

The Development of Web-Based Learning Media on Economic Subject in SMA Negeri 3 Banda Aceh

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Abstract—This research has a focus on problem solving related to web-based learning media which developed for the economic subject. The aim of this research was to develop and design the web-based learning materials in order to measure the properness on economical subject in SMA Negeri 3 Banda Aceh. This research was the kind of Research and development research which guided by using ADDIE research model. There was analysis stage which conducted to analyze the students difficulties on economic subject. The stages started by designing the web-based media. Right after the media development has done, the research went to the next step by measuring the material and validation which conducted by a professional validator. In this research, the validator consisted of economic subject teacher, 2 professional media validators and an economic lecture as a validator for teacher and students questionnaire feedback. The implementation conducted to students in class XI IPS 1 which consisted of 24 students and class XI IPS 2 which consisted of 28 students. The evaluation was needed to find out and measure the given feedback related to web-based learning which handed out to students and teachers. The feedback questionnaire also showed the positive response which could be categorized as decent. The students responses related to the given web-based learning materials were measured based on the field test. Furthermore the feedbacks result related to the web-based learning media was also show the positive responses which categorized as very good. Overall it can be concluded that web-based learning media on economic subject was worth to be applied as future web-based learning media.

Keywords—*component; Learning Media, Web, Economic.*

I. INTRODUCTION

Web-based learning is a learning program which utilizes the website accessed by internet [5]. Nowadays, as science and technology increases sharply, teacher is expected to develop and prioritize the education quality in by utilizing the most advanced technology. This expectation has to meet the education interest related to the educational purposes especially in innovation development and creative learning process. As we see, the development and education revolution has been increasing sharply years to years. This technology development requires the teacher to move forward and provide creative learning process where the teacher center is no longer qualifies in the modern teaching process and students are may also obtain the information by their own ways it is a fact that 16,68% of 143 internet users in Indonesia are those with age

ranger of 13-18 years old which now known as digital native. This digital native refers to active internet users which using the technology in their daily life. Therefore, the teacher is expected to be able to integrate, provide and utilize the newest technology in obtaining the education goal

This research took place in SMA Negeri 3 Banda Aceh, especially in the class which focused on the social sciences classes. Those classes were XII IPS 1 and XI IPS 2. In this research, the studied material was the economical subject which focused on national income materials. Based on the first observation conducted in the field, the author found several difficulties faced by students in economic subject especially in national income learning material. It can be said that the national income material was classified as a bit hard to be comprehended by students, this because the national income material consisted of several sub-section where it related each other materials and also consisted of counting method which required the teacher to provide good explanation in delivering the materials. This issues related to national income material was concerned as the main experiment topic which tested to the web-based learning material.

The web-based learning material development was chosen as the learning media development in SMA Negeri 3 Banda Aceh because the author assumed that technological development amongst the student could be used as a good method to deliver the learning material. Furthermore, the author found that almost all students in SMA Negeri 3 Banda Aceh used the smartphone through their activities; this situation also could be used to facilitate the web-based learning process. However, based on the description mentioned above, the purpose of this study was to design the web-based learning material for economic subject for class XII IPS 1 and XI IPS 2. Moreover, this study was also conducted to find out any proper economic subject web-based learning material on XII IPS 1 and XI IPS 2.

II. RESEARCH METHOD

This type of study used in this research was in the form of research and development method. The research and development method is the method which could be used to produce and measure the effectiveness of certain products [6].

This study used the guidelines taken from ADDIE development model. The ADDIE was developed by Dick and Carry (1996) to construct the learning system. The ADDIE consists of five stages which consisted of: 1) *analysis*, 2) *design*, 3) *development*, 4) *implementation*, 5) *evaluation*[3].

In this study, the obtained data was analyzed descriptively. There were four respondent categories involved in this study; those were material expert, media expert, economic teacher and students. Furthermore, the results were analyzed descriptively as it written in the table down below:

- 1) The feasibility of materials and learning media assessment
The obtained percentage results classified as following criteria below [1]:

TABLE I. SCORECRITERIA

Score	Criteria
82-100%	Very Decent
62-81%	Decent
42-61%	Adequate
22-41%	Poor
0-21%	Very Poor

- 2) The Teacher Responses Data Analysis

The obtained percentage results classified as following criteria below [1]:

TABLE II.SCORE CRITERIA

Score	Criteria
82-100%	Very Decent
62-81%	Decent
42-61%	Adequate
22-41%	Poor
0-21%	Very Poor

- 3) Students Responses Data Analysis

The obtained percentage results classified as following criteria below [1]:

TABLE III.SCORE CRITERIA

Score	Criteria
82-100%	Very Decent
62-81%	Decent
42-61%	Adequate
22-41%	Poor
0-21%	Very Poor

III. RESULT AND DISCUSSION

In this research, web-based learning development was done by research and development. The research aims development using ADDIE Model. The phase of ADDIE Model is divided into five phases namely analysis, design, development, implementation, and evaluation [3].

A. Analysis Phase

Analysis phase was done to determine the main problems that occur in students, to determine students who will be research subject, and research about theories relate to the media. Based on interview and observation by the researcher with Economics teachers at SMA Negeri 3 Banda Aceh found that the students are not too enthusiastic and less active during the teaching and learning process because of do not use web-

based learning. Therefore, the research is expected to help and made it easier for lecturer or students on the learning and teaching process [2].

B. Design Phase

Design phase is the first stage to analyze and to collect information which supports web-based learning media. In this phase, web-based learning would be designed namely formulating basic competencies, learning goals, formulation materials. Questions and answers, formulatin storyboards, and tools were used in media design.

C. Development Phase

At the development phase, web-based learning will be created and developed. Creating web-based is carried out with several stages in sequence. Assessment of media feasibility by expert validates during the web creation process.

D. Validation Test

Based on data processing, it showed that material validation was excellent. The percentage obtained namely 97.5%. The media validation showed that it was excellent criteria with a percentage of 91.25%. Based on the result, media that have been developed were very feasible to be used on national income in the teaching and learning process. The media is not only can increase and expand knowledge, but also provide flexibility in delivering message [4].

E. Implementation Phase

Implementation phase was carried out in the class after material validation and media validation. The researcher conducted the trials on XII IPAS 1 as a control class and XI IPS 2 as an experimental class.

F. Evaluation Phase

The final phase of ADDIE Model development is evaluation phase. In this phase, evaluation focused on web-based learning media that has been developed. Evaluation would be done based on practical analysis of students and teachers responses using questionnaire.

G. The Teacher's Response Through Learning Media

Semi-open questionnaire is used to find out the teacher's response to web-based learning media. The questionnaire filled out by economics teacher SMA Negeri 3 Banda Aceh.

The teacher's response can be seen in Table IV.

TABLE IV. TABLE RESPONSE OF WEB-BASED LEARNING MEDIA

Number	Question	Teacher's Answers	
		YES	NOT
1	Have you ever heard of web-based learning?	1	0
2	Have you ever implemented web-based learning media during teaching process?	0	1
3	Is it easy to comprehend the web-based learning ?	1	0
4	Does the web-based learning easy to use?	1	0
5	Are you interested to use web-based learning media?	1	0
6	Do you think that web-based learning media is interesting and looking good?	1	0
7	Are the contents obtained in web-based learning media accordance with national income material?	1	0
8	Are the contents in web-based learning media convenient with students comprehension?	1	0
9	Do you think that having web-based learning media could increase students comprehension toward national income material?	1	0
10	Is web-based learning media feasible to use as learning media on national income material?	1	0
Positive Answer		90%	
Negative Answer		10%	

By the questionnaire, it was shown that the teachers gave a positive response equal to 90%. Then, negative responses by 10%. Percentage of the response was obtained by YES or NO answers on questionnaire. Based on the percentage of responses indicate that web-based learning is well used as a learning media. One of the advantages of web-based learning was that can encourage the students to be more active and independent in teaching and learning process [5].

H. The Student's Response Through Learning Media

The student's response to web-based learning media was obtained based on the student's answer when the research was conducted. The questionnaire student responses to web-based learning media were divided into two classes. Firstly, XII IPS 1 was act as control class and XI IPS 2 was an experimental class.

The students response can be seen in Table V.

TABLEV. TABLE RESPONSE OF WEB-BASED LEARNING MEDIA

Number	Question	Teacher's Answer	
		YES	NOT
1	Do you think national income material difficult to understand?	26	26
2	Is explanation using web-based learning clear?	44	8
3	Is web-based learning media easy to use	46	6

	compared to other media?		
4	Does the appearance of web-based learning media draw your attention to learn?	44	8
5	Are you happy using web-based learning media on national income material?	51	1
6	Does web-based learning media motivates you to focus on national income material?	45	7
7	Does having web-based learning media make you better to understand national income material?	48	4
8	Does having web-based learning media make you easier to remember national income material?	46	6
Positive Answer		84,14%	
Negative Answer		15,9%	

The percentage of positive answer students of 84,14% and negative answer students of 15,9%. Percentage of the response was obtained by YES or NO answers on questionnaire. The percentage showed that web-based learning media is excellent as learning media. Learning process is not physical media such as book. Learning process using digital data could decode through computer and smartphone. Using web-based learning media could help people to study anywhere, any time, and anything [5].

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