Research Article

The Development 0f Digital Module through Exe Application-Based to Improve Learners Attraction and Learning Outcomes of Indonesia History

Mohamad Na'im and Sumardi

History Education, Faculty of Educator Training and Education University of Jember

Abstract Historical learning materials characterized diakronik and einmalig that engage the past events to stimulate learners' attraction, so that it was developed digital module. This study aimed to produce a digital module through eXe application based for Indonesia History subject, especially for theEleventh Grade Learners, to improve learners' attraction and learning outcomes of History subject. The design of development employed ASSURE Model consisting of (1)analyse learner characteristic, (2) state performance objective, (3) select methods, media, and materials, (4) utilize materials, (5) requires learner participation, and (6) evaluate. This study was executed at State-owned Madrasah Aliyah of Jember District consists of MAN 1, MAN 2 and MAN 3 Jember. The results of expert validation were: (1) 78,3% for content means that the product is good qualification, (2) 80% for design product means that the product is good qualification, and 90% for media means that the product is very good qualification. The result of micro empirical validation for the first users was 88% categorized good qualification product. The product attraction was got 88,7% from the second users categorized very attractive. Meanwhile, the result of macro empirical validation was 86,8% categorized very attractive. There were improvement of learners attraction on History learning, precisely 44,83% of the learners said that History learning was very attractive, and 55,17% of the learners said that it was attractive. The achievement of learning outcomes was from 64% to 100%. It can be concluded that the development of digital modul through eXe application based can improve learners' attraction and learning outcomes of History subject.

Keywords: Digital Module, Learning Outcomes.

INTRODUCTION

Educator must have skills to develop learning materials that are arranged based on the learners' characters and needs, such as developing module. It is aimed to guide the learners autonomous learning (Depdiknas, 2004). A module is a teaching material that is arranged systematically with easily language understood by learners according to the level of knowledge and psychological maturity, and they can learn autonomously with limited guidelines from the educator (Meyer, 1978; Prastowo,2014). Historical learning materials characterized *diakronik* and *einmalig* that engage the past events to stimulate learners' attraction, so that it was developed digital module. The indicators for learners attraction was used by adopting from attractive theory of Ortlied (2014). The characteristics of attraction based on Ortlieb (2014) were attention, commitment, involvement, reward, and motivation.

A module can be effective if it has the following criteria, namely (1) Self Instruction, (2) Self Contained, (3) Stand Alone, (4) Adaptive, and (5) User Friendly, (Widodo, 2008:50). Based on the criteria, it showed that a module as a teaching material will be as effective as teaching by meeting. It depends on the process of the development. The good module writers should write write as if they are teaching a topic through writing.

The demands of learning in this time have required learning

by learnercentered learning approach and facilitated by technology, so that it produces quality learning. Learner-centered instruction is an instructional approach in which learners influence the content, activities, materials, and pace of learning (Froyd. J & Simpson. N, 2010:1). This approach stands the learners as the centre of learning process. Educators give opportunity for learners to autonomous learning so the learning process can run effective and efficient. The development of information technology has enabled educators to be able to use it as an information center for learners, so they are not only dependent on educators to improve their learning. One of them is changing teaching materials presentation, in this case printed module becomes digital module.

Historical learning materials are a sequences of events happened in the past and it will not happen again. In historical learning, learners also face the facts that it can not be observed directly in the classroom because it is different from natural science (Kochhar, 2009:14). Hence, it is neede stimulation to cover historical learning materials attractively that can projects the past events into the presence of the learners, one of them was developing digital module.

In the facts, the teaching materials of learners on the subjects of History of Indonesia are limited on learners' worksheets and textbooks. According to result of data collection through

questionnaire, it was distributed to educators on Stated Madrasah Aliyah in Jember Regency that drawn 85% of teaching materials used were limited on learners' worksheets and textbooks. These learners' worksheets and textbooks were written by authors/publishers. Moreover, it also got the information that was the lack of utilization of technology in the process of learning History. Based on the questionnaire of attractiveness distributed to the learners on Stated Madrasah Aliyahin Jember Regency obtained the information that 70% of learners have a low attractive to the learning history. Learners asked to do not only use both learners' worksheets and textbooks. However, it must be develop innovation in learning of history, such the utilization of technology so it can be more attractive.

Based on the questionnaire distributed to the educators and learners, it showed that the books used for learning of Indonesia History were learners' worksheets and textbooks. The learners also said that the books were not attractive for learning of history. In addition, the lack of utilization of technology was in the process of history learning. Consequently, it was needed to developing a module that can improve learners' attraction toward learning of history. One of the ways was developing digital module.

According to identification of the problems that have elaborated previously, it was needed to develop digital module with a certain quality and innovative for learners. Accordingly, the researchers were motivated to conduct this development research.

The problems of this study were (1) historical learning materials that was related to past events caused the learners less interested in learning of history so it was needed learning materials to support learners, (2) the learning materials used by the learners were learners' worksheets and textbooks, (3) the educators were less exploit advances in information technology in the teaching of history.

To surmount the problems, it was done by developing Digital Module through eXe(E-learning XHTML Editor) application based that validated and appropriate to used in teaching and learning process. These problems of the study were elaborated in the following:

1. How do the validation results digital module througheXe (E-learning XHTML Editor) application-based on the subjects of History of Grade XI Madrasah Aliyah in Jember Regency?
2. How do the level of attractiveness on digital module througheXe (E-learning XHTML Editor) application-based on the subjects of History of Grade XI Madrasah Aliyah in Jember Regency?
3. Do digital module througheXe (E-learning XHTML Editor) application-based to improve learners attractiveness on the subjects of History of Grade XI Madrasah Aliyah in Jember Regency?
4. Do digital module through eXe (E-learning XHTML Editor) application-based on the subjects of History of Grade XI Madrasah Aliyah in Jember Regency to make teaching and learning effectively?

The Aim of this Study

The aim of this study was to produce a validated and approprite learning materials in the form of digital module througheXe (E-learning XHTML Editor) application-based on the subjects of History of Grade XI Madrasah Aliyah, specifically on "Dutch Military Aggression". By conducting this study, it is expected to improve learners' attraction on the subject of History, help learners' autonomous learning, and achieve the minimal standard score so that learning of Indonesia History can be effective.

Specification of the Product

The product that produced in this study was digital module through eXe (E-learning XHTML Editor) application-based for the subjects of History of Grade XI. This digital module focused on sub material about "Dutch Military Aggression". The specification of digital module covered (1) Pictures, (2) Videos, (3) Maps, (4) Link to document, and (5) Interactive questions. Additionally, a series of digital module covered (1) title, (2) preface, (3) table of contents, (4) competences, (5) learning objectives, (6) instructions for module usage, (7) material description, (8) summary, (9)) feedback, (11) key answers, (12) glossary, and (13) bibliography.

The Importance of Development

This development research was expected to have advantages, to be precise (1) the development of digital module through eXe application-based is as the main materials for learners to improve the quality of learning of history, (2) the development of digital module through eXe application-based can improve learners attraction on learning of history, (3) the development of digital module through eXe application-based can support teaching and learning process effectively, and (4) the development of digital module through eXe application-based can be used by the future researchers.

Assumption and Limitation of the Study

Assumption

Digital module on the subject of History can be the alternative for the educators on teaching history as the variation of leaning materials used;

Developing digital module on the subject of Indonesian History for Grade XI Senior High School/Madrasah Aliyah deployed ASSURE Model that consist of six stages, namely (1) Analyse Learner Characteristic, (2) State Performance Objective, (3) Select Methods, Media, And Materials, (4) Utilize Materials, (5) Requires Learner Participation, and (6) Evaluate And Revise.

Digital module was arranged systematically by using ASSURE Model of Development to achievev the learning outcomes.

RESEARCH METHOD

This study was Development Study in which develop digital module through eXe(E-learning XHTML Editor) application-based. It employed ASSURE Model by Sharon Smaldino, et al (2005). The procedures in this study were (1) Analyse Learner Characteristic, (2) State Performance Objective, (3) Select Methods, Media, And Materials, (4) Utilize Materials, (5) Requires Learner Participation, and (6) Evaluate And Revise. This module was devoted to Learners of Grade XI of Stated Madrasah Aliyah at Jember Regency.

Procedure of Development Research

The procedures of his study used ASSURE Model. There were six procedures by this model. The procedures elaborate in the following picture.
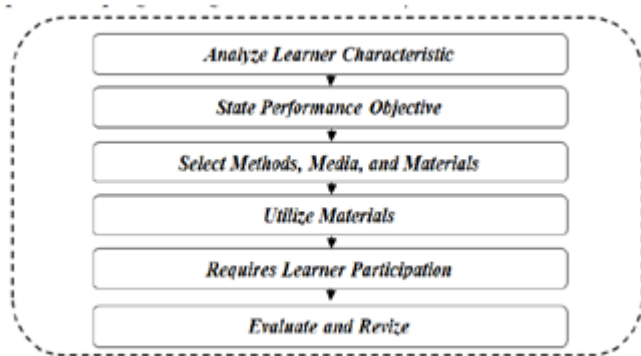
Picture 1. Development Research Procedures of ASSURE Model adapted from Smaldino et al (2005:49)

Data Collection Method

Thedata collection methods used in this study were that (1) documentations were the data in the form of document to record all the activities related to the stages of developing the materials, (2) interviews mean the process of gathering information by asking educators and learners orally, (3) questionnaires were designed to collect data related to needs analysis of learning materials, expert validation, and empirical validation about the product developed, and (4) test was used to save the learners learning outcomes covering pre-test and post-test.

Data Analysis Method

The data analysis methods in this study were qualitative and quantitative analysis. Qualitative analysis was used to gather data from interviews, questionnaires, and suggestion from expert validators. Next, the data were analysed by descriptive of qualitative and quantitative.

1. Data Analysis Method of Expert Validation
Expert of design and media were involved to measure the digital modul content of eXe application-based by using questionnaires. Data analysis method used this following formula:

Notes:

P	: Percentage
$\sum x$	: A number of participants
$\sum xi$	: A number of ideal score of each item
100%	: Constanta (Arikunto, 2008:216)

$$P = \frac{\sum x}{\sum |xi} \times 100\%$$

2. Data Analysis Method of Attraction Level

Data Analysis Method of Attraction Level was conducted to measure how attract the digital module developed. The data related to learners attraction on the module were analyzed by using this following formula:

$$TK = \frac{Score\ Obtained}{Max\ Score} \times 100\%$$

3. Effectiveness of Data Analysis Method
The data of the effectiveness used digital module were gathered from pre-test and post-testthat were distributed to learners after and before they used the module on learning of history. Data were analysed by using this following formula:

$$\bar{X} = \frac{\sum X}{N}$$

Notes:
$\bar{X}$: Mean

$\sum x$: A score number of all participants
N : A number of participants (Ary, D., Jacobs, L.C & Sorensen, C., 2009; 108)

The mean score result of pre-test and post-test of learners using developed digital module were used to measure the effectiveness of learning Indonesian History by using relative effectiveness formula. The following formula is to measure relative effectiveness.

$$ER = \frac{MX_2 - MX_1}{\left(\frac{MX_2 + MX_1}{2}\right)} \times 100\%$$

Notes:

ER : relative effectiveness

MX1 : Mean of pre test

MX2 : Mean of post-test(Masyhud, 2014; Steel, R.GD & James H.F, 1980)

FINDINGS AND DISCUSSION

Sequences of Development Process

This following is the sequences of developing digital module through eXe(E-learning XHTML Editor) application-basedon

the subjects of History of Grade XI Madrasah Aliyah in Jember Regency by employing ASSURE Model (Smaldino et al,2005).

1. Analyse Learner Characteristic

The analyses of learners characters covered general characters, learning style, and initial ability. In this phase, interviews and distributing questionnaires were done for learners to gather learners characteristics. Based on interviews result, the result of character analyses showed that 16-17 years old of students had background and sozial economic level, 25% of them was in high qualification, 70% was in middle qualification, and 5% was in low qualification. Students were more interested on innovative teaching and learning process by utilazing technology, so they was more attrative on the learning of history. Generally, their initial abilities of Grade X1 students had sufficient background knowledge of Indonesia History that they have got from their previous level. Additionally, according to questionnaires, it revealed that 82% of students tended to learning by visual. Therefore, the developed digital module was provided pictures, maps, and video to support their visual learning.

By reviewing the result of interviews and questionnaires given to educators and students, the use of computer, as the medium fo developing the product of eXe application-based, was chosen. Through the utilization of eXe applications, historical material can be projected back through video and pictures components. Thus, it might be to improve students' attraction on the learning of history effective and efficient.

2. State Performance Objective

The formulation of performance objectives of Indonesian History learning was done based on core competences and basic competences. This phase was aimed to formulate basic competences used, indicators, and performance objectives achieved by students after they used digital module. This formulation was arranged by ABCD formulation (Audience, Behaviour, Condition, Degree).

3. Select Methods, Media, and Materials

The next phase was selecting methods, media, and materials to be developed. The first was methods selected. The method that was used on the learning scenario for digital module was discovering method. The second was media selected that was chosen eXe(E-learning XHTML Editor)application and a set of computer to operate the module. Third was material selected which was based on core competences and basic competences of 2013 curriculum of Grade XI of senior high school students.

4. Utilize Materials

This phase consisted of some activities, to be precise (1) preview material, (2) prepare the materials, (3) prepare the environment, (4) prepare the learners (Smaldino,et al, 2005:61-63). Preview materials covered expert validations and user reviews. The expert validation was done on the first draft,

such (1) content validation, (2) design validation, and (3) media validation. After the first draft was done, and then the product was revised by the researcher based on the validator suggested.

The next step was user reviews that consisted of the first review and the second review. The educators of Grade XI students of MAN 1, MAN 2 dan MAN 3 Jember were involved. The assessment of the first review used questionnaires and comments to get the educators point of views about the product. Then, the second review involved the students of Grade XI Social Science as the users.

The user reviews were done to review the digital module that would be used. The equipments and learning materials as well environments were supported for the learning of Indonesian History. After this phase was done, the next step was Requires Learner Participation through empirical validation.

5. Requires Learner Participation

The next phase was empirical validation. The learners of Grade XI IPS 3 MAN 1, MAN 2 dan MAN 3 Jember were involved in this validation. In this phase, the learners did the learning of history through the module autonomously. To gather the information needed, questionnaires for learners' attraction were distributed. Moreover, pre-test and post-test were conducted to know the effectiveness of digital module.

6. Evaluate and Revise

Last phase was evaluation. After the module was revised, the product was ready to use. To convince the readers related to the module, summative evaluation was conducted. This evaluation was directed to gather objective data about the application used.

Presentation, Data Analysis, and Revision of Product Development

This phase provided presentation and analyses of assessment result and response of the experts and users. The experts were content expert, design expert, and media expert. In addition, the product try out were users testings and field testings.

1. Expert Validation

Expert validations phase was conducted by three validators, namely content expert validator, design expert validator, and media expert validator. These validators conducted te assessment to assess the level of appropriateness of the product developed.

a) Content Validation

The content expert validator focused on the content materials of the learning of Indonesian History. He assessed the digital module. The data analyses result of questionnaire showed 78%. It meant that the product developed was good qualification. Based on comments and suggestion from the expert, he suggested that (1) grammar and punctuation used should be revised, (2) diction used also should be revised, (3)

there were misstyping in the product.

b) Design Validation

The digital module developed was assessed on design of product. It was related to the design and the criteria of good product and the appropriateness of product for the teaching and learning process. The data analysis result of questionnaire from the expert drew 80% that meant the product developed was good qualification. He also gave comments and suggestion that (1) feedback forms should be provided, (2) the chronology of materials should be drawn in schematic, (3) the manual users should be added in every section of learning, and (4) there were some misstyping.

c) Media Validation

This product developed was assesed from media aspect. It was related to the media that used through eXe(E-learning XHTML Editor) application. The expert of media was responsible to asses the module. According to data analysis result of questionnares, it proved 90%. It meant that the product was very good qualification. To make the product more complete, the expert gave comments and suggestions, such (1) it should be added sufficient space for pictures and texts, and (2) the size of video should be bigger.

Based on suggestions and comments from the expert, it could be concluded that digital module developed was ready and appropriate to use in the teaching and learning process of Indonesian History.

2. Product Try Out

Product try out was conducted by twice, precisely (1) users testing, and field testing. This try out conducted to know the level of attractiveness and effectiveness of digital modul.

a) User Testings

The user testing refered to the users of digital module developed. It was divided into (1) the first user was educators, and the second user was students.

1) The First User Testing
The first user testing involved the Grade XI educators who taught subject of Indonesian History, such MAN 1, MAN 2 dan MAN 3 Jember. The evaluation was assesed by questionnaires and response from the educators. The data analysis result of questionnaires and responses from the educators showed 88%. It meant that the product developed was very good qualification. There were comments and suggestions to the product appropriateness, to be precise (1) there were som misstyping, and (2) every section of materials should be added maps.

2) The Second User Testing
The second user testing involved the Grade XI students of Social Science 3 at MAN 1, MAN 2, and MAN 3 Jember as the participants. This testing was conducted to know the level of attractiveness and responses from the students about the digital module developed through questionnaire.

The result of the second user testing showed that the module could improve the students attractiveness as 88,7%. It meant that it was so attractive. To make the product improvement, there were comments and suggestions from the second users, precisely, (1) the explanation in the materials should be succintly, (2) the use of video should be added more, and (3) language use should be enhanced.

b) Empirical Validation

The students of Social Science 3 of MAN 1, MAN 2, and MAN 3 Jember were involved on empirical validation. This validation was conducted to know the students' responses related to the product developed. The students evaluated the product by using questionnaire of attractiveness. It was gathered as 86,8% that meant the product was very attractive.

This empirical validation was also conducted to know the effectiveness of digital module. The effectiveness of the product was drawn by pre-test and post-test. The score ofpre-test and post-test obtained would be compared with using the ER formula to determine the relative effectiveness of the developed product.

The teaching and learning process of Indonesian History was used on the digital module developed that showed high effectiveness. The learning outcomes result of pre-test and post-test of the students knew from mean score of empirical validation as 44,14 for pre-test and 93,1 for post-test.

The result of empirical validation was 71,36% for realactive effectiveness. It meant that it was high effectiveness for the teaching and learning process of Indonesian History. Based on the result, comments and suggestions was gathered, to be precise (1) the sizes of fonts should be bigger and there were some misstyping, and (2) glossarium was incomplete.

CONCLUSION AND SUGGESTION

Conclusion

All in all, based on the results of data analysis and discussion of the process and the results of the development of eXe application-based digital module on the subjects History class XI SMA / MA can be concluded as follow:

1. The result of expert validation: the content was 78,3% that meant the product had good qualification. 80% for design meant that the product was good qualification. For the media, it was 90% that meant the product was very good qualification. Thus, the digital product developed have been achieved the students' needs in the teaching and learning process of Indonesian History.
2. The product attractiveness was 88,7% from the users that meant was very attractive. In addition, field testing result showed 86,8% categorized very attractive.
3. The digital module developed was attractive learning sources to be used in teaching and learning process of Indonesia History, and it could attract the students involving in the teaching and learning process.

4. The digital module developed was the learning sources that could be improve the effectiveness of the learning of History.

Suggestion

According to the result of product try out, there were some suggestion for the utilization of digital module: (1) the teaching and learning process by using digital module is based on constructivism and students center learning, (b) the students are expected to learn autonomously using digital module, (c) the educators are expected to set the classroom more innovative, creative, and fun by providing various learning materials and teaching methods.

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