THE DEVELOPMENT OF E-LEARNING SOCIAL MEDIA BASE TO THE STUDY OF GROUP DYNAMIC IN STTIAA PACET MOJOKERTO

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ABSTRACT

The development of information technology develops rapidly into all fields, with various facilities it can be perceived how things are easier and faster. Social gathering, which was originally, hard to coordinate has now become something that can be held anytime. This matter has a huge impact on the social relationship among the society. Before, the existence can be observed directly; the continuity as well as the dynamics, have now became a little difficult as a result of social media forum.

The relation of this matter toward group dynamic subject is it becomes more difficult to learn the dynamic in a social group. Therefore, to simplify the learning of dynamic group nowadays, it is necessary to involve the development of social media since the development of a group also occurs in social media. Then, the process of learning this subject can be done through e-learning to get the trial process of the dynamic or the leadership process with social media through the groups.

As a result, the development of one group in a social media can be directed to be a dynamic group in accordance with the purpose of the development of that group. Likewise, it is possible to learn the leadership of that group through the development of e-learning.

Keywords*: development, e-learning, social media, group dynamic*

A. BACKGROUND

The education world has experienced a huge development through the advanced technology. As a result, old or conventional educational methods are felt to be less effective for learning due to the problem of space and time. One of the important components in the learning process is the learning media. The learning Media plays an important role in the learning process. The exciting and interesting learning media will increase the interest of students so that the purpose of learning will be achieved. The educators are required to create interesting media of learning. One of the medias that are such a hit now is Internet. Learning through the internet is categorized as electronic learning or what we know now as E-learning. E-learning, Onno W. Purbo (Amin, 2004) stated that the "e" in e-learning is the technology that is used to support learning through electronic technology. Internet, satellite, tape audio/video, interactive television and CD-ROM are just parts of the media electronic used.

The use of e-learning is expected to be able to motivate the improvement quality of learning and the materials as well, the quality of activity and the independent of students, as well as the communication between lecturer and students and among students themselves.

Through e-learning, everyone can share information and is able to access the material subject anytime. E-learning can also save time in learning, and save money that needs to be spent for learning. In this modern era, with just PC, laptop or smartphone with internet connection make someone willing to just sit for hours going online. The existence has became a trend and expanding into all areas. With this kind of trend, educators need to implement the use of the information technology to the students to improve the quality of media learning (e-learning) and also being a capital to let the social media enter in the development of e-learning in the Christian Learning Program is STTIAA Pacet Mojokerto.

Social media is efficient for the learning process so that students can be more communicative. Exploiting social media communications on mobile devices smartphone applications such as Facebook, Twitter, Path, Whatsapp, line etc. as a means of communication media e-learning.

For example, a teacher can utilize Facebook as a medium of e-learning, faculty can create a group, in the group consisting of students. Lecturers can use the facility to provide teaching materials by uploading teaching materials such as .pdf files, word, PowerPoint or other files. Thus students can upload or download anywhere and anytime when needed. Students can also ask questions to the lecturer, conducting interactive discussions with all students in the same time in different places through the phone number whatsapp about the material that has not been understood without having to meet with his teachers, because teachers are required to continue to innovate and diversify in order to achieve interesting learning effective, and efficient.

Study Program Student Christian education STTIAA Pacet Mojokerto on subjects of social group dynamics have been taught the mutual relations and interaction between members of a group with a leader in the development of the group to achieve a goal. To direct students to a group that can interact quickly and be communicative to both students with students and professors and students, the researchers are interested in developing e-learning-based social media in the course of group dynamics.

Based on the background above, researchers are interested in writing a scientific paper entitled Development of E-Learning-Based Social Media In Class Learning Group Dynamics eyes in STTIAA Pacet

The problems of this research are:

1. How does the design of the development of e-learning media social media-based learning courses in group dynamics Christian Religious Education Study Program STTIAA Molokerto Pacet?

2. How is the quality of the development of media-based e-learning course on social media dynamics of student groups in Christian Religious Education Study Program STTIAA Pacet Mojokerto?

3. How is the effectiveness of e-learning development of social media-based learning courses in group dynamics Christian Religious Education Study Program STTIAA Pacet Mojokerto?

Based on the formulation of the problem; the objectives are:

1. To describe the design of the development of e-learning media social media-based learning courses in group dynamics Christian Religious Education Study Program STTIAA Pacet Mojokerto

2. To determine the Quality of the results of the development of media-based e-learning course on social media in the student group dynamics Christian Religious Education Study Program STTIAA Pacey Mojokerto

3. To determine the effectiveness of the development of e-learning-based social media in learning subjects in group dynamics Christian Religious Education Study Program STTIAA Pacet Mojokerto

B. METHOD

In this study researchers used ADDIE development model which includes the step of analysis, design, development, implementation and evaluation. The orientation of this research and development is a software product (software) learning in the form of social media. Media web as what mentioned is a computer-based interactive media or smartphone that can be accessed by students through the Internet.

ADDIE Model is a systematic instructional design model (Tege and Kirna, 2010). According to the steps of product development, this model can be used for a wide variety of

products such as model of development, learning strategy, learning methods, media and teaching materials. This model is simple and easy to learn as well as having a systematic structure. As we know that the model ADDIE consists of five interrelated components and systematically structured, which means from the first stage to the finish fifth in its application must be systematic, can not be sorted randomly or we can choose where we think we want to be first. The characteristics are simplicity, structured and systematic. To suit to the needs and characteristics of students Christian Religious education Study STTIAA Pacet Mojokerto, the design model will be easily learned by the educators.

In the study of media development e-learning, it is using two methods of data collection, the questionnaires and tests. Questionnaire method according Sugiyono (2008: 199) "Questionnaire is a technique of data collection is done by giving a set of questions or a written statement to the respondent to answer". Instrument used for research method in this development is the questionnaire. A questionnaire is used to collect data on a review of specialist subjects or fields of study, design experts, and expert media student learning while testing the individual, small group, and when there is field test. The test method used in this study is the achievement test that is objective test or multiple-choice used. The trials of research instruments are conducted to get an idea empirically whether learning outcomes instrument fit for use as a research instrument.

Validity Test Instruments

The validity test of this achievement is conducted on students of Christian Religious Education Program Study STTIAA Pacet Mojokerto as many as 50 students. Objective test instrument was tested on students of Christian education as much as 40 items tested the objective test of which there are 30 test items were valid and 10 invalid test items. A total of 30 valid test items are to be used in testing the effectiveness.

1. The reliability Test Instruments

Reliability testing is used to determine whether the instrument will remain consistent or stable over time. The reliability of the test is analyzed by using 30 valid test items obtained through validity test. From the results of test calculations performed, validity can be obtained that the achievement test has a coefficient of 0.919 with the criteria very well.

2. Difficulty measurements test instruments

This test is used to determine the instrument has the level of difficulty on the test item in the category of easy, medium, or hard. According to analysis done shows that the instrument has a difficulty level of learning outcomes test device (Pp) of 0.717. The results viewed from the criteria for the level of difficulty (P) it is categorized as easy.

Fernandes (Koyan, 2011: 140) states that a good test is a test that has a difficulty level between (0.25 to 0.75). Thus it is seen from the Fernandes statement, the difficulty level of the test is good. In addition, the test results obtained by the test difficulty level of three categories of matter that is about the difficulty level of easy, moderate and difficult. There are about 15 with easy difficulty level, 10 with moderate difficulty level and 5 with the level of difficulty difficult.

3. Different Power Test Instruments

Test different instrument is asking if such instrument has the ability to differentiate between samples intelligent and less intelligent samples. From the results of calculations carried out showed that the test has a different power tests (Dp) of 0.6.

Results of the test showed that different power tests included into three categories of excellent, good, and good enough. There are five questions that have different power very well. 15 questions have different power categories is quite good. Problems with the category of very good, good, and good enough are to be used to test the effectiveness.

In this development study used three data analysis techniques, namely descriptive analysis of qualitative, quantitative descriptive analysis techniques and methods of statistical analysis of inferential / inductive.

1. Qualitative Descriptive Analysis

According Sugiyono (2010: 15), analysis of qualitative description is a research method that is based on the philosophy of positivism, is used to examine the condition of the object that is natural, (as his opponent was an experiment) where the researcher is as a key

instrument, sampling data source done in purposive and snowbaal, gathering samples with triangulation techniques, data analysis is inductive / qualitative and qualitative research results tend to be more on the significance rather than the generalization. Based on the above it can be concluded that this type of research is using qualitative research because the analysis of data is in the form of words written or oral, and consider the opinions of others who may be called by the speaker.

This qualitative descriptive analysis technique used to process data from expert review of the course content, instructional design experts, media expert instructional and trial test for students. Data analysis technique is done by grouping information in the form of qualitative data entered, comments, criticisms and suggestions for improvement contained in the questionnaire. The results of the analysis are then used to revise the media developed.

2. Quantitative Descriptive Analysis

Quantitative Descriptive Analysis is a method of data processing that is done by a way of systematically compiled in the form of numbers or percentages, of an object under study, in order to obtain general conclusions (Agung, 2012: 67).

In this study, quantitative descriptive analysis used to process the data obtained through a questionnaire. The questionnaire used in this study was a questionnaire with Likert scale.

As stated in Sugiyono (2011: 93) Likert Scale is used to measure attitudes, opinions, and perceptions of a person or a group of social phenomenon. In the Likert Scale, variables to be measured are translated into indicator variables. Then indicators are used as a starting point to construct items instruments in which can be a statement or a question. The answer to every item instrument that uses a Likert Scale has a gradation from very positive to the negative. For the measurement of the above variables used Likert scale of five levels as follows:

1. Very poor
2. Poor
3. Good
4. Very Good

5. Excellent

Every answer has a score. For the first one, which is very poor it counts as 1, followed by poor with 2, and so on. To get a conclusion of the answer, the lowest, highest and moderate score are needed and here is how it can be done:

Percentage of score= (Total score(F): Maximum score(N)) x 100%

Explanation:

F = The total of all subject percentage

N = Total subject

Here is the interpretation criteria score based on the interval:

a. 0%-19.99% = Very (disagree/poor)
b. 20%-39.99% = Disagree/ poor
c. 40%-59.99% = Good/ neutral
d. 60%-79.99% = Agree/good
e. 80%-100%= Very (agree/ excellent)

3. Analysis of inferential statistics

Inferential statistical analysis was used to analyze the sample data and results will be generalizable to the students of Christian Religious Education Study Program STTIAA Pacet Mojokerto before and after using e-learning media-based social media. To see the effectiveness of this learning media according Suharsimi Arikunto (2007: 395), the data collected in the form of the value of the initial test (pretest) and the second test (posttest). The researchers' goal was to compare two values with the question whether there is a difference between these two values significantly. Testing the difference in value is applied only to the second average values only, and for the purpose it is used a technique called

the t-test.

Data and trials were collected using pretest and posttest of the subjects in-group dynamics tested. Pretest and post-test results were analyzed using t-test results correlated with the help of manual calculations or SPSS. Before performing a hypothesis test (t-test

correlated), test requirements (test for normality and homogeneity test) has to be done. The formula for calculating the prerequisite test and test hypotheses (t-test correlated) are as follows;

a. Normality test

Normality test is a test of the normality of the data distribution. This test is the test most widely performed for parametric statistical analysis because the data that are normally distributed is a condition of doing parametric tests.

As for data that does not have a normal distribution, then the analysis is using non-parametric tests. The data that has a normal distribution means it is having a normal distribution as well. To determine the normal distribution or unusable formula, it is advisable to use Chi-Square. According Sugiyono (2008; 259) Chi Square formula is as follows:

$$x^2 = \sum_{i=1}^{k} \frac{(fo - fh)^2}{fh}$$

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Where :

x2 = Chi Square

fo = frequency observed

fh = Frequency expected

Testing criteria: normal distribution of data if X2count <X2table with k-1 degrees of freedom

b. Homogeneity of Variance Test

Homogeneity test is a test to distinguish between two or more populations. Homogeneity test aims to determine whether the variance score that was measured in both samples have the same variance or not. Populations with equal variances called homogeneous

population variance, while the populations with different variances are named as heterogeneous variance.

Factors that cause a sample or population becomes non homogeneous are the wrong sampling process, the spread is not good, the difficult homogeneous materials, or equipment to test the homogeneity has been damaged. If the test samples are non homogeneous, the samples cannot be used and need to be re-evaluated starting from sampling until the deployment process even if needed it is to be repeated to get a homogenous test sample.

To test homogeneity, test-f is used, the formula is as follow:

$$F = \frac{varian\ terbesar}{varian\ terkecil}$$

Criteria testing H0 is accepted if F count> F table means homogeneous samples. The test is performed on a significant level of 5% with degrees of freedom numerator n1 - 1.

c. Hypothesis test (t-test)

According Sugiyono (2009: 159) hypothesis is as follows: "The hypothesis is defined as a temporary answer to the formula research problem." Hypothesis test conducted in this study using the analysis of the t-test for this research is the study by comparing the results of pretest and results posttest. The hypothesis taken is as follows;

$H_0 : \mu A_1 = \mu A_2$
$H_1 : \mu A_1 \neq \mu A_2$

Information:

$\mu A1$ = average student results before following the learning with e-learning social media

$\mu A2$ = average student results after participating in learning with e-learning social media

H0: $\mu A1 = \mu A2$: There is no difference in student learning outcomes after following study e-learning using social media.

H1: $\neq \mu A1\ \mu A2$: There are differences in learning outcomes of students after learning by using e-learning media. Mechanical analyst data used to test the hypothesis in this study, using a t-test analysis of samples correlates with the following formula;

$$\frac{\overline{x}1 - \overline{x}2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2} - 2r\left(\frac{s_1}{\sqrt{n_1}}\right)\left(\frac{s_2}{\sqrt{n_2}}\right)}}$$

Information :

x 1 = average sample 1

x 2 = average sample 2

s_1 = standard deviation of the sample

s_2 = standard deviation of the sample

s_1 ^ 2 = Variance sample 1

s_2 ^ 2 = Variance sample 2

Research hypothesis testing is conducted with a sample t-test analysis product moment correlation formula. All hypothesis testing was done on a significance level of 5%. Testing criteria is if the calculation results obtained tcount> ttable then H0 and H1 are accepted.

C. RESULT AND DISCUSSION

The results of this development research presented into four main points, namely;

1. Design of the development of e-learning media-based on social media
2. Presentation of data and data analysis
3. Quality and effectiveness development of e-learning media-based on social media
4. T-test on the results of the pretest and posttest

1. Design the development of e-learning-based social media

The design of the development of e-learning media-based social media is a needs analysis. Through his analysis, problems in Christian Religious Education Department students STTIAA Pacet Mojokerto to the learning process of group dynamics course are discovered. Lecturer in presenting the material is not absorbed by the students optimally for a teaching style that is monotonous and conventional and it causes burn out and boredom for

students. In explaining lecturer stick with thick books that they have to learn beforehand and sometimes students write a lot of material that will make the students more burnt out again in the following study of social dynamics. Additionally teaching hours are very limited, so the material presented are uneven.

Because the hours of teaching is limited, the professors take advantage of e-learning through social media so that they can at any time ask the professor about the material that they do not understand without having to meet in a distance and time difference. The learning process of e-learning can indirectly help facilitate student learning. Researchers are interested to raise the research development of E-Learning-Based Social Media In Learning Course on Group Dynamics STTIAA Pacet Mojokerto.

2. Presentation and Analysis Data

In sub-chapter presentation and analysis of this data there will be six things presented: content expert test subjects, test expert instructional design, instructional media expert testing, individual testing, small group trial and field trials.

The six that will be presented consecutively in accordance with the results are obtained from the stages of each trial stage.

a. Expert Content Test Subjects

An expert in the content of the course dynamics to determine the feasibility of the content of the material assesses the test. The instrument used to test the course content expert is questionnaire. The method used to collect data was questionnaire method. Based on the evaluation of the content of the course dynamics expert group, after being converted with a conversion table, the percentage of 96% achievement rate is at a very good qualification, so in terms of the substance of the material presented in the media e-learning-based social media does not need to be revised.

b. Test Expert Instructional Design

Tested instructional media to a media expert named Dwi Lestariningsih learning. Based on the evaluation of instructional media, after converted by the conversion table

percentage of 94% achievement rate is at a very good qualification, so the media e-learning-based social media does not need to be revised.

c. Individual Trial

The subjects of the test are the individual student Christian education STTIAA Pacet Mojokerto as five people. Based on the results of the assessment of individual testing, after conversion percentage of 90% achievement rate is at a very good qualification, so the media e-learning-based social media does not need to be revised.

d. Trial Small Group

In a small group trial, the subjects in this study were students of Christian education STTIAA Pacet Mojokerto as many as 10 people. Based on the evaluation of the small group trial, after conversion with a conversion table percentage of 91% achievement rate is at a very good qualification, so the media e-learning-based social media does not need to be revised.

e. Field Trial

For subjects in the field trials is to the students of Christian education STTIAA Pacet Mojokerto with the number of students as many as 20 students. Based on the evaluation of the field trials, after converted by the conversion table percentage of 92% achievement rate is at a very good qualification, so the media e-learning-based social media does not need to be revised.

3. Quality and Effectiveness of Development E-Learning-Based Social Media

Before testing the effectiveness of e-learning development of media based social media course on group dynamics, researchers tested the quality of the development of e-learning media social media based on student Christian education STTIAA Pacet Mojokerto. Based on the evaluation of the trial the students are interested in e-learning-based social media. Furthermore, the researchers conducted a pretest towards 20 students of Christian education STTIAA Pacet Mojokerto and subsequently forwarded to the 20 students doing post-test. The results of the pretest and posttest as in the following table.

4. T-test Results Pretest and Posttest

Results Pretest and Posttest Group Dynamics Course

No	Respondent	Pretest	Postest
1	20 Students	1883,3	2010
	Average	78,74	83,75

The result of analysis of pretest and posttest show that 20 students on average postest can be obtained at 78.74 and the average value postest 83.75. Based on the value of pretest and posttest from 20 students, then it is performed to correlate the samples manually. Before performing a hypothesis test (t-test), it is necessary prerequisite test analysis covering the normality test and homogeneity test. As for the presentation, as follows;

Normality test. Normality test data is done for the present that the sample actually came from normally distributed population. Data normality test conducted on data from the 20 students studying subjects dynamics that is;

1. The results of group dynamics subject of Christian education students of STTIAA Pacet Mojokerto who follow learning without the use of e-learning media-based social media.
2. The results of group dynamics subject of Christian education students of STTIAA Pacet Mojokerto who follow learning with the use of e-learning media-based social media

Using Liliefors did normality test of the data. Based on the analysis of data normality test is performed, are presented in the following table;

Normality Test Results Pretest and Posttest

A group of learning data	X^2_{hitung}	X^2_{tabel}	Status
Pretest	0,484	7,815	Normal
Postest	1,468	5,591	Normal

According to the table above, it shows that the results of calculations using the chi-square formula, obtained X2count <X2tabel with a significance level of 5%. Thus all data subjects score the learning outcomes of students in normal distribution group dynamics

Homogeneity test data is analyzed by F-test criteria homogeneous if the data obtained Fcount <Ftable, homogeneity test results are presented in the following table;

Homogeneity Test Results Prestest and Posttest

Data	F_{hitung}	F_{tabel}	Information
Pretest Postest	1,593	2,05	Homogenoutiy distribution

From the test results obtained F count = 1,593 while the F table = 2.05 with a significance level of 5%. So we can conclude that Fcount<Ftabel so that both data have variances were homogeneous.

Hypothesis testing, hypothesis testing research are conducted with samples t-test analysis correlated. All hypothesis testing were done on a significance level of 5%. Testing criteria is if the calculation results obtained tcount> ttabel then H0 and H1 accepted. Based on t-test results obtained t = 6.810 and 2.021 for the table = db = 46 level of significance of 5%. This means tcount> ttable so that H0 rejected H1 are accepted. Based on testing criteria H0 rejected H1 are accepted which means that there is a difference in student learning outcomes before using e-learning media social media based on student Christian education STTIAA Pacet Mojokerto.

D. CONCLUSIONS AND SUGGESTIONS

Conclusion - Based on the formulation of the problem, the results of data analysis and discussion in this study, it can be concluded as follows;

Design development of media-based e-learning course on social media in the student group dynamics STTIAA Christian education aims to make it easier for students and lecturers on teaching and learning through social media through the ease of communicating with text in a question and answer interaction between students lecturers quickly. Able to access the data through a variety of social media with a different distance and time and will quickly gain

knowledge faster and easier. Social media is able to expand the horizons of students with an online system remotely.

Students and faculty can review teaching materials or access it any time and anywhere when you need to use social media only so that it can facilitate learning-in-distance process. Any change student attitudes from passive to active, more interactive student asked the professor through social media. Learning is more interesting, communicative, adaptive, meaningful and fun.

1. Quality of the development in media e-learning-based social media that is done by;

a. Expert content of the courses that are in the very good category, with a percentage of 96%

b. Instructional design experts are in the very good category with a percentage of 92%

c. Media expert learning in the very good category with a percentage of 94%

d. Individual testing is in the very good category with a percentage of 90%

e. Small group trial is in the very good category with a percentage of 90%

f. The field trials in town are in the very good category with a percentage of 93%

2. In the effectiveness of the development, there is a difference in student learning outcomes significantly after following e-learning using social media based on students of Christian education STTIAA Pacet Mojokerto.

Comparison of the results of the calculation of average after using e-learning social media is 25.13; it is greater average before using social media e-learning at 23.5 at significant level of 5%. Any significant differences demonstrated using media-based e-learning course on social media group dynamics affect the Christian education of students STTIAA Pacet Mojokerto compared to not using e-learing based social media.

Suggestions—Suggestions were submitted regarding to the development of e-learning media-based social media in the course of group dynamics are as follows;

a. College student. Learning activities both on campus and at home in order to really give priority to students of social media as the media e-learning so that the material absorbed will become more optimal. More interactive communicative from students when there is any material not being understood.

b. Lecturer. Lecturer suggested that a more intense use of media-based e-learning social media in learning, remembering the modern era, the students actively are using social media for questions and answers in the eyes of the limitations of space and time of study in group dynamics. Besides lecturers should also be creative in learning and sharing their knowledge to students so that students do not feel burn out by following study group dynamics.

c. Learning Technology. From the research that has been done, there is a development progress that has been very good.

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