Development of Digital Module Using Collaborative Learning Approach

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ABSTRACT

Research and development aims to produce a product in the form of digital module development media using a collaborative learning approach which is applied to the Study Material Development Course, Department of Educational Technology, State University of Malang. Research and Development (R&D) is a research method used to produce multimedia products. With the application of digital module media as an addition to the learning of learning materials development courses, media is an addition, which means that students are free to choose to use the material or not. In this case, there is no requirement for students to access study materials. The results of the product feasibility test that have been tested on media experts, material experts and students get a positive and proper response. so that it can be concluded that the digital module media using a collaborative learning approach in the course of developing learning materials is appropriate to be used as an addition to material in learning. the existence of digital module media using a collaborative learning approach provides convenience in learning, motivates students to learn and displays interesting media for students.

Keywords: *digital module, Edmodo, Collaborative learning.*

1. INTRODUCTION

The rapid development of knowledge and technology brings progress in all fields. Currently, we have entered a period of society called society 4.0, the development of information technology which has an impact on changes in all aspects of life, one of which is in the field of education. Digital technology is used as a learning medium in carrying out learning and teaching activities (D. Kurniawan et al, 2019). The government continues to improve the quality of education, one of which is the 2013 curriculum which focuses on student-centered learning. (Nurdyansyah & Fahyuni, 2016). The development of the 2013 curriculum is due to the fact that in the era of the 21st century, communication technology is developing so rapidly, so from the world of education it is felt that it is experiencing shifts and changes. Education Communication skills are skills in expressing new thoughts, information, ideas or knowledge, either in written or oral form. (Zubaidah, 2018).

In the Department of Educational Technology, there are courses on the development of learning materials, courses on the development of learning materials which include studying the development of the content of learning materials with the learning environment, competencies, learning objectives and producing appropriate learning materials according to learning needs and learning characteristics (printed and non-printed materials). The lecturer in charge of the study material development course said that during the learning process there were media used in the form of ppt (power point) media and printed books using the lecture method which only explained verbally, besides that the lecturer also said that at this time, lecturers needed media that could used regularly considering that lecturers do not only teach and of course, making complete media takes a long time. From this, we need media that can add material that can increase student interest in attending lectures. (Nurrita, 2018).

(Susanto & Akmal, 2019) Said that products developed from information technology currently provide alternatives as learning media in digital form. As is the case with digital modules. The digital module allows students not only to involve their sense of hearing, but also their sense of sight. The more senses that can be used to receive information, the more it is remembered

and understood (Hutahaean, 2019). Experts have proven that there is a prominent difference between the learning outcomes that the senses of sight and hearing go through (Mashari & Adi, 2021). The advantages of digital modules in the learning process are the orientation of lecture participants to organize lecture participants to study, guide and investigate individually and in groups, develop and present work, as well as analyze and evaluate the process of solving each problem (Kharida et al., 2009). The development of digital modules that can be combined with a collaborative learning approach is intended to build and develop students' knowledge in actualizing their thinking through a collaborative approach that is applied using the Edmodo platform to provide ideas or responses through interactions between students with different views aimed at increasing the understanding of each student. in responding to material in the form of videos, images and text packaged in digital modules.

Based on research conducted by (Sidiq, 2020) in his research entitled "Development of Android-Based Interactive E-Modules in Teaching and Learning Strategy Courses" meets the criteria for proper and good use in teaching history teaching and learning strategy courses in the history education department, trial each as much as 63% for small trials, 66% for medium trials, and 63% for large trials. The developed Android-based interactive e-module that has been developed has achieved effectiveness so that it can be used to improve student learning outcomes in the learning process.

Based on the results of previous research conducted by (Retty Miraza, 2018) entitled "Development of Edmodo-Based E-Learning Media with a Scientific Approach to Sound Wave Material" improving student learning outcomes using Edmodo-based e-learning media with a scientific approach to high school sound wave material class XII The result of the analysis of student perceptions as a whole has a score of 45.58 and is included in the very good category for the media aspect and a score of 20.02 is included in the very good category.

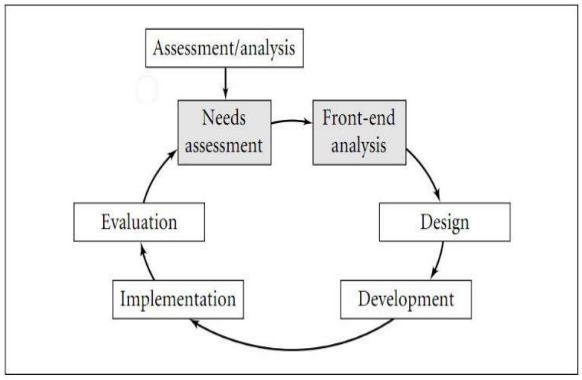
Furthermore, the results of another research conducted (Fitriasari et al., 2020) in his research entitled "online-based collaborative learning" in his research using Apticom's MOOCs Learning technology, google classroom and asthma can be used to support online collaborative learning processes online collaborative learning this is evidenced by the implementation of google classroom in learning evaluation courses and the Asmape application which is used in database courses, especially in group assignments to make scientific articles.

The digital module uses a collaborative learning approach. Products are designed, developed and packaged as effectively as possible, and do not cause students to feel bored. The digital module using a collaborative learning approach that is supported by technology can also have an effect on increasing collaboration and interaction between students so that it is used as a supplemental media, this product was developed for students majoring in educational technology in the course of developing learning materials. This development aims to produce media products in the form of appropriate digital collaborative modules, which display material, images, audio, video podcasts and by implementing the Edmodo platform with the aim of increasing understanding through discussion, exchanging ideas/ideas with each student in responding to the material presented. contained in the digital module by providing a sense of motivation, convenience, and student interest in learning.

2. METHOD

The research development model used is the Research & development model proposed by Lee & Owens, the reason for choosing the model for this development is more relevant and in line with the development of digital modules (Hakim et al., 2020). By reason of research and development there is a component that contains multimedia, Lee & Owens model in each step of development has a complete and clear step that can be simplified in the form of a chart as follows.

2. 1 Need Assessment



In the Need Assessment stage, face-to-face observations were made to students of educational technology at the State University of Malang and to lecturers in charge of online learning material development courses via WhatsApp. Where students said that during the learning process there were media used in the form of ppt (power point) media and printed books using the lecture method which only explained verbally, besides that the lecturer also said that at this time, lecturers needed media that could be used regularly considering that lecturers did not only teaching and of course making complete media takes quite a long time. In addition, the students who took the study material development course, from the statements of the ten students were almost the same, they said that the learning material development course was difficult and a lot of

people felt bored so that they were interested in learning the learning material development course.

2. 2 Front-End Analysis

Media digital module is intended for students majoring in educational technology in the course of development of learning materials. Product development is used as an addition to material, lecturers or students have the freedom to choose whether to use digital modules or not for certain materials. Subsequent analysis determines what should be submitted and which should not be submitted to the digital module which aims to adapt to actual needs and be able to overcome problems in the use of digital module products.

2. 3 Design

The next stage is the design stage or media planning to be produced. This stage covers the entire development of the digital module. There are several stages, namely preparing a schedule (schedule), determining media specifications (media specifications), content structure (content structure), then configuration control (configuration control). The design process includes the creation of images (infographics, main mapping), audio, and video podcasts and the use of the Edmodo platform as a collaborative learning approach.

2. 4 Development & Implementation

At this stage is development & implementation, the software used in developing digital modules is html5, the advantages of html5 software are support for video and audio content and also export results in the form of links and can be used using various devices (mobile phones/laptops) so that easily accessed when the digital module is used immediately, then assisted by Adobe Premiere software for video editing, Adobe Illustrator for image creation and Audacity for audio editing, furthermore, a series of text, image, audio, video and link formats that will later lead to the Edmodo platform can be accessed. assembled into one in the form of a digital module that can be used as material for learning in the course of developing learning materials. The next stage is implementation, this stage is to test the feasibility of material experts, media experts and students majoring in educational technology, Faculty of Education, Malang State University.

3. RESULTS

Data on product validation of digital module development using a collaborative learning approach in this learning material development course were obtained through the results of the validation assessment by media experts and material experts. Data on product validation of digital module development using a collaborative learning approach obtained in this development is obtained from the data collection instrument used in the development of digital modules in the form of a questionnaire. In digital module development research using a collaborative learning approach by using a closed questionnaire type, so that respondents or resource persons fill out limited questions and answer choices. In the implementation of the digital module product, the results are seen from the following table:

Table 1. Media Expert Review Results

Subject	Mean	Median	Mode	Percentage
of Media Experts	3,7	4	4	100%

Based on the response questionnaire to media experts, the percentage with positive responses is 100%, the percentage of SS responses 77%, the percentage of responses S is 23%, the mean is 3.7%, the median is 4 and the mode is 4. so that the responses from media experts on the development of digital modules using a collaborative learning approach can be concluded that they are suitable for use in learning.

Table 2. Responses by material experts

Subjects	Mean	Median	Mode	Percentage
of Material Experts	3.8	4	4	100%

Subsequent trials to material experts with the percentage of positive responses 100%, the percentage of SS responses 80% The percentage of S responses 20% means 3.8%, median 4, and mode 4. so that the responses from media experts on the development of digital modules using a collaborative learning approach can be concluded that they are suitable for use in learning.

Furthermore, the trial of digital module products involving 10 students of Educational Technology FIP UM. Based on the response analysis, students get an overall positive response percentage of 95% with a mean of 3.41, median 4, and mode 4 so it can be concluded that digital module media get a positive response and digital module media is suitable for use in learning material development courses.

Table 3. Student Responses

Subject	Mean	Median	Mode	Percentage
10 Students	3,41	4	4	95%

4. DISCUSSION

development of digital module media using a collaborative learning approach in the course of developing learning materials has been through a feasibility test to media experts, offline materials experts and tested to 10 students majoring in Educational Technology, State University of Malang online using the Google Form Platform to fill out a questionnaire, and a link format to access digital modules by sharing or sharing via WhatsApp Groups with students majoring in educational technology.

The results of the feasibility test for digital modules using a collaborative learning approach in the course of developing learning materials to media experts get a positive response, the results of the feasibility test to media experts get a 100% positive response percentage response, 80% SS response percentage, 20% S response percentage, mean 3,8, median 4, and mode 4 so that it can be concluded that the digital module is suitable for use in the learning material development course, with the advice given by media experts, namely optimizing the visual cover design. The next stage is the feasibility test for material experts, receiving positive responses, positive responses 100%, percentage of SS responses 77%, percentage S 23%, mean 3.7, median 4, and mode 4, it can be concluded that digital module media is feasible to use with suggestions which is given to material experts plus highlights on the title, illustration images and adds text material to the audio.

The next stage was the trial stage for 10 students majoring in educational technology at the State University of Malang with a total of 95% positive responses with a mean of 3.41, median 4, and mode 4 so that it can be concluded that digital module media got a positive response and digital module media was suitable for use in the eyes of the public. study material development courses by having a feasibility value and having the value of aspects of convenience, motivation and attractiveness.

5. CONCLUSION

development of digital modules using a collaborative learning approach in the course of developing learning materials can be a solution in overcoming obstacles or difficulties in learning. so that it can be an addition to knowledge through material presented in the form of digital modules that are economical, practical in providing space for students to be able to discuss, provide feedback and exchange ideas which are done online so that it is easy to use anywhere and can be used as independent learning. So, based on the results that have been carried out, it shows that digital modules using a collaborative learning approach in the course of developing learning materials provide convenience in learning, motivate students to learn, display interesting media for students.

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