Development of E-learning-based Social Studies Learning Media for Class VII Semester II Junior High Schools

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ABSTRACT

This study aims to determine the validity, practicality, and effectiveness of the development of E-Learning-based IPS learning media for Class VII Semester II SMP. This research was a Research and Development. This research was conducted at SMPN 1 Mandau, Bengkalis Regency. The type of data collected in this study was qualitative data obtained from interviews, observations and expert validity. The assessment of students was carried out through a questionnaire. The object of research in this study was E-Learning-based IPS Learning Media for Class VII Semester II Junior High School using Chamilo 2019 software. The data analysis used qualitative descriptive analysis and quantitative descriptive statistical analysis. The qualitative descriptive analysis technique was used to process data from the test results from media experts and material experts, while quantitative descriptive statistical analysis techniques were used for media assessment by 30 students with the help of SPSS. The results of the study state that e-learning-based social studies learning media are declared valid by media experts and material experts, with a practical level of media use that is practical or easy to use and the effectiveness of appropriate media in learning activities, which can save time and facilitate the preparation of teaching materials.

1. Introduction

One of the main subjects in the 2013 curriculum for junior high school education is IPS (Social Sciences). Social studies lessons are an integration of four subjects, namely geography, economics, sociology and history combined with the concept of space and the interaction between spaces and their effects on human life. IPS is a lesson that is comprehensive enough to respond to and solve socio-social problems in Indonesia, according to the level of ability and level of development of students. As a subject in schools, social studies should be more educational

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than academic, Soemantri (2001). So complex is the scope of the material contained in social studies subjects, of course as educators need supporting technology both in making teaching materials and in its application in class.

The use of technology is essentially aimed at facilitating human work in everyday life. The development of the digital world in education also has a significant effect on the interaction patterns of teachers and students. In the 21st century learning is known as ICT literacy (Information and Communication Technologies). ICT literacy is the ability to use technology in the learning process to achieve students' thinking and learning skills. The activities that must be prepared by educators are those that provide opportunities for students to use computer technology in learning so that they can improve the academic achievement of students, Bens (2014). Therefore, it is necessary to innovate teachers as educators in selecting and developing the media used to attract the attention of students, Muhammad (2010).

Learning media development is an activity that is integrated with the preparation of other learning documents such as curriculum, syllabus and lesson plans (RPP). Thus, it is not only the curriculum and learning tools that need to be developed, but also learning media. This is in accordance with the opinion of Asyhar (2012). Learning media are anything that can be used to transmit messages from sender to message recipient, Silahuddin (2015).

The function of learning media is as a teaching aid that influences the conditions and environment that is arranged and created by the teacher, Suryani (2018). The existence of learning media as a tool in the learning process is a fact that cannot be denied. The purpose of using e-learning in the learning system is to expand access to education in the wider community, and in order to improve the quality of learning, Suharyanto (2016). Another opinion also states that the use of appropriate learning media will affect student learning motivation, Wayan (2018).

Teachers as messengers have great importance to facilitate their duties in conveying messages or learning materials to students. Without media, learning material will be difficult for students to digest and understand, especially if the learning material that must be delivered is complex and complex. For this reason, the use of media absolutely must be done so that the material can be digested properly by students effectively and efficiently, Signe (2015).

The use of information and communication technology for the learning process in education can be implemented in terms of using e-learning. Various information and communication technology applications are available in open source form and can be downloaded for free, such as: Sevima Edlink, Moodle, Google Classroom, Edmodo, Schoology and Chamilo. The use of this software, of course, must use a wifi / internet network that is tailored to the characteristics of students, the school environment and the needs of educators. In other words, learning can be carried out without the ties of time and place, Mahendra (2010).
All learning activities by utilizing electronic media that can help humans to learn is an understanding of e-learning. This is in accordance with the opinion of Wahyuningsih (2017). While the online learning process can be held in various ways, such as: (1) Conventional learning processes (more face to face meetings) with additional learning through interactive media via the internet or using interactive computer graphics. (2) With mixed methods, that is, most of the learning is done via computer, but still requires face to face meetings for tutorial purposes or discussing teaching materials. (3) The whole learning method is only done online, this method is not found at all face to face meetings, Hertanto (2016).

Electronic learning (e-learning) has several benefits, including:

1. Increase learning interactions between students and teachers or instructors (enhance interactivity). If designed carefully, electronic learning can increase learning interactions between students and teachers or instructors between students, as well as between students and learning materials (enhance interactivity). Unlike the case with conventional learning, not all students in conventional learning activities can dare or have the opportunity to ask questions or express their opinions in a discussion.

2. Allows for learning interactions from anywhere and anytime (time and place flexibility). Given that learning resources have been packaged electronically and are available for access to students via the internet, students can interact with these learning resources anytime and from anywhere. Likewise with learning activity assignments, it can be submitted to the teacher / lecturer / instructor once done, no need to wait until there is an appointment to meet with the lecturer / instructor.

3. Reaching out to students in a broad range (potential to reach a global audience). With the flexibility of time and place, the number of students who can be reached through electronic learning activities is increasing or expanding. Space and place and time are no longer obstacles. Anyone, anywhere, anytime, one can learn. Interaction with learning resources is done via the internet. Learning opportunities are really wide open for anyone who needs them.

4. Make it easier to improve and store learning materials (easy updating of content as well as archivable capabilities). The facilities available in internet technology and a variety of developing software help facilitate the development of electronic learning materials. Likewise, the improvement or updating of learning materials in accordance with the demands of the development of scientific material can be done periodically and easily. In addition, improvements to the method of presenting learning materials can also be done, either based on feedback from students or on the results of the teacher / lecturer / instructor's assessment as the person in charge or the instructor of the learning material itself. Mahendra (2010)

The e-learning management system is divided into two systems, namely, a Content Management System (CMS) and a Learning Management System (LMS). CMS is a content-oriented website. The sophistication of each CMS content
depends on the CMS used, Rezki (2018). Based on the results of research conducted regarding the use of e-learning, it is stated that 30% of education is better, 40% less time, and 30% cheaper, Hamzah (2016).

Even though the Chamilo software is popular among lecturers and students, it is necessary to try to apply it among teachers and students, especially the Junior High School (SMP) level because so far only SMA and SMK have implemented it. Chamilo's LMS (Learning Management System) has its own advantages over other software, in addition to having varied, interactive menu options, online learning resources, and the availability of downloadable subject matter. Another study also said that Chamilo can make it easier and quickly build a portal in e-learning, Ramadhan (2016).

2. Methodology

This research was a Research and Development. Research and Development Methods were research methods used to produce certain products and test the effectiveness of these products. Products that were produced by this research and development include; teacher training materials, teaching materials, a set of behavioral goals, media materials, and management systems, Muhson (2011).

This research was conducted at SMPN 1 Mandau, Bengkalis Regency. The object of research in this study was e-learning based IPS learning media for Class VII Semester II SMP using the Chamilo 2019 software. The type of data collected in this study is qualitative data. Qualitative data were obtained from interviews, observations and expert validity. Qualitative data is used to validate development products in the form of suggestions and comments from the validator which will later be used as a reference for making improvements or revisions to the learning media developed, Sugiyono (2018). Assessment of learning media was carried out by 3 IT experts (media experts), 5 class VII social studies teachers (material experts), and 30 students.

The data collection technique was in the form of a questionnaire consisting of: (1) Questionnaire for material experts as seen from the aspects of learning design, material organization, evaluation or training and language. (2) Questionnaire for media experts in terms of software engineering, visual communication and media usefulness. (3) Questionnaires for students viewed from the aspects of instructional media design, software engineering and visual communication. The data analysis used was in the form of qualitative descriptive analysis and quantitative descriptive statistical analysis. The qualitative descriptive analysis technique was used to process data from the test results from media experts and material experts, while quantitative descriptive statistical analysis techniques were used for media assessment by 30 students with the help of SPSS. The questionnaire measurement scale used in this study is a Likert scale. The results of student questionnaires were used to determine the level of achievement of the feasibility of developing e-learning-based social studies learning media.
In this study, the development of social studies learning media for the seventh grade junior high school level used the Chamilo 2019 software by applying the ADDIE model developed by Dick and Carra (1996). The ADDIE model stands for Analyze, Design, Development, Implementation, and Evaluation. The stages of the ADDIE development model can be seen in Figure 1.

Figure 1. The Stages of the ADDIE Development Model

The development of e-learning learning media using the ADDIE model consists of several stages, including:

1. The analysis phase, which consists of: (a) examining the causes for the need for development (b) determining learning objectives (c) confirming potential users (d) identifying the required resources (e) determining potential delivery systems (f) developing management plans project.

2. Media design stage, which consists of: (a) determining Core Competencies, Basic Competencies and Indicators (b) making Flowcharts (c) compiling initial product drafts (d) designing e-learning drafts from word format using Chamilo 2019 software (e) creating a testing strategy.

3. Development stage, which consists of: (a) building content (b) selecting or developing supporting media (c) developing guides for students (d) developing guides for teachers (e) conducting expert validation (f) making formative revisions.

4. Implementation phase which consists of: (a) preparing the teacher (b) preparing students.

5. Evaluation Phase, which consists of: (a) determining evaluation criteria (b) choosing evaluation tools (c) conducting evaluations, Suryani (2018).

Observations made at SMPN 1 Mandau, have not found a teacher who applies e-learning in learning. Most teachers teach material using the lecture method with the main source coming from printed media in the form of textbooks, even though the equipment that supports learning is quite adequate, such as wifi, infocus, and computer labor. Based on the description that has been stated, this study aims to determine: (1) the validity of e-learning-based IPS learning media for class VII
SMP II semester (2) the level of practicality of e-learning-based IPS learning media for class VII SMP II semester (3) the effectiveness of the development of e-learning-based social studies learning media for class VII junior high school semester II.

3. Results and Discussion

The results of this study were in the form of E-learning-based social studies learning media for grade VII SMP using the Chamilo 2019 software which was developed using the ADDIE model (Analyze, Design, Development, Implementation and Evaluation). The following is an explanation of the steps taken in this research and development:

1. Analyze

Before entering the analysis stage, a preliminary study was conducted to collect data related to the problems faced in the VII grade social studies learning using a data collection method in the form of a questionnaire given to students. The results obtained were that the use of media in social studies learning was carried out by the teacher using graphic media in the form of pictures/photos, tables, graphics and powerpoints. Considering that in social studies there are four disciplines (Geography, History, Economics and Sociology), it is not appropriate if the learning process only uses graphic media.

The conclusion from the results of this preliminary study is that the use of social studies learning media for class VII still uses graphic media, so it is necessary to develop learning media in order to improve the quality and motivation in social studies learning, this is in accordance with the opinion of Maulida (2019). The development referred to here is the development of the initial media used by the teacher to be graphic towards e-learning based media. After obtaining the results of the preliminary study, then an analysis is carried out to describe the causes of the gap between the expected conditions and the reality in social studies learning, especially in the media developed.

2. Design

At this stage what learning designs are suitable for the development of students is carried out. This stage determines Core Competencies (KI), Basic Competencies (KD) and indicators, makes e-learning flowcharts, collects materials and pictures, chooses testing strategies and compiles tests. The flowchart in e-learning can be seen in Figure 2.
3. Development

At this stage, the procedures carried out are building content, selecting or developing supporting media, developing guides for students, developing guides for teachers, conducting expert validation, making formative revisions. The content referred to in this case is an important point to attract students during the knowledge construction process. The purpose of this procedure is to produce a learning plan that is in accordance with the theoretical approach used in compiling this e-learning.

Because this e-learning uses the Chamilo 2019 software, the content is built according to the standard product / standard that came with the software. For the initial display of e-learning, after we enter the web address, it can be seen in Figure 3.
Next, Login using the name and password provided. If as a student, it is necessary to register to follow the selected subject by clicking the course catalog menu. If as a teacher, you must first create subjects by clicking on the course menu, then select create subjects.

After finishing making the subjects, then the teacher starts filling in the material to be delivered and making practice questions. To test the content and material created, a validity test was carried out on the media being developed. The media validity test was carried out by media experts and material experts. There are 3 media experts, while 5 material experts are social studies teachers. From the results obtained in the form of suggestions and improvements. The next step is to conduct a small trial starting with 3 people, 8-20 people, and 32 people (1 permanent class). The results of the trial were improved before the trial stage was carried out for heterogeneous students.

4. Implementation

After the final product is finished, then enter the implementation stage. At this stage, 2 things are done, namely (a) preparing the teacher (b) preparing students. There are 7 teachers who help in this activity, consisting of 5 social studies teachers, 1 computer laboratory teacher, and 1 school operator. The teacher selection was based on the ability to operate a laptop / computer, have innovative learning media, and senior teachers.

There were 30 students prepared, 25 of whom were representatives from each class VII, and 5 students from other schools who were the head of the OSIS at their school. For students who come from other schools, it is enough to provide a web address along with a tutorial on how to use it, then they only work in their respective schools. This is done because there are different lesson schedules for each school, and it saves time in its management, considering that e-learning can be accessed anywhere, provided that you have an internet network.

After completing this learning activity, students fill out a questionnaire given by the teacher to find out their response to this e-learning learning media. There are 3 aspects in this assessment, namely: (1) aspects of learning design (2) aspects of software engineering (3) aspects of visual communication, with a total of 15 questions. The results of student assessment can be seen in Figure 4. Based on Figure 4, the results of students' assessments of e-learning-based social studies learning media using Chamilo 2019 software are categorized as very satisfying with an average of 79.34% obtained from the sum of the three aspects of learning media (learning design, software engineering, and visual communication).
In the aspect of instructional media design, students gave an assessment of the ease of material, discussion of questions, use of language, ease of doing questions and the suitability of questions with the material received a very good category of 84.5%. The next advantage of Chamilo 2019 is that it has a powerful platform. This is evidenced by the assessment of students in the software engineering aspect, which consists of how to operate Chamilo 2019 and media reliability, getting a very good category, namely 76.45%.

Furthermore, students’ assessment of the visual communication aspect consisting of clarity of writing, images and presentation methods in e-learning obtained a result of 77.08% with a very good category. According to the Indonesian Wikipedia, visual communication is a series of processes of conveying information or messages to other parties using depiction media that can only be read by the sense of sight. Visual communication combines art, symbols, typography, images, graphic design, illustrations, and color in its delivery. On the Chamilo 2019 display, there is clarity, both icons, letters, and colors so that it can make it easier for students to understand the message conveyed.

After the results of the student assessment are obtained, then there are suggestions regarding the learning material that students consider to be rather complicated and the need to add several learning videos. According to them, the complexity of the material is seen from the way the developer is presented in writing the subject matter. This is a difficult thing to do. Maybe one of the reasons is because they currently like something that is easy, fast, and not boring. They hope that the presentation of the material will be shortened and the learning videos are reproduced.

5. Evaluation

This stage aims to assess the quality of the media being developed. This stage produces an evaluation plan. The components in the evaluation plan include: (1) Summary of development objectives, data collection tools, time and subjects that are responsible for each level of evaluation. (2) A series of summative evaluation criteria (3) Evaluation tool. To get maximum results is not an easy thing, repairs
are made many times for the sake of perfection. The assessment of 30 students generally obtained good results. In this evaluation, questions and answers were also conducted to students regarding suggestions and input which would later become material for further research in the future. Based on the stages carried out and the results obtained from the students' assessment, it can be concluded that the e-learning-based social studies learning media is said to be valid and is in the very effective category.

A. The validity of e-learning based IPS learning media

To find out the validity of this media, the learning media must first be prepared. Selection of the right, innovative, and varied media will be able to attract students' interest in learning, this is in accordance with Mutia's opinion (2020). Making learning media using the ADDIE model has systematic and continuous stages. The first stage that is carried out is identifying what is the problem in this social studies learning. However, the scope of material taken is only material in the second semester because this material discusses economics. Students assess that the explanation of each material needs a touch of technology so that they can see directly and think about the actual situation. This is in accordance with research which states that website-based social studies learning using the ADDIE model is quite effective as a learning medium, Hamzah (2016).

After knowing what is the problem, then make a project plan what to develop. The results of this conclusion are continued to the stage of designing instructional media. In order to be more focused and focused, first it is necessary to design a product draft in the form of a flowchart. Then proceed with making a product, namely the development of social studies learning materials. The finished product certainly needs to be validated by various experts. Product testing for experts involves media experts and material experts. Media experts must be people who understand the technological devices used and know about e-learning. Meanwhile, material experts came from social studies teachers who had teaching experience for grade VII students. This is because they are just entering a stage of development which requires understanding and understanding in teaching and educating.

The results of the validation from media experts focused on indicators of media effectiveness and creativity, namely in the form of layout on the initial display, the use of letters and the addition of video on the initial display to make it more attractive. From these suggestions, then revisions are made. Because in this study using Chamilo 2019 software (not making your own software), there are some suggestions that cannot be implemented. Given that the software comes from the factory, of course, if we change it as you wish, it will affect the performance of the software. The complexity of coding is also an obstacle in doing so. Furthermore, the material expert also provides suggestions for improvements so that revisions are made although repeatedly until it is deemed good / appropriate according to the material experts.
From the assessment of media and material experts who said it was feasible to continue, then carried out several trials including one-to-one trials, small group trials and field trials. This is done to see the extent to which the product has been developed whether it has gone well or vice versa. The results obtained show that this product can be continued even though there are several problems such as the internet / wifi network that is not smooth. The weakness of e-learning using this internet network lies in how the signal quality is when using it.

The results of the assessment of the validity of e-learning-based social studies learning media using the Chamilo 2019 software were 84.5%. Furthermore, questions and answers were conducted regarding the obstacles faced in this trial, suggestions and input became notes for the evaluation stage. Based on this description, it can be concluded that e-learning-based social studies learning media are said to be valid.

**B. Practicality of e-learning based IPS learning media**

Practicality means the usability or practicality of the learning media used. To be able to produce e-learning that is attractive and desirable, there are three things that must be considered, namely: (1) simple / practical, (2) personal, and (3) precise. The system is simple (easy to use) for students to use technology with the existing menu. If students are able to operate e-learning easily and correctly, it can be said to be practical. The ease with which the panel provided will reduce the introduction of the e-learning system itself so that students' learning time can be streamlined for the learning process, not for learning using the e-learning system. Personal means that the teacher can interact well like a teacher who communicates with students in front of the class.

Chamilo 2019 has a menu that is practical in its use, can be used on computers / laptops and Android phones. During the validation of media experts, experiments were carried out on several electronic devices such as computers, laptops, Android phones / Smartphones, and tablets. The result can be operated on all devices. The assessment of students also proved that the operation of e-learning was very easy, as evidenced by a questionnaire distributed to 30 students with the results for the visual communication aspect amounting to 77.08%.

**C. The effectiveness of e-learning based IPS learning media**

According to the Big Indonesian Dictionary (KBBI), effectiveness is effectiveness, activeness, and the existence of conformity in an activity between someone carrying out a task with the goals to be achieved. The effectiveness referred to in this study means the creation of e-learning-based social studies learning products systematically which results in a paradigm shift from teacher centered / traditional learning to student centered learning, Hong (2014). This is in accordance with the goals of 21st century education which emphasize the mastery of technology in education. In the learning process using e-learning, effectiveness can be seen from the ongoing learning process and the achievement of learning objectives. In addition to saving time, having varied learning resources, students
are more skilled in mastering technology to face challenges in the future. In this study, the effectiveness of social studies e-learning media using Chamilo 2019 was obtained from students' assessment of 79.34% which was obtained from the sum of the three aspects of learning media (learning design, software engineering, and visual communication).

4. Conclusion

Based on the research that has been done, it can be concluded that the validity of social studies learning media based on e-learning using Chamilo 2019 software is declared valid by media experts and material experts, with the practical level of using this media considered practical / easy to operate. The effectiveness of the use of media is considered effective in social studies learning at the junior high school level, both in terms of time and in preparing subject matter, considering that Social Studies consists of 4 disciplines (Geography, History, Sociology, and Economics). In addition, this media is effectively applied in situations where face-to-face learning is not possible due to natural conditions or certain disease outbreaks.

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