The Importance of Hybrid Teaching and Learning Model to Improve Activities and Achievements

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Abstract: The aim to this study is to develop, describe and to know the effectiveness of prototype an online basis learning. The developing method which was conducted referred to what have been conducted by Thiagarajan about developing learning design of Define, Design, Develop, and Disseminate Four-D. The developed product was validated by the specialists of developing learning media. Developed prototype in this study also receives advices and suggestions from the users of the product (the students). The sample consisted of 30 undergraduate students 4 semester of the academic year of 2014. The result of this study shows that online basis learning prototype is really needed by students to improve their mastering lecture material. Students think it is time to develop a lecture prototype with the assistance of technology development along with the advance of knowledge and technology. Besides, lecturers also need lecture prototype to manage a better lecture. It shows that the developed learning prototype is appropriate and can be made to the online basis learning prototype. Limited trials of prototypes have shown that students are more enthusiastic and improved learning achievement significantly. This learning experience is very important considering they will later become a teacher of physics.   .

1   INTRODUCTION

Hybrid online learning is one of blended learning implementation. In this prototype, lectures still give the usual interface lectures and add an activity using internet assistance to complete the interface lectures. In hybrid online learning it develops a site to manage the learning activity as in E-Learning (Huda et al., 2018). However, hybrid online learning only uses e-learning to support interface activity. Assessment, outside lecture interaction, and sharing lecture materials are some examples of hybrid online activity.

Students involved in study show the advantages of implementing hybrid online compared to the interface lecture, although they have not experienced in this lecture prototype before (O'Byrne and Pytash, 2015). Nevertheless another study conducted by Senn (2008) found that the implementation of hybrid online is not suggested to subjects which are full of hand on activities. Curriculum Study of Physics Education is not the subject full of hand on activities so it fits to hybrid online learning.

The problems which frequently occur in teaching and learning 1) lectures have many students, that

they have limited time to give tests, to immediately check, to analyze the results, to give feedbacks, and to conduct remedial tests as soon as possible; 2) lectures also find difficulties in managing large amount of data assessment and they need long time to record and analyze; 3) this situation causes unorganized record of written data assessment about formative assessment activity; 4) there is limited time to interact between lectures and students; 5)there is unavailable computer to share the source of learning to improve the students' knowledge. These problems cause difficulties for students to understand the lecture (Chen and Chiou, 2012).

Along with the advance of knowledge and technology, to minimize the impact of the problems that lectures find, thus the researchers developed a learning innovation using a product of the advance of knowledge and technology; it is the developed online basis learning prototype. Online basis learning prototype which is usually known as Hybrid Online is a term for lecture prototype which integrates interface learning with advantages in E-Learning which uses the internet as the media (Allen et al., 2011). In Hybrid Online Learning it uses the advantages in E-Learning to cover the weaknesses

which occur in traditional interface learning. Hybrid online Learning can be used to give assignments, to conduct tests, to make informal assessment, to manage lecture journal, and to add media to support lecture.

The implementation of Online basis learning gives many advantages either to lectures or to students. Hybrid Online learning also is potential to support Curriculum Study of Physics Education lecture. The implementation of this prototype can be used to get an effective and innovative lecture for students. Meanwhile, active interaction among students is believed by many educational circles to be one of decisive factor towards students' learning success (Jonassen, 1999). The interaction which is the reciprocal interaction either among students or between students and lectures can be one of indicators towards students' learning success phenomenon.

Considering Physics Education Major of Universitas Kanjuruhan does not use Online basis learning prototype in its lecture, thus the researchers were encouraged to conduct a developing study with a title "Developing Online Basis Learning to Support the Lecture of Curriculum Study of Physics Education".

2 METHOD

The study was conducted by involving lecturers of Curriculum Study of Physics Education, lecturers of Learning Media, and some students of Physics Education. The implementation of this developed hybrid online lecture prototype is the research and development which refer to Thiagarajan's Four-D lecture design prototype (Thiagarajan, 1974). The scope of activity and product of each development phase in Four-D approach is described as follow.

Define phase. The researchers began by identifying today's and following conditions. The analysis was implemented to curriculum of lectures and users' analysis. The researchers gained specifications of aims, identifications of needs, indicators of success, expected resulted products, and strategies in product testing in this phase.

Design Phase. In this phase, the researchers developed the interactive multimedia design. One of the results in this phase is designing lecture site by using related moodle and content. Develop Phase. The design which was developed by the researchers became product which received advice from media specialist and learning specialists.

Disseminate Phase. The next phase is to implement interactive multimedia which was developed to students of Curriculum Study of Physics Education. Desired condition in the future. Analysis the researchers do on curriculum lectures and user analysis. In this phase, the destination specification is obtained the identification of needs, indicators of success, the final product is desired, testing strategies and products.

3 RESULTS AND DISCUSSION

This is the first phase of the study. In this phase the researchers conducted the first study which covered the study towards Curriculum Study of Physics Education and the data collecting during lectures. The study towards Curriculum Study of Physics Education shows that this subject is compulsory for students of Physics Education Major of Universitas Kanjuruhan.

The subject intends to develop the students' knowledge and skills as the future physics teachers to design, to implement, and to develop the curriculum of intermediate Physics Education. The investigations towards learning systems in Physics Education Major of Universitas Kanjuruhan include various problems faced by lectures and students in learning process. Data collecting was conducted using questionnaire. Main data source was students who took Curriculum Study of Physics Education. Based on this method, the researchers found the learning condition and the possibility to implement hybrid online prototype. The results of the questionnaire were as follow:

For the questions related to the necessity for lecturers to show learning sources on the internet. As much as 65,2% of respondents stated agree (S) with lecturers showing learning sources on the internet related to lecture material, as much as 28,98% stated very agree (SS), and the rest 5,8% stated disagree (TS). The detail can be seen in Figure 1 below.
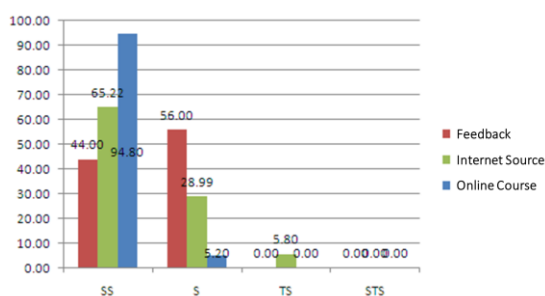
Figure 1: Description of students' responds towards the result of the questionnaire.

Based on the description in the diagram on Figure 1 above, respondents have various reasons. The reasons of the respondents who agree (Agree – S and Very Agree – SS) towards the necessity to show the learning source on the internet are 1) students feel helped by receiving additional material from the internet when they study at home; 2) easily accessing the internet accelerates and facilitates students to get the newest learning material which is appropriate to the advance of knowledge and technology; 3) it gives indirect training to students to find lecture information; 4) it helps students to find the newest lecture references; 5) it creates students to be active, creative, innovative, and positive in thinking; 6) it increases the students' concepts by having many lecture references; 7)students have valid literatures or lecture references which focus on the theme of the material; 8) students have various literatures which will increase their concepts and knowledge; 9) students feel confidence in finding information about lecture material; and 10) students will get more qualified, more interesting, and more pleasant lecture. Meanwhile, respondents who disagree (Disagree – TS and Very Disagree – STS) also have some reasons; they are 1) students feel difficult to access the internet; 2) students think the facility provided by the university is not enough to access the internet.

Receiving feedbacks from lecturers. Students have various opinions towards the necessity of feedbacks when lectures give worksheets, assignments, and tests. As much as 56% students who became the respondents stated Agree (S) to receive feedbacks from lecturers and the rest 44% stated Very Agree (SS). The detail is presented in Figure 1 above.

The reasons of respondents who agree (Agree – S and Very Agree – SS) towards receiving feedbacks from lecturers are 1) students use feedbacks as evaluation to find out their weaknesses and their qualities; 2) students use them to correct the next worksheets or assignments; 3) students will find out the results of their learning; 4) students use them as motivation to learn so there will be no misconception; and 5) students use them to measure their ability in following the lecture.

Some other findings show that students need longer time to interact with lecturers outside the lecture. As much as 94,8% respondents agree towards the implementation of online basis learning prototype in lectures. As much as 5,2% respondents disagree. The detail can be seen in Figure 1.

In this phase the researchers also conducted a study towards online basis learning prototype which had been conducted by some previous researchers. The study on the first phase shows that 1) the developed prototype had not conducted the assessment towards the learning; 2) most developed prototypes used references on the internet to motivate students to prepare themselves; 3) lecturers gave first question related to the material which would be discussed; 4) internet assisted lecture material was intended to enrich the lecture material; and 5) quizzes were very rarely used in online lecture prototype.

The findings gained in define phase were used by the researchers to develop multimedia design of online interactive basis learning. Based on those various findings, the researchers determined the design of online basis lecture prototype which is able to assist students to learn and to enrich the lecture material. The result of this phase among them is to design learning site using related moodle and content (Costa, Alvelos, and Teixeira, 2012).

The result of questionnaire shows that students want media or form of video learning because it is the most attractive supporting material. Besides the video learning, various literatures are also developed to be used by students to enrich their knowledge about lecture material. These supporting materials can be obtained and accessed from the internet and some can be downloaded by students.

The materials include video learning, lecture PowerPoint slides, readings, and other materials. Lecture slides which are downloaded by students are expected to assist them if they want to relearn the lecturer's explanation. Written materials are to enrich students' readings towards the material being discussed. Other material such as video is easily found on the internet, it is lecture material but it comes in different form.

The following development is discussion Forum on learning page. Forum is tool in moodle which can be used to discuss between students and lecturers, or among students. In this developed learning

prototype, the lecturers begin the forum in moodle by asking any problems related to the lecture. Next, students can conduct a discussion and give their ideas which can be responded by others. Lecturers will comment in the discussion conducted by students.

The assignment module is also given space in learning page. It is because this form is one of modus in moodle which is used by lecturers to give either individual or group assignment. Lecturers can give the due date to submit the assignments using assignment module. Students can also know the lecturer's assignments which are given by the lecturers. If students do not pay attention to their assignments, so automatically they cannot send their assignments. The form of quiz will also be given in lecture developing to find out students' understanding the lecture material.

Develop phase is the phase of developing online basis learning prototype. In this phase, the development was conducted based on advices gained from various sides of students, lectures, or academics. This phase began by developing site which is accessible by students. Lecturers registered as the admin in the site manager.

Students are given definition form about using the online basis learning. To start the lecture, the site is divided into weekly unit. Every week lecturers give lecture material using learning video, PowerPoint slides, readings; and students can access the material by choosing the provided ones. Next, lecturers expect the materials can increase the students' concepts about lecture material.

Students just enter the lecture they take to start the lecture; it is Curriculum Study of Physics Education. When students access the lecture. Students have to be registered to become users by admin so they can join the lecture. Online basis learning prototype which has been developed then presented to several media specialists who consist of lecturers of supporting subjects in Physics Education Major. They consist of three people. To conduct the study, the assessment is given in score range. If the response is good, it will get score of 4 and if the response is not good, it will get score of 1. The assessment gained from the specialists team is average to all aspects; it is 3,57. From this average it can be concluded that the developed online basis learning prototype is appropriate to implement.

The developed online basis learning prototype was also tested to students who were taking Curriculum Study of Physics Education. From the questionnaire spread, it gets average score to all aspects; it is 3,22. It can be concluded that the developed online basis learning prototype is appropriate to implement. Students also think that online basis learning prototype gives significant advantages for lecturers and students in implementing Curriculum Study of Physics Education. The advantages gained in implementing online basis learning are 1) lecturers manage the lectures easier so the lectures become practical and organized; 2) it increases the students' knowledge and concepts which are various on the internet; 3) students can discuss with lecturers or with other students outside the lectures; 4) quizzes can be managed by site so lecturers can save time and use it to check the results and give feedbacks to students.

Despite of its advantages, online basis learning prototype also has weaknesses as follow. 1) The site still joins and registers to website. It causes difficulty for students to register, to enter, and to access the learning. Besides, lecturers also find difficulty in accessing the site to manage the display 2) There are many advertisements enter the learning page. 3) Lecturers need to make time to develop the lecture material which is placed onto online basis learning. 4) Lecturers need to see the forum development and participate in the students' discussion. It also takes quite some time. 5) Lecturers need to quickly check the assignments and quickly upload the feedbacks.

After the prototype is declared worthy of the next prototype, applied to students. Obtained results there was an improve in the activities and achievements of the students. This is evidenced by the average value of a student learning using a hybrid learning higher than students studying without using a hybrid learning.

4 CONCLUSIONS

The developed online basis learning prototype has significant advantages to implement in Curriculum Study of Physics Education. The developed prototype is also stated to be appropriate to use in lectures. The main advantage of the product is the lecture of Curriculum Study of Physics Education can run and carried out more effectively, more efficiently, and more innovatively. Nevertheless, the implementation of online basis learning still has some weaknesses which need to be improved. Therefore, lecturers expected for any advices and suggestions to create the perfect learning. The advices are 1) considering the effectiveness of online basis learning prototype, Physics Education Major is expected to be able to disseminate and to implement it in other subjects; 2) Physics Education Major,

develops the site independently to facilitate the management of online basis learning prototype; 3) students need to be given training related to Moodle using to accelerate the online basis learning prototype.

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