The Two Blended Learning Model Designs (Moodle and Instagram): A Comparative Study in University Level

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Abstract: IT development opens chances where students can learn anytime and anywhere overcoming the burden of time and place. In line with this, blended learning is a choice where classroom activities and e-learning are integrated to support learning. This study was aimed at determining blended learning effectiveness by using two different media (Moodle and Instagram) for two different subjects (mathematical representation and English-speaking). The participants were students of Mathematic Education in one of State University in Indonesia. The method applied was comparing the significant result of both two subjects. The study found that the effectiveness of blended learning in university level had a positive impact. It can be seen from the students' enthusiasm in accessing the lesson material on the website. There were differences in the achievement of mathematical representation and English-speaking skill. Their achievement was considered good. This study recommends that blended learning be applied to various subjects at university level.

1   INTRODUCTION

Blended learning is a new environment of teaching and learning approach that combines traditional and e-learning advantages. This environment has stimulated teachers and researchers to find out the new online applications or to enhance the existed ones to be used in teaching learning purpose in line with blended learning approach. There are various of existed online applications that can be used as media in blended learning i.e. Moodle and Instagram (Grosch et al., 2014; Kharb and Samanta, 2016; Okaz, 2015; Soler et al., 2017). These media are believed can improve students' achievement in learning (Smith and Caruso, 2010). However, the effectiveness of using these media as blended learning approach still needs to be investigated especially in Indonesian context (Baldwin-Evans, 2006).

In previous studies relating to the effectiveness of using media in blended learning approach show the negative result and also positive result (Barge and Londhe, 2014; Kintu et al., 2017; Nazarenko, 2015). All of these studies occupied Moodle as a learning management system in applying blended learning approach. Meanwhile, the using of media social like Instagram as a learning media in blended learning is recognized to be very rare (Abdillah, 2017; Pittman and Reich, 2016; Salomon, 2013) especially in Indonesian context. Moreover, the effort to utilize social media in teaching and learning process should be reinforced (Zdravkova, 2016). Therefore, this study is trying to find out the effectiveness of using Moodle compare to Instagram where both used as media in implementing blended learning approach.

The focus of this study is on examining the effectiveness of blended learning by using two different online applications (Moodle and Instagram) in two different subjects (Math and English) in Indonesian context. The study subjects were 40 students of Mathematic Education in one of State University in Indonesia who were took Mathematical Representation subject and English-speaking subject.

2   LITERATURE REVIEW

Dziuban, Hartman and Moskal (in Tang, 2013) stated that "Blended learning should be viewed as a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active

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learning possibilities of the online environment, rather than a ratio of delivery modalities". In addition, Kekang He (in Bath and Bourke, 2011) thought that the blended learning is a combination of the benefit of traditional and e-learning way, which makes the instructors play the role of instruction, enlightenment and monitoring and fully embody students' initiatives, enthusiasm and creativity as the main stream of the learning process. His idea emphasized the instructors and student's roles in teaching and learning course. Li (2007) defines blended learning as "optimization selection and combination of all the teaching elements which aim to achieve the teaching aims." Li thought it is supposed to ask the instructors and students to imply various teaching methods, modes, strategies, media and technologies skillfully to teaching and learning course.

The blended learning is an improved combination which tries to combine the positive aspects of conventional and e-learning. Students can have two benefits of those learning that are real experience of interaction the abundant resources, which can give them more flexibility and convenience to study.

2.1 Moodle

Moodle is the abbreviations of Modular Object-Oriented Dynamic Learning Environment, a free and open-source e-learning software developed by Marin Dougiamas in 2004 (Tang, 2013). The software is also known as a Course Management System (CMS), a Learning Management System (LMS), or a Virtual Learning Environment (VLE). It is based on the social constructivism concepts that aim to provide both educators and students a platform for online interaction and collaboration. Moodle, developed specifically for teaching, can provide a variety of different teaching activities for students, allow students to take full advantage of modern network technology to exchange ideas and obtain learning experience and build personal knowledge system. With Moodle, kinds of teaching activities can be integrated effectively, and students can take advantage of functions of Moodle to implement collaborative learning, which can fill the conventionally closed learning environment into an open interactive network learning, spoon-fed learning into independent and personalized inquiry-based learning.

The functions of Moodle include the combination of a various assignments with kinds of activities, the access to teaching material sources

such as presentations, documents, and files and also kinds of assessment for students' work (Dziuban, Hartman, and Moskal, 2004).

2.2 Instagram

Instagram is one of mobile application that provides users to instantly turn their mobile captures into visually appearance images, that can be shared online with others (McGough and Salomon, 2014). Like other social media (Tumblr, Flickr, Twitter, Facebook, etc) the captured images can be shared on line. Instagram launched in October 2010, was purchased by Facebook in April 2012, and currently has approximately 130 million monthly active users. On June 20, 2013, Instagram added the capability to post short videos, a response to the growing popularity of Vine, a six-second video app owned by Twitter (Salomon, 2013).

Instagram is promoted the mobile experience which combine the sophisticated smartphone cameras and its popularity. Although it now provides a Web site where users can view posts, images still can't be posted from a Web interface without a workaround

3 METHODOLOGY

This research applies a quantitative design where descriptive statistics are used for the student achievements, t-tests for blended learning (Moodle and Instagram) variables to determine if they are significant in blended learning effectiveness and for predictors of blended learning effectiveness.

This study is based on an experiment in which learners participated during their study using an on-line session of a blended learning design. A learning management system (Moodle) and social media (Instagram) was used and blended learning design features were measured in relation to learning effectiveness.

3.1 Teaching and Learning Process with Moodle

The learning activities were conducted from the first to fifth meeting. The first meeting of pretest which was given in the classroom. at the 1st meeting the teacher informed that the learning will be done by using Moodle. At the second meeting, the teacher gives instruction to the students on Moodle about the subject matter of the cube and beam elements that are ready to be learned and the students' worksheet

in the Moodle, all students are seen opening the material that the teacher has given in the Moodle and the students send the answer from the question which the teacher gives in the Moodle in multiple choices question. Then it is continued to the face-to-face learning in the classroom discussing the material that has been published by the teacher in Moodle that has not been understood.

At the third meeting, the teacher instructs the students in the Moodle to provide course material on the surface area of the cube and the beam and also the questions. Then students learn and send student answers on the Moodle. Then continue to the face-to-face learning in the classroom discussing material that has not been understood in Moodle. At the fourth meeting, the teacher instructed students via Moodle to study the material of the cube and volumes. In this activity, the students can open the material that the teacher has published in Moodle. Then continue to the face-to-face classroom discussing the material that has not been understood in Moodle. At the fifth meeting, the posttest is conducted in face to face learning in the classroom.

3.2 Teaching and Learning Process with Instagram

In teaching and learning process by using Instagram the topic taken is one minute speech. In the first meeting in classroom, the teacher takes the pretest by only giving the rubric and explain directly in the class then give the students time for about an hour to make a one minute speech. Then, tells the student that the material will be continued on Instagram application in the certain time that has been agreed.

In the second meeting, the material is delivered through instagram live. After the teacher has finished the material then giving the instruction to make the same one minute speech video within an hour and upload the video through Instagram and tag the teacher to notify that they have made their assignment. The rubric is also uploaded through Instagram application.

4 FINDING AND DISCUSSION

After the implementation of pretest, treatment, and posttest, then the normality test was conducted. The result showed that both data were normal and it was possible to continue the sample paired test by using T-test. The T-test was applied to determine whether or not there is an improvement after giving treatment to the class using learning via Moodle and Instagram.

The first test was conducted on the Mathematical representation class where Moodle occupied as a media. The results of paired sample test as follows:

Table 1: Sample Paired Test Result Moodle Class.

Mean	Std. Deviation	St. Error Mean	T	Sig. (2-tailed)
41.613	13.812	2.481	16.77	0.000

In Table 1, the Sig value is less than 0.05, which has a sig value. 0.000 then it is interpreted that there is a difference of increase between learning before and after treatment. With the mean result of 41,613, the difference is obvious.

The second test on the class that using Instagram, the results of paired sample test as follows:

Table 2: Paired Test Sample Instagram Class.

Mean	Std. Deviation	St. Error Mean	T	Sig. (2-tailed)
3.875	4.090	0.647	5.992	0.000

In Table 2, the sig value is less than 0.05, which has a sig value. 0.000 then it is interpreted there is a difference of increase between learning before and after treatment. With the mean result of 3.875, the difference is obvious.

From the results, it is found some discussion include the difference in the improvement of students' mathematical representation using Moodle and English speaking improvement using Instagram.

From the result of t value of paired samples of the two classes, it is found that both classes (Moodle and instagram) obtained sig value. <0.05 ie with sig value 0.000. It means that there is a difference in the improvement of students' representation ability in both classes. It supports the previous studies (Baldwin-Evans, 2006; Kintu et al., 2017; Nazarenko, 2015; Okaz, 2015; Smith and Caruso, 2010) that also proved that blended learning can

improve students' ability in this case the students' mathematical and English representation.

The using of Instagram also has proven that social media can be used to support teaching and learning activity and also to improve student's ability in this case students' ability in speaking. In line with this result, Abdillah (2017) stated that social media can be utilized as blended learning tools that can improve students skill especially in language skill. Research suggests that student involvement leads to higher levels of learning and contributes to outcomes that include persistence, satisfaction, and academic achievement (Astin, 1999).

5 CONCLUSIONS

The improvement of modern technologies makes it feasible to perform blended learning, which relates to the diversification of teaching resources. Online environment is suitable for university students to support their self-learning process. Even though, face-to-face instructions is still become the good choice. The use of social media and online media in blended learning can become the combination of online learning and offline learning where it still has the significant result to improve students' skill, self-controlling and motivation. Inevitably, there are some difficulties still remain when blended learning is implied. It needs more learners' commitment, more teachers' devotion and knowledge more integration between traditional courses and modern technologies.

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