
THE DEVELOPMENT OF E LEARNING BASED ON MOODLE ON CRAFT AND ENTERPRENEURSHIP TO INCREASE STUDENT CLASS XI INDEPENDENCE AND STUDY RESULT AT SMA KHADIJAH SURABAYA

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Abstract

The research goal is to understand the appropriateness of E learning based on Moodle that is applied as learning material for increasing student class XI independence and study result at SMA Khadijah Surabaya. The research is applying Bord and Gail research procedure (2003). The test is done by individual test, small group test, and largegroup test. The validity test is applied for understanding the degree of measurement accuracy through expert test for knowing the degree of validity construct while for knowing the validity we use content validity test. Validity test and instrument reliability analysis is applied for knowing the reliability of the instrument. When the instrument is stated reliable, then the instrument test is applied for actual measurement through pretest and posttest, with applying sign test by SPSS 24. The appropriateness development result is proven by 89,59% of expert test, 89,19% by media expert, 88,96% learning expert. The development is effective for increasing leaner autonomy is proven by 82,96% questionnaire result and the development is considered able to increase learning result is shown by the pretest average is 50,11 and posttest average is 75,68 so that obtaining gain 0,545. It means learning result of experiment increase which categorized as medium because $0,7 > g \geq 0,3$ so, there is different between learning result before and after the application of E learning media based on Moodle.

Keywords : *The development of E learning based on Moodle, autonomy, study result.*

Introduction

The rapid development of digital world enable people to access information easily. So, people nowadays very depends on the easiness to accessing information.

In learning process, the message of learning must be well delivered to student. It is the reason learning media is used to help teacher to deliver learning message to student. The application learning media is hopefully can help increasing the quality learning process and finally enable to elevate student's autonomy and learning result.

According to Association of education and communication technology (AECT) the function of media is the tool which is used in delivering information, while Sadiman (2009:7) stated that media is every tool that can be used to deliver message from the sender to the receiver so it can stimulate student's mind, feeling, attention, and interest so that the learning proses takes place.

SMA Khadijah applies 'kurikulum 2013', it used to be TIK that integrate all subject indirectly, but since there is not TIK in this curriculum, craft and entrepreneurship replaces the previous subject. The learning of craft and entrepreneurship is hopefully help student to grow entrepreneurial spirit that can initiate his own business while studying in university.

Based on the analysis and developer observation find student learning problem at Sma Khadijah. They are : (1) the low student autonomy level. It is because the student assumption that craft and entrepreneurship is difficult subject to be learned. (2) The low student's achievement on the subject. The student's achievement on the subject is below KKM, that is 75.

Based on the observation and data, it is necessary to provide interesting media to grow high level student's curiosity toward craft and entrepreneurship that is by developing E learning based Moodle.

E learning based on Moodle is a CMS that can change learning media into web. The application enable student to enter so call "digital classroom" to access learning materials. Using Moodle, we can create learning material, quiz, electronic jurnal, etc. E learning based Moodle is chosen because: (1) learning process will be more interesting for student so, it can develop student's autonomy. (2) learning material is easier for student and it is possible for the student to master the goal of learning. (3) teaching method is varieties.(4)providing various student activities such as to observe, demonstrate than just listening to teacher teaching

Research method

1. Research model

The development research applies Borg and Gall procedural that adopted Dick and carey. Procedural model is descriptive model, that is refer to steps that must be followed to produce product (Rusijiono & Mustaji, 2008)

Model procedural Borg and Gall gives the steps series that is comprehensive and specific, which is easier for researcher to conduct the development learning product process that is E learning based Moodle and produce suitable product to achieve desire goal, so it can overcome the student's learning problem.

The researcher does not conduct the 10th step. It is because it is not part of design process (Dick and Carey,2001:7). For that reason, the researcher doesn't conduct the 10th step.

2. Data analysis technique

Data analysis technique that will be used is refers to formulation of the problem that is stated. Based on formulation of the problem there are 3 tests will be conducted, they are:

a. The appropriateness of E learning based Moodle

On the step, we conduct statistic data analysis descriptive using expert test validation Questionnairepercentage result. The formula is

$$PSA = \frac{\text{skor postes} - \text{skor pretes}}{\text{skor maksimum} - \text{skor pretes}} \%$$

b. The effectiveness of E learning based Moodle to increase student class XI study result.

To find out the effectiveness of E learning based moodle to increase the student autonomy, is to calculate with N Gain formula. Analysis data N Gain is conducted to see the increase of student autonomy on craft and entrepreneurship after E learning based moodle is used. The formula is :

The result is interpreted by using gain ternormalisasi accordint to meltzer classification (2002:184) as follow:

Tabel 1. Gain Skor

Average Gain score	Category
$(g) \geq 0,7$	High
$0,3 \leq (g) < 0,7$	Low
$(g) < 0,3$	Average

Gain normalization (N Gain) is conducted to find out the increase student's cognitive study result after treatment. The increase is taken from pretest and posttest.

Research Result and Discussion

1. To identify learning goal

The formula learning goal can be developed from learning goal. The researcher analyzes the syllable and teaching plan of craft and entrepreneurship that has potential to become object of research. In other hand, according to the developer analysis and observation, there is learning problem at SMA Khadijah. They are:

- (a) the low student autonomy level. It is because the student assumption that craft and entrepreneurship is difficult subject to be learned.
- (b) The low student's achievement on the subject. The student's achievement on the subject is below KKM, that is 75.

The record shows that student achievement in 2016/2017 and 2017/2018 academic years were below KKM. The student's achievement was 50,25%.

2. Conducting learning analysis

Learning analysis is the knowledge of student, which student experience difficulties to master the material. The other problem is the low level student autonomy. It is because student's assumption that the craft and entrepreneurship is hard to be learned.

Conducting learning analysis is to decide the material that going to be learned by student. The subject material is developed based on syllable that is oriented on kurikulum 2013.

3. Student analysis and learning context.

The characteristic of Student class XI Sma Khadijah is categorized formal operation step. The teenager at 17 years old is the early teenager who starting to think the experience outside the concrete experience and able to think abstractly, idealistically and logically. Besides that, on the step student is able to solve the problem logically.

Furthermore student has knowledge and familiar with modern technology. Most student can operate computer and internet. It makes easier for student to uses E learning based on moodle.

4. To formulate special learning goal.

The special learning goal is student is able to

- a. To explain product design concept and food and drink packing product.
- b. To identify product design and food and drinkpackingproduct.
- c. To decide product design and food and drink packing product.
- d. To make product design and food and drink packing product.
- e. To report orally or written about product design and food and drink packing product.

5. Developing scoring instrument.

a. Questionnaire instrument.

There are two Questionnaire instruments are developed. They are questionnaire for expert and target. The function of the instrument is to measure the appropriateness of media that is developed and teaching plan that is used as teaching steps reference in learning process and also to discover student autonomy.

b. Test instrument

Test instrument is for discovering the level of student's succeed in learning material by using learning media. Student study result test instrument consists of pretest and posttest in multiple choice. Researcher applies twenty multiple choice problems as the student learning measurement.

6. Developing learning strategy.

The kinds of learning strategies that can be applied are pre learning activity, learning process, and after learning activity of learning activity.

Pre learning activity is applied by questioning student about the material which will be learned and the correlation with the previous material and also to motivate the learner by providing explanation the importance

of the material that will be learned. For the learning process is conducted by providing the main concept of subject material then teacher asks student to study the material that has been served on E learning based Moodle. It is continued by making summary or conclusion about the learning material that must be done by student.

7. To choose and develop learning material.

Learning material that is developed is craft and entrepreneurship based on curriculum. The material will be arranged in E learning based moodle that is accessible by computer which are provided by school. E learning based moodle is chose because it consider more interesting for student and it can grow student autonomy. Teaching learning will be meaningful and easy for student to understand and master the learning goal much better.

8. To design and conduct learning formative evaluation.

a. Expert test

1. Material expert

Based on the scoring result of material expert for three aspects that is, the content appropriateness gets 84,61%, language appropriateness is 91,66%, teaching appropriateness gets 92,5%. For all aspect gets 89,59%. According the result, it can be categorized as very good category.

2. Media expert.

According to media expert scoring result there are three aspects that is, software appropriateness is 91,66%, learning appropriateness aspect is 85%, visual communication appropriateness is 90,9%. Overall aspect is 89,19%. According to Arikunto (2005:80) the score is considered very good.

3. Learning expert

According to learning expert is introduction aspect is 87,15%, content aspect is 89,70%, closing aspect is 90,05%. Overall aspect is 88,96%. According to Arikunto the score is very good.

b. Limited test

1. Individual test

According to the small group result are design aspect is 89,44%, understanding is 83,83%, technic standart is 85,57% and overall is 86,28%. It is considered very good according to Arikunto (2005:80).

2. Small group test

Design aspect is 82,05%, understanding is 80,25%, standart technic is 84,52%. Overall achievement is 82,86%. It is very good.

3. Large group test

The three aspects are design aspect is 87,57%, understanding is 84,75%, standard technic is 82,25% and overall is 84,19%. According to Arikunto is considered very good.

c. Field test

1. Autonomy instrument

According to autonomy questionnaire result is 82,25%. It means questionnaire result is good. E learning based on moodle has positive influence toward student autonomy.

2. Study result instrument test

Based on N Gain experiment class gets 50,11% for pretest and 75,66% for posttest. The result for gain is 0,545 it means the study result of experiment class increase with average category because $0,7 > g \geq 0,3$. For control class gets 53,42 for pretest and 65,12 for posttest. It gets 0,295 gain. It means the study result for control class is increase but it is considered low because $g < 0,3$.

3. Learning revise

After experiment for large group, product is revised for gaining usage appropriateness and development of E learning based Moodle. According to the field test on large group we get some feedback. That is:

- a. Font size should be larger.
- b. There are some miswriting.

- c. On learning evaluation page should provide button for each material for student to choose the material student want to learn.
- d. On ,learning evaluation page should add explanation for each number.

Conclusion and Recommendation

According to data and result that is taken during experiment and development E learning based moodle at SMA Khadijah Surabaya, researcher draws some conclusion, they are:

1. From the questionnaire data toward content and construct of E learning based moodle on craft and entrepreneurship subject is achieved 89,59% on material expert, 89,18% on media expert, 93,08% on learning design and 84,26% for large group test, this result is considered very good. It means E learning based moodle is appropriate to use as learning media for craft and entrepreneurship subject.
2. Based on pretest result that is given to 34 students achieved pretest average 50,11 and 75,68 for posttest it makes 0,545 gain meaning experiment class experience increasing study result with average category because $0,7 > g \geq 0,3$ meaning that N Gain analysis result proves that there is significant difference between experiment class and control class. The evidence shows that E learning based moodle that is developed by researcher is effective to be applied in learning teaching activity.

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