

The Development and Utilization of E-Learning Media Using the Edmodo Applications for Statistic Course

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Abstract-This research has a general purpose to develop e-learning media for statistics class. The specific purpose of this research is the utilization of media e-learning using edmodo applications in statistics class. This research in its entirety using research and development approach is adopted from the model developed by the Dick and Carey combined with model development product developed by Borg and Gall through 10 stages procedure development. For the first stage, namely the identification of the purpose to instruksional analysis using model of Dick and Carey as to the stage of product development to dissemination and implementation of the product which is the final stage of this research uses a model of development of the Borg and Gall. The results of this study are 1) The product of e-learning media is very valid and feasible for use in learning class statistics 2) The Product of e-learning media using edmodo applications can be utilized in statistics class are conducted using blended learning to support the quality of the learning process 3) The Product of e-learning media using edmodo applications can be utilized in statistics class are conducted using blended learning to support the quality of the learning process.

Keywords-Media e-Learning, Research and development, Edmodo

I. INTRODUCTION

Lecturers have an important role in the success and effectiveness of learning. The success of a lecturer in learning is usually indicated by success in providing lessons and providing skills to students. Therefore, so that the delivery of lessons and skills to students can be delivered well, needed something which requires models, media, and evaluation of learning that is appropriate with the abilities that will be given to students. This applies to all programs, including in statistical class.

Researchers and instructors in this class always strive to make improvements in the quality of learning to support the professionalism of the lecturers. One of them is through scientific research activities. The first phase of the research was conducted in 2017 with the title of developing a computer-based interactive module program for basic statistics class with the results of the study that the interactive module program was declared valid and feasible to use with a score of 4.15. Although there has been an increase in the quality of learning, efforts to improve the quality must be continued.

This is one of the topics of the speech of the Minister of Research, Technology and Higher Education in the commemoration ceremony of National Education Day, namely the application of online lectures or e-learning in universities that can be implemented in 2018. This has an impact on learning readiness, and learning media used in e-learning. If e-learning media can be developed, the e-learning learning model planned to be implemented in higher education is at least close to the ease of learning and research results.

Previous research on “e-learning media development” in computational class in university [1][2] produced information about the fact that e-learning media can be developed for in universities and edmodo can be used as an alternative learning. The linkage of the preliminary research with this research is that in this study researchers conducted the development of e-learning media by using edmodo application and utilizing the results of these developments in learning as a response to the policy of implementing e-learning lectures and problem solving solutions in learning to improve the quality of learning.

The “blended learning” model is a type of learning that combines classical teaching (face to face) with online teaching. [3]. This blended learning model is very suitable for basic statistical classes. With the use of this model, learning can not only be done in the classroom during class hours but learning can also be done outside of class hours by using online media. Online media so developed and utilized is online media with the Edmodo application. Based on the explanation above, the researcher was interested to know how is the Development and Utilization Of E-Learning Media Using Edmodo Applications for Statistics Class.

II. LITERATURE REVIEW

In learning technology, descriptions of procedures and steps of development research have been developed. “Research and development” is an industry-based development model in which the finding of research are used to design new products and procedures, which then are systematically field-tested, evaluated, and refined until they meet specified criteria of effectiveness, quality, or similar standart [4][5][6]. Its show that research and development is a research method used to produce certain products, and test the effectiveness of these product. In

this case the product developed is a learning product. In this case, this type of research can also produce a model. Which one, on a research and the development of a model, there are many steps development to produce models or learning products that will later be used in the learning process. There are some development models that can be used as procedures for developing learning media, including:

1. Development of the Borg & Gall model

Research of Borg and Gall models, is a development model with the aim of producing a product in learning. Just the same with Hanafin and Peck development models, is a one of many design learning models that have to be developed to produce a product, usually, products in the form of learning media such as interactive multimedia, audio-visual media and other learning media based on CAI (Computer-Assisted Instructional).

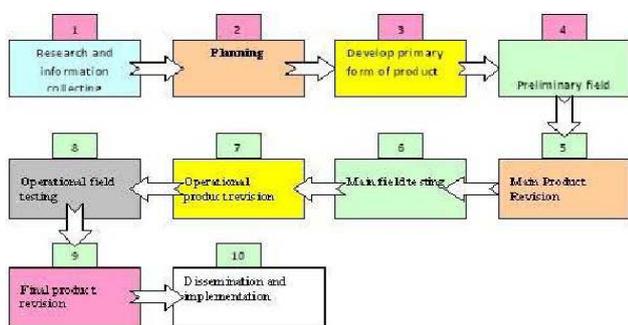


Fig. 1. Diagram development Process

The chart of the research steps is shown in the following figure.

2. Development of the Dick dan Carey Models

Development of the *Dick dan Carey Models* are one of “Model of education research and development” is the systems approach model designed by Walter Dick, Lou Carey, and James Carey [4]. This development model has similarities with the model developed by Kemp, but coupled with the components carrying out the learning analysis, there are several components to be passed in the development and planning process¹. To describe about media we can to know that the media can be interpreted as an intermediary between the sender of information that functions as a source or resource and receiver of information or receiver”[7].

So, the media can to convey learning messages This same similarity That “learning media can be regarded as a tool that can stimulate students to the learning process”[8]. Likewise with the expression of this which states that “learning media is an intermediary means in the learning process”[9]. Meanwhile, the states that “E-learning is an internet application that can connect between educators and students in an online learning space. E-learning is created to overcome limitations between learners, especially in terms of time, space,

conditions, and circumstances”[10]. Through e-learning, educators and students do not have to be in one dimension of time and space. The educational process can run at any time by ignoring these two things.

The using of e-learning is not released from the role of the internet. The internet is basically a collection of information available on a computer that can be accessed because of the network available on the computer. Therefore, e-learning can be carried out because of internet services. E-learning is often called the on-line class because the application uses internet services. One thing to remember is how this technology can help the learning process. For this purpose learning material needs to be packaged differently with different delivery. And more interesting and efficient in various ways. One of the online learning media that can be developed and utilized is Edmodo. “Edmodo is a social networking-based learning media to support the learning process in a virtual classroom, where edmodo provides facilities to share material, communicate with friends and teachers and work online tasks that can be used anytime and anywhere”[11].

Edmodo has features similar to Facebook. However, not free as on Facebook. Edmodo features are designed specifically in the world of education so that there will be interaction between teachers, students and even parents. In line with the expectations of the government to be able to utilize technology that is growing rapidly at this time. Technology that is increasingly developing must be used properly in the world of education. In Edmodo Higher Education can also be used to help students and students in the learning process to achieve the expected learning goals. The e-learning media with edmodo can be used in the classroom or at home. Where lecturers and students can share notes, links, and documents. Lecturers also have the ability to send warnings, events, and assignments to students and can decide to send something in a time frame that can be seen by the public.

III. MATERIALS AND METHOD

This research approach using research and development approach is adopted from the model developed by the Dick and Carey combined with model development product developed by Borg and Gall through 10 stages procedure development. For the first stage, namely the identification of the purpose to analysis instruksional using model of Dick and Carey as to the stage of product development to dissemination and implementation of the product which is the final stage of this research uses a model of development of the Borg and Gall. Thus the steps in this study include:

- a. The development procedur, with the procedure in this development follows these stages:
 1. Research Collection of information
 2. Identification of Objectives and formulating general instructional objectives
 3. Instructional analysis
 4. Identify the behavior and characteristics of students
 5. Formulate specific instructional objectives
 6. Development of benchmark reference tests

7. Development of instructional materials
8. Product development planning
9. 9. Make the initial product design
10. Preliminary trial
11. Revision of the initial draft
12. Test the main product
13. Operational trial
14. Revision of operational products
15. Desimination and Implementation

Data analysis techniques used in this study are qualitative and quantitative data analysis techniques. Qualitative data analysis was obtained from the results of comments provided by a team of media experts and material experts. Meanwhile, quantitative data analysis (validation questionnaire) in this development uses the formula:

$$P = \frac{\sum x_i}{\sum n_i} \times 100 \%$$

IV. RESULT AND DISCUSSION

Initial collection of information was carried out on the lecture process of statistical basic classes where lectures had been conducted in the previous year using computer-based interactive modules, but not yet implemented online learning . Based on this preliminary research researchers took solutions to problems by developing and utilizing e-learning media with using edmodo for statistical classes.

In this step the researchers have identified general instructional wherein general purpose was to enhance the competence of the students in understanding, applying, analyzing the basics of statistics, analyze the data statistically in the community for education, social, and cultural, and recommend solutions for problems results of evaluation of statistical data in the community in the areas of education, social, and cultural cutting edge during the industrial revolution 4.0 as well as designing the exhibition program of statistical data.

In this step the researchers have produced a Semester an Implementation Plan (RPS) for statistics class for the third semester. In conducting this analysis the researchers menyusunnya instructional accordance with the objectives and the needs required by the use of blended learning based Edmodo application implementation. Characteristics of the students studied had less favorable characteristics of the materials of numerical mathematics. Therefore, researchers must develop detailed as ungin media to be able to achieve the goals backfire.

Relating to time limitations in this study, the researchers restrict specific instructional objectives at

- a) Students are able to analyze the data normality test calculation properly through individual activity report
- b) Students are able to analyze the calculation of the homogeneity of the set of data correctly
- c) Students are able to analyze the regression test correctly

- d) Students are able to analyze the correlation test correctly

In this step development of researchers devise a test in the form of an essay in the normal test material; itas, homogeneity, correlation and regression test. The result of this step is research to develop on the lecture material. Where material is taken from a variety of sources and references about statistical method statistics in openelitan. The material is then developed in the form of e-learning media about normality test, hompgenoitas, correlation and regression.

Researchers plan the orderly products along with other research teams with the data required memporsipakna various instruments such as product validation, and things that are needed during product development is done. The creating the initial product design. In this stage produces several products media e-learning includes the study of the normality test, homogeneity, linear regression and linear correlation test. Products are dikembangkan then be tested in accordance with the stages of development that has been planne. Trials will be conducted through the insights of experts regarding these products are of instructional media experts and subject matter experts. Material experts test materially. In this trial a few things that should be revised so that the development process continues to the next step. Based on feedback from the initial trials are then has been revised on the side where the display using the colors are sharper, in terms of material existing in the preparation of material changes in the appearance and increase the clarity of sound in the material as well as the addition of bberapa link for more appealing to users.

The main product trials conducted by test one to one, small group test and then developers to validate that the expert Syarifah as subject matter experts and and Ricu Sidiq as media experts. In this step test was carried out against other classes, not being sampled in this study, which generate empirical data that e-learning media is feasible and can be used for learning. In this stage there is no input or advice given by respondents signifikan. But there is little demand for the revision of the types and amounts of letters used In this stage result in operational products that have gone through repair of various inputs from the operational field and test results from the experts. In the trial the feasibility of the material experts and media experts obtained the following results:

TABLE I. RESULT OF VALIDASION EXPERT

Aspect	Respondents		Average value
	R1	R2	
Material	4,24	4,33	4,29
Instructional	4,40	4,35	4,36
Technical	4,20	4,35	4,28
Amount			4,31

In this feasibility test, experts have given an assessment of the edmodo application that has been

developed in accordance with the purpose of using it for statistical classes with blended learning models.

The results of this product development are then used in the lecture process in the statistics class by using a blended learning model. where e-learning learning media using edmodo application is applied in statistical classes for class A 2017/2018 Regular A class on odd semester. This media conversion was carried out starting at the 5th meeting.

The purpose of the research on the development and utilization of e-learning media by using this edmodo application is to produce learning media products that can be used for e-learning while utilizing it in the lecture process with blended learning models to facilitate the transformation of skills and knowledge. Scientific activities are needed to achieve these goals. The results of the above study indicate that e-learning learning media products using the edmodo application developed are very valid for use. Therefore the use of the media in statistical classes can be declared effective with good test results. Where described in the implementation of product utilization activities have a positive impact on students.

In the process of implementing e-learning media by using the edmodo application, a joint commitment is needed to be able to complete various tuition contract bills made at the beginning of the meeting. As a first step the lecturer must make a joint agreement with students, then create an account for the lecturer to create an account in Edmodo according to the data themselves and ask students to enter the account by providing keywords for certain groups. In this network the teacher can provide files, assignments and provide an assessment of student activities. This certainly helps students to obtain the desired competencies. The advantages of using the Edmodo application in learning with blended lines are more complete and freely available or free, making it easier for students to enter the learning system. Indeed there are various applications that can be used in online learning but edmodo is considered more complete for unpaid applications. Therefore, teachers other instructors can use the Edmodo application for online learning.

V. CONCLUSION

The blended learning in statistical course can be used and used by learning media using edmodo. The instructor must prepare various interactive media needed and included in this application. Commitment to the solution is one thing that is very important for achieving learning objectives to improve the quality of learning.

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