the Google classroom application for learning outside the classroom. Kuo, et al., revealed that blended learning supports students to interact and discuss outside the classroom online. Interaction and discussion activities can take place between fellow students and the teacher. Student interaction can be done for 7 hours a day or 7 days a week without limits [17].

Conventional learning focuses on the teacher as a learning resource so that it is no longer relevant in the current digital era and must be supported by technology-based media [18]. The combination of methods and learning media aims to build easy interactions between students and teachers, and among other students [19]. After learning runs for several meetings with the teacher applying the integrated blended learning model of the google classroom application, respondents are given testing to measure their response to the use of the google classroom application. Respondents were given a USE Questionnaire containing four indicators measured including usage, satisfaction, easiness, the difference with teachers art.

The USE Questionnaire measurement aims at providing information on the use of the corresponding google classroom application. Moreover, it supports blended learning so that it can illustrate that the google classroom application is following the needs of high school students who provide satisfaction to users or not. Measurements were made by distributing questionnaires to students of SMA Negeri 4 Kendari as research respondents involving as many as 15 Natural Sciences students and 31 Social Sciences students.

The results of table 2 shows that the use of the google classroom application is in a good category. This indicates that the google classroom application is by the needs of high school students and supports blended learning based learning implemented by teachers. With the google classroom application, students can easily access teaching material, take part in online discussions, and send assignments. Google Classroom can also foster student interest and interaction in learning, train student learning discipline, and students can learn flexibly anytime and anywhere and support blended learning based learning when outside the classroom. The results of this study are also in line with Hwang & Chen's study which states that the use of technology-based learning media provides benefits for teachers and students to access material and interact with each other through the learning environment anywhere and anytime with the help of online applications [20]. Although there are differences in the percentage of each item statement for the two majors (Natural Sciences & Social
Sciences), on average the percentage is not far enough different. Integration of learning analysis with google classroom is needed because they believe that there are major limitations to the tools that google classroom has [21].

Table 2. Recapitulation of Students' Answers toward the Use of Google Classroom Applications

| Indicator         | Statements                                                                                     | Percentage Science | Social Science |
|-------------------|------------------------------------------------------------------------------------------------|--------------------|----------------|
| Usage             | • Google Classroom helps me to collect my assignment fast and easily                           | 78,23%             | 86,67%         |
|                   | • Google classroom is very useful in teaching and learning process                             | 75,00%             | 80,00%         |
|                   | • I don't need to worry about assigning tasks if my work is scattered using Google classroom   | 77,42%             | 86,67%         |
|                   | • I am satisfied with the application of Google classroom                                       | 70,97%             | 76,67%         |
|                   | • Google classroom is entertaining to use                                                      | 69,35%             | 83,33%         |
| Satisfaction      | • How to work this application is by what I want (in the collection of assignment, and get material from the teacher) | 68,55%             | 71,67%         |
|                   | • Google Classroom is easy to use and learn                                                   | 79,03%             | 83,33%         |
|                   | • Google Classroom has a clear display and easy to understand                                | 68,55%             | 76,67%         |
|                   | • I easily and quickly recover when making mistakes                                           | 66,94%             | 63,33%         |
|                   | • It's easy for me to remember how to use Google classroom                                    | 74,19%             | 75,00%         |
|                   | • Google classroom trained my discipline to be on time in collecting assignments rather than collecting paper assignments to the teachers | 79,84%             | 71,67%         |
| Easiness          | • I prefer collecting assignments by using Google classroom to collecting paper assignments   | 64,52%             | 65,00%         |
|                   | • Google Classroom helps me to save my document (material and assignment)                     | 80,65%             | 80,00%         |
|                   | • I prefer discussing with the teacher by Google classroom to discussing in the class         | 60,48%             | 60,00%         |
|                   | • I more understand the material from I read the material in Google classroom than the teacher directly | 79,84%             | 63,33%         |
|                   | • I like Google classroom better than the other learning application                           | 75,81%             | 61,67%         |
| Difference With   |                                                                                               |                    |                |
| Teachers          |                                                                                               |                    |                |
| Art               |                                                                                               |                    |                |
| Average           |                                                                                               | 73,08%             | 74,06%         |
| Overall Average   |                                                                                               | 73,57% (Good)      |                |

The results of this study also showed that 80.66% of high school students stated that the google classroom application had used in the learning process based on blended learning, 73.42% of high school students had good satisfaction with the google classroom application used, amounting to 73.38% of students High school was easy to use the google classroom application, and 70.23% of the google classroom application was better with the learning that has been applied by the teacher in the class so far. These results indicated that the google classroom application is very quickly familiar and easy to use by students and teachers to support blended learning when outside the classroom. This result is also supported by researchers who revealed that of the respondents as many as 100 people stated the overall performance of the google classroom display was far better in the aspects of communication, interaction, benefits, ease of access, and student satisfaction [22]. There is a positive student perception related to the use of google classroom which is integrated with peer learning because the learning objectives are also achieved. [23].
The Google classroom application can also be used by students and teachers as a place to store material files, and assignments that can one day be accessed again. The Google classroom application can also be installed via Android, iPhone and iPad based smartphones which can be downloaded via Playstore.

4. Conclusion
The conclusion from the results of this study is the use of the google classroom application by high school students on blended learning based learning is in a good category. This shows that students have a good view of the google classroom application which includes: students easily access learning resources, students have good learning interest and interaction, students are trained in the discipline in learning, students can learn anytime and anywhere, and support blended learning when outside the classroom.

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