The Innovation of Blended Learning in Flipped Classroom Type to Increase Students' Learning Independence

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Abstract-*This study aims to develop blended learning in flipped classroom format on HyLearn web of Faculty of Education Science, Universitas Negeri Jakarta to encourage optimization students' in using that web. Faculty of Education Science is one of the faculties that providing e-Learning services. In this research, authors used the ADDIE Model. Based on the monitoring of the log data activity of 89 students' in HyLearn web on http://fip.unj.ac.id/hylearn , Based on the results of the discussion on blended learning and learning independence of the students of the Faculty of Education, Universitas Negeri Jakarta, the percentage of learning independence results from 6 indicators, namely: 1) dependence on others by 78.2% categorized as very positive, 2) having self-confidence of 75, 4% categorized as positive, 3) discipline behavior 74.3% categorized as positive, 4) having a sense of responsibility 77.6% categorized as very positive, 5) having based on their own initiative 74.8% categorized as positive, and 6) doing self-control of 76.4% is categorized as very positive. While the results of the discussion on the impact of the implementation of blended learning on learning independence were obtained as a result of a percentage of 77.6% categorized as very positive. So that it can be concluded that the tendency of student learning independence, namely students proved to have a positive learning momentum.*

Keywords: Blended Learning, Flipped Classroom, e-Learning, hylearn

I.   Introduction

Technology can facilitate students and lecturers in the learning process. The development of this technology is used by lecturers and students in certain fields of learning as well as influencing learning outcomes and lecturer performance. One of the technologies used in the learning process is e-Learning with the blended learning format which is distance learning that occurs between lecturers and students so they didn't occur face to face directly. Distance learning required students to learn independently and be responsible for their duties. The use of e-Learning for learning media has a function to complement and improve the quality of learning and also to help improve student understanding (Hanum, 2013). Without eliminating learning process interface, the use of e-Learning complements the weakness of learning method with availability of media that can be used by students to explore limited lecture material carried out by the campus such as questions and answers, quiz exercises, etc. which can be accessed at anytime and anywhere as long as it's connected to the internet. In addition, a multimedia-based e-Learning system in which there is an attractive graphic display will make students more interested in following the learning process (Listyorini & Widodo, 2013).

E-Learning began to be introduced in the 1970s and developed rapidly in the 1990s (Darmawan, 2014). The use of e-Learning has many advantages, especially its use in the field of education. According to (Valentina, 2015) the benefits of gained are: the first is flexible, increasing the success and qualification of knowledge through the ease of obtaining large amounts of information and providing opportunities for each student to build relationships with the other through discussion forums. The second is a student can saving money, they didn't need to pay for travel and able to provide learning without consuming much space and giving students flexibility in choosing the part they want to learn. The third is providing convenience when a lack of human resources such as administrative staff, lecturers, facilitators, or lab technicians, and provide convenience to students in learning according to their abilities. The Faculty of Education, Universitas Negeri Jakarta has e-Learning. We called it HyLearn FIP in the blended learning format. Hylearn is a hybrid learning portal owned by the Faculty of Education of Universitas Negeri Jakarta with a website link www.fip.unj.ac.id/hylearn. Hylearn is used by all study programs in the Faculty of Education as an online learning platform intended for all active students.

Picture 1. *Image of display of Hylearn FIP*
Source: http://fip.unj.ac.id/hylearn/

The Hylearn portal is designed using the open-source LMS (Learning Management System) platform that is Totara. In line with its development, the Totara platform used experienced rapid development and improved display that was user-friendly and easy to be used by students. Totara is one of the e-Learning platforms used to manage the online course. Totara is an open-source type of LMS (Learning Management System) platform. Totara is known as an open-source Moodle distribution developed for the corporate and government markets. As an open-source LMS at the leading company level, Totara has capabilities in the areas of performance management, team management, competency tracking and reporting that are useful to assist in achieving learning goals. Totara of LMS makes it possible to provide online learning, training and performance management easily, in a flexible manner and at a relatively small cost. In addition, Totara is quick and easy to use by having a variety of complete features starting from delivering and managing the learning to develop workforce competencies and producing clear reports on the disciplinary status of each user in accessing Totara.

Based on Littlejohn and Pegler (2017) Blended learning is a term that refers to learning that uses more than one type of learning strategy. In the other side, according to Devrim Akgunduz & Orhan Akinoglu (2016) blended learning increases the independence of student learning skills. It is believed that significant differences made by blended learning in terms of learning independence grow from a better plan and use of the internet in a comprehensive and effective manner. The equation of face-to-face learning activities and web-based learning activities can provide changes to student learning skills in the blended learning group. Therefore, Bergmann in Sams in Fradila et.al (2015) explained that flipped classroom is learning that is usually done in class by students at home, and questions used as homework, discussed and done in class. Johnson stated that flipped classroom is a way that can be given by lecturers by minimizing the amount of direct learning by maximizing student interaction with one another (Fradila et al, 2015). Flipped Classroom according to Bergmann and Sams (2012) is a setting where that which is traditionally done at home, and that which is traditionally done as homework is now completed in class. In other words, Flipped Classroom is a reversal of conventional learning procedures, where what is usually done in class is done at home and usually done at home as homework or homework done in the classroom. That's why this strategy is called reverse class learning

Independence is a character that must be developed by students (Yenni Suzana, 2011); (Manulu, 2014) especially independence in learning or known as self-regulated learning which is able to make students proactive in managing their learning activities (Pedrosa, Cravino, Morgado, & Barreira, 2016); (Nicol & Macfarlane - Dick, 2006). Self-regulated learning in students is reflected in the control of themselves in addressing the problems that occur in the learning process takes place. In other words, students learn as controlling their own learning activities. Students monitor and motivate themselves during the learning process. In addition, students are expected to be able to evaluate and monitor their learning outcomes in accordance with the expected targets in

the learning process (Michalsky & Schechter, 2013); (Siadaty et al., 2012). During the learning process, students are expected to be able and actively seek out relevant learning resources by utilizing information technology. This is in accordance with the effort to empower students in learning. Sufficient information technology facilities and infrastructure enable students to access various kinds of learning resources easily. However, the number of learning resources is not necessarily comparable to student learning outcomes.

II. METHOD

This research is development research using the ADDIE development model. The ADDIE development model used based on the formulation contained in the FAO book is titled E-Learning methodologies: A guide for designing and developing e-learning courses (2011). The ADDIE model in this study consists of five major stages, there are: (1) Analysis: conduct a needs analysis and analysis of the characteristics of students, (2) design: plan and design the supporting components of the product Online Course, (3) development: learning object, (4) implementation: test the product to the review experts (media experts, material experts and learning design experts) and users through the one to one evaluation phase and evaluation of small groups, (5) evaluation: evaluating the results of product development based on the results of trials.

This research was conducted at the Faculty of Education, Universitas Negeri Jakarta. Product testing in the field is carried out through limited testing to students of the Faculty of Education, Universitas Negeri Jakarta who take courses in Learning Theory. The formative evaluation included the test of material experts who assessed the correctness of the content of the material, the test of learning design experts, the media expert test, one to one test consisting of 5 people and a small group test consisting of 10 students. As well as to see the independence of learning carried out on 96 students. Data obtained from each of the trial activities are used to revise in order to perfect the product development.

Data collected through the implementation of evaluations are grouped into four parts, such as 1) first stage evaluation data in the form of data from reviews of material experts, learning design experts, media experts. 2) the second evaluation data in the form of one to one trial data and small group trials. 3) data on student summative test results. 4) And data collection in this study is a questionnaire of 39 items using the Likert scale as an alternative choice. The instruments used to collect data in this development research are questionnaires and standardized test kits. Questionnaires are used to collect data from expert review and respondent trials. The results of the data obtained will be analyzed using quantitative descriptive analysis in the form of a percentage. The sequence of steps taken is to calculate the acquisition score for each indicator. After that, calculate the percentage of answers from each indicator. After the results of the percentage of each indicator are obtained, the researcher draws conclusions on the results of the study. The researcher used the guideline from Sugiyono (2011), the higher the percentage of respondents, the better the perception of the respondents.

III. RESULTS AND DISCUSSION

Results

This section will explain the results of the development research procedure with the ADDIE development model viewed from 5 stages, namely analysis, design, development, implementation, and evaluation. As well as quantitative descriptive results to see the students' learning independence. The analysis phase involves lecturers and students as well as the implementation and evaluation stages involving experts and students as users.

A. Analysis

At this stage, the developer carries out several activities including:

1. Need Analysis

At this stage, the developer collects information through interviews with Learning Theory lecturers. based on the results of information gathering that has been carried out by the developer through interviews with previous lecturers of Learning Theory courses, facts about the learning process in Learning Theory courses are found: 1) The first fact is, Learning Theory courses are delivered through face-to-face learning in class with a duration of 120 minutes each meeting. The duration of time is sometimes not enough for lecturers to convey the topic of learning material that required material deepening. 2) The strategy used by lecturers in Learning Theory is using collaborative learning. Collaborative learning in groups by dividing the class into groups. Learning Theory courses learning focused on student-centered where students process and deliver material in groups by presenting each subject in class. In addition, the group division is also used by students in participating in project-based learning in the Learning Theory course by observing schools or other educational institutions to find and solve problems. 3) The next fact is related to learning resources and learning media that are utilized in

Learning Theory courses. Learning reference sources provided in Learning Theory courses are in the form of textbooks in printed form belonging to the lecturers and used in turn to each group that will advance the presentation. In delivering the material, lecturers use learning media in the form of presentation slides on the use of learning media. In addition, lecturers also use learning resources by utilization, namely schools and other learning environments by assigning students to make observations to the school to examine problems in the use of existing learning media in schools. By learning resources and learning media, lecturers feel that the available learning media is less varied. 4) Learning Theory courses that have a weight of 4 credits have several topics in the form of theories and concepts that are felt by the lecturer are still not enough to be taught in the classroom. The lecturer also gave assignment tests to students to find out the level of mastery of students in learning material in class.

2. Characteristics analysis of students

The next stage of the needs analysis phase is analyzing the characteristics of students. At this stage, the developer collected information through a questionnaire on 41 students who have attended the Learning Theory course in the previous semester. The questionnaire that was distributed contained questions that were used to obtain information in the form of learning styles and experiences of students using the online learning system, so the following information was obtained: 1) Both students who have attended Learning Theory courses, as well as those who are studying it , on average students, access online learning through cellphones and computers. The use of computers is believed by authors that the opportunity to experience obstacles is very small to access online learning in the Learning Theory course, but in contrast to the use of mobile devices such as using a smartphone there will be several obstacles such as the appearance of computers and smartphones didn't same, some of the features difficult to be accessed, the screen display didn't full of screen for some types of smartphones, and some of the developed media cannot be displayed. Therefore, developers recommend accessing it through personal computers or laptops. 2) Both students who have followed the Learning Theory course have an average tendency towards visual learning styles. Because of the tendency of these learning styles, developers develop as much as possible online courses with a variety of learning media with visual displays that attract and motivate students in learning and make it easier for students to understand the contents of the material presented. 3) Based on the results of information gathering on students' online learning experiences, it can be concluded that students are accustomed to accessing the internet and using online learning. By allowing students to use the internet, students tend to look for other learning materials or references on the internet but find it difficult to find accurate and reliable material.

3. Analysis of the learning environment

After conducting a series of previous analysis activities, the developer analysis the learning environment. The developer observes the Faculty of Education, Universitas Negeri Jakarta. The result was found, the infrastructure supporting the implementation of online learning has been provided such as internet facilities, online learning portals (websites) have been provided, LMS (Learning Management System) based on the full platform for online course developers, and other components to support online learning have been provided.

4. Design

At this stage, developers were develop learning designs in the development of online courses for Learning Theory courses, while the products produced in this stage are: (1) design of learning objectives, (2) design of learning strategies, (3) delivery strategies, (4) determine evaluation strategies. At this design stage, it is complete with making chunking in the form of content mapping to solve the material content becomes smaller and determine the form of media to be delivered and make the course script and web script to compile content into courses site.

5. Development

At the development stage, the learning components that have been designed at the previous design stage are then developed so that they can be used by students and then can be tested at the next implementation stage. To develop content from the online course material, it is done by developing storyboards first to design an outline of media content (attached in the attachment). The material content used is broadly in the form of presentation media slides, with the addition of several animated videos, infographics and YouTube videos to help students easily explore the material presented. After all, media has been developed, developers manage the media according to the learning path that has been designed in the previous design phase by uploading to the online learning portal owned by the Faculty of Education, namely https://fip.unj.ac.id/hylearn.

6. Implementation

This stage is the stage of testing products that have been developed previously. Before this product is tested implemented for students, it will be implemented to experts (learning design experts, material experts, and media experts) first. Trials conducted on students through one-to-one evaluation (individuals) and to small group evaluations (small groups), where one-to-one evaluation is done by using respondents as many as 5 people and small group evaluations were tested as many as 10 respondents. The flow of the two trials is that students are asked to access an online course that has been developed in the portal provided by the Faculty of Education, namely https://fip.unj.ac.id/hylearn, After learning the material by accessing the portal, students work summative test questions to evaluate their learning outcomes. after that, students are asked to fill out a questionnaire form and provide suggestions in the fields provided thereafter. The results of the data from the implementation/trial of this product will be concluded at a later stage and the data will be attached to the appendix page from expert review to small group evaluation.

7. Evaluation

The online course development product was evaluated by a media expert, a learning expert, a material expert, 5 students at the one to one trial stage, and 10 students in the small group trial. The assessment uses a 1-4 scale. From the results of expert trials, media experts obtained an average yield of 3.31 which entered into the category of "very good", learning experts obtained an average value of 3.20 with the category "good", and the results of reviews of material experts obtained results 3.40 with the category "very good". Whereas the results of the one to one trial evaluation obtained an average yield of 3.31 with the category "very good" and the evaluation of the small group obtained a result of 3.43 which means very good. At the end of the trial, respondents conducted a summative test to find out their learning outcomes. From the summative test results, the average mastery of the material was 94.85%.

IV. DISCUSSION

Based on the results of data analysis on the scale of learning independence shows that the tendency of learning independence in students who applied flipped classroom by blended learning included in the very positive to very negative category, this can be seen from the results of the analysis of each indicator of learning independence variables showing that almost all respondents had an intensity of independent learning with a total percentage score of 72.5% with a positive category. With the details of each indicator, namely as follows: the percentage of the independence of learning from the Faculty of Education of Universitas Negeri Jakarta on indicators of dependence on others is 78.19%. It can be concluded that in general the independence of learning from the students of the Faculty of Education of Universitas Negeri Jakarta in indicators of dependence on others is categorized as very positive. The results show that the majority of students who took part in blended learning had a very positive dependence on others. The condition of an independent learning activity that is not dependent on others and has the will and responsibility of themselves in completing their learning. According to Brookfield (in Kurniawati 2010) learning independence is self-driven and self-awareness. That is also be called the ability to learn from within by their self to achieve its goals. The percentage of learning independence of the students of the Faculty of Education of Universitas Negeri Jakarta on indicators has the self-confidence of 75.4%. It can be concluded that in general the learning independence of the students of the Faculty of Education of Universitas Negeri Jakarta in the indicators has self-confidence categorized as positive.

The results of the study show that most students who take part in blended learning have positive self-confidence. Students who have positive self-confidence shows they have the ability and strength that will be able to achieve their goal. According to the Judge (in Kurniawati 2010) revealed that self-confidence can also be interpreted as a person's belief in all aspects of the advantages possessed by that person and that belief made him feel able to achieve various goals in his life. The percentage of students' learning independence at the Faculty of Education of Universitas Negeri Jakarta on indicators behave disciplined is 74.3%. It can be concluded that in general, student learning independence in indicators of disciplined behavior is categorized as positive. The results of the study show that most students who take part in learning with blended learning have positive discipline behavior. According to Kurniawati (2010) discipline is something that is concerned with one's self-control to follow various kinds of rules for self-awareness. Just as a discipline in learning is also included in the willingness to learn that is driven from within the individual. The results of the analysis, the percentage of independent learning of students of the Faculty of Education, Universitas Negeri Jakarta on indicators have a sense of responsibility that is equal to 77.6%. It can be concluded that in general students' learning independence in the indicator has a sense of responsibility that is categorized as very positive. The results show that the majority of

students who took part in learning with blended learning had a very positive sense of responsibility. One of the students said to be responsible when they have a high commitment to the task and work. According to Zimmer (in Kurniawati 2010) the characteristics of people who have responsibilities are: 1) have high commitment, 2) want to be responsible, 3) energetic, 4) future-oriented, 5) ability to lead, 6) willing to learn from failure, 7) self-confidence and 8) obsession to achieve better performance.

The percentage of independent learning of students of the Faculty of Education, Universitas Negeri Jakarta on indicators behaves based on their own initiative that is equal to 74.8%. It can be concluded that in general, student learning independence in indicators of behavior based on their own initiative is categorized as positive. The results of the study show that the majority of students who participated in blended learning learned behaved based on their own positive initiatives. Someone who has an initiative can be said that the person has the ability to give birth to something new both in the form of ideas and works that are relatively different from what was before to solve a problem. The percentage of students' learning independence at the Faculty of Education of Universitas Negeri Jakarta on indicators of self-control is 76.4%. It can be concluded that in general students' learning independence in indicators of self-control is categorized as very positive. The results showed that the majority of students who took part in the learning environment with blended learning carried out very positive self-control. Independence of learning can be realized if students can control themselves over everything they do, evaluate and also plan something in the learning process. According to Anggraeni (2014) students who have positive self-control are able to manage information, be able to control emotions, and are able to control emotional behavior. The results of data analysis from table 3, the percentage of the impact of blended learning on student learning independence is equal to 77.6%. It can be concluded that in general the impact of blended learning on student learning independence is categorized as very positive. The results show that the majority of students who took part in the learning environment with blended learning claimed to be facilitated in the learning process. By blended learning, it can be ensured that students are actively involved and direct their individual learning experiences. Blended learning also helped meet the needs of students, because most students have unique learning styles and blended learning is more likely to meet these needs than learning in traditional classes. According to Setyosari (2014), the quality of learning is generally in the form of quality results relating to the experience of learning and learning.

V. CONCLUSION

Based on the results of the discussion on blended learning and learning independence of the students of the Faculty of Education, Universitas Negeri Jakarta, the percentage of learning independence results from 6 indicators, namely: 1) dependence on others by 78.2% categorized as very positive, 2) having self-confidence of 75, 4% categorized as positive, 3) discipline behavior 74.3% categorized as positive, 4) having a sense of responsibility 77.6% categorized as very positive, 5) behaving based on their own initiative 74.8% categorized as positive, and 6) doing self-control of 76.4% is categorized as very positive. While the results of the discussion on the impact of the implementation of blended learning on learning independence were obtained as a result of a percentage of 77.6% categorized as very positive. So that it can be concluded that the tendency of student learning independence, namely students proved to have a positive learning momentum. Students are not dependent on others, they tend to be more independent in everything. On the other hand, blended learning has proven to be very supportive in learning as well as the impact of blended learning on student learning independence which tends to be very positive.

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