DEVELOPMENT OF WEB-BASED LEARNING MEDIA

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Abstract. The purpose of this research is to design, create, and develop web-based learning media that utilizes the use of the internet in the form of Browser Based Training learning media in the form of CD (Compact Disk) to assist learning. The type of research used in this research is a prototype experiment, while the focus of the research is how to design, create, and test E-Learning learning media based on Training. In general, the educational criteria of this program are included in good criteria and in accordance with the applied curriculum.

Keywords: Learning Media, Browser-Based Training, Manual Transmission

INTRODUCTION

The current learning paradigm is still a very interesting thing for education circles. Learning is assessed as a measure of the success of a transfer of knowledge through a certain process or stage in a person's learning activities. The development of information and communication technology has brought enormous changes to the progress of the world of education. Along with these developments, learning methods have experienced many developments, both personal learning methods and teaching and learning processes. The form of the development of information technology applied in the world of education is E-Learning.

E-learning is one of the learning methods that is currently being developed by utilizing computers as learning media. E-learning learning provides an innovation that has a very large contribution to changes in the teaching and learning process, where the learning process is no longer just listening to material descriptions from teachers who seem boring but teaching materials can be visualized in various formats and forms that are more dynamic and interactive so that students will be more motivated to be involved in the teaching and learning process. Web Based Training is a form of E-Learning teaching material that requires a Web Browser to access it. In addition, Web Based Training also requires an internet network to be able to access it.

The advantage of Web Based Training is that everyone in the world can access it. However, Web Based Training also has drawbacks, namely the need for an internet connection which makes this learning media expensive. In addition, the speed in accessing the materials contained in the teaching materials is still lacking. In contrast to Web Based Training, Browser Based Training is also a 108 JOURNAL OF PTM VOLUME 9, NO. 2, DECEMBER 2009 ISSN:1412-1247 one form of E-learning teaching materials, according to Winastwan Gora S (2005: 21), Browser Based Training is a term used to describe teaching materials that require a Web Browser to access it, but it doesn't work. on the internet network such as Web Based Training, but using CD-ROM media. Browser Based Training is a term used to describe teaching materials that require a Web Browser to access it, but it doesn't

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Utilization of multimedia as a medium of learning in this case Browser Based Training can overcome several obstacles for students who have low abstraction power. Packaging learning materials in the form of audio-visual shows is able to size 90% of the channels for messages or information to enter the human psyche, namely through the eyes and ears. Audio visual media is able to make people generally remember 50% of what they see even though it is only shown once. Or in general people will remember 85% of what they saw from an impression 3 hours later, and 65% after 3 days later. Content Management System or commonly abbreviated as CMS is a method of managing content. The content can be in the form of text, sound, images, videos, animations and other applications that are stored in a database so that it is easy to manage.

METHOD

This research is included in the type of prototype experimental research which means a study in which researchers make plans, determine types, characteristics with predictions based on theory and then reviewed. 1. Figure 1. Research flow The data collection methods used in this study were questionnaires, documentation, and interviews. Each method used is shared for indicators. In the questionnaire method, the indicators to be studied are: program operation, response to users, program security, problem handling, coloring, words and language, graphics, animation and video, and sound. In the documentation method, the indicators to be studied are; content, words and language, hypertext, menu buttons and icons, and program facilities. In the interview method, the indicators to be studied are; learning, curriculum, content, interaction, feedback, and problem solving. Data analysis was carried out in several stages, namely; perform data classification, make scoring, calculate the score of each variable using percentages, after obtaining the percentage of each variable the data is transformed into qualitative data.

RESEARCH RESULTS

Program Display The display of learning media on the front page (stage 1) the user (user) is presented with a "welcome" greeting consisting of an understanding of ELearning and the advantages of this learning model. The goal is that users who are just learning to use this learning model understand the advantages offered by this learning model compared to other learning models. Not only that, the user is also facilitated with a narrative that will explain in its entirety about this learning model. So that it seems as if the user is welcomed when they start entering this learning media.

DISCUSSION

Website is a collection of web pages, which are summarized in a domain or subdomain, whose place is on the World Wide Web (WWW) on the Internet. corners of the world and connected into one network through a network called the internet. Nearly 80% of internet services are websites. The main factor that makes the website grow so fast is because the dissemination of information through the website is very fast and covers a wide area

(worldwide), not limited by distance and time. Besides that, there is also a trend to create a personal website or blog. The very rapid development has created a new world that we often call the virtual world. Through the virtual world we can do any activity like the real world that we face everyday. For example, if we want to buy something, we can access the e-22 website http://www.kamusilmiah.com/it/sejarah-world-wide-web 18 19 commerce then make online buying and selling transactions and the goods we buy will arrive in our house. Likewise, if you want to study, you just need to register on websites that provide e-learning services.

The lecture process can be done online even though it is limited by distance. Even with the website, we can order plane tickets, order food, banking transactions and so on. All can be served by the internet through a medium called a website.23 Along with the rapid development of information technology, the website has also experienced significant developments. In grouping the types of websites, it is more directed at the function, nature and programming language used. The websites according to their nature are: a. A dynamic website is a website that provides content that changes at any time.

For example news websites, such as detik.com, kompas.com, and so on. b. A static website is a website whose content is rarely changed. For example, the organization's profile website.25 23 The Solusindo E-Media Team, Building an Online Community, Ibid, p. 15 24Mukhtar and Iskandar, Design of ICT-Based Learning, (Jakarata: Reference, 2012), p.18 25 Meanwhile, in terms of objectives, it can be divided into several websites: a. Personal web, a website that contains a person's personal information. b. Corporate web, a website owned by a company c. Purtal web, a website that has many services. A static website is a website whose content is rarely changed. For example, the organization's profile website.25 23 The Solusindo E-Media Team, Building an Online Community, Ibid, p. 15 24Mukhtar and Iskandar, Design of ICT-Based Learning, (Jakarata: Reference, 2012), p.18 25 Meanwhile, in terms of objectives, it can be divided into several websites: a. Personal web, a website that contains a person's personal information. b. Corporate web, a website owned by a company c. Purtal web, a website that has many services. A static website is a website whose content is rarely changed. For example, the organization's profile website.25 23 The Solusindo E-Media Team, Building an Online Community, Ibid, p. 15 24Mukhtar and Iskandar, Design of ICT-Based Learning, (Jakarata: Reference, 2012), p.18 25 Meanwhile, in terms of objectives, it can be divided into several websites: a. Personal web, a website that contains a person's personal information. b. Corporate web, a website owned by a company c. Purtal web, a website that has many services. it can be divided into several websites: a. Personal web, a website that contains a person's personal information. b. Corporate web, a website owned by a company c. Purtal web, a website that has many services. it can be divided into several websites: a. Personal web, a website that contains a person's personal information. b. Corporate web, a website owned by a company c. Purtal web, a website that has many services. Starting from news services, email, and other services. d. Web forum, a web that aims as a medium of discussion. Besides those mentioned above, there are also e-Government, eBanking, e-Payment websites, and so on. 2. Concept of Web-Based Learning Web-based learning is a learning that can be accessed via the internet. Web-based learning which is popularly known as web-based training (WBT) or sometimes also called web-based

education (WBE) can be defined as the application of web technology in the world of learning for an educational process. as long as the learning process is felt to occur by those who follow it, the activity can be referred to as web-based learning. 26 Rusman, Learning Models (Jakarta: Rajawali Pers, 2011), p.335 21 What is offered in web-based learning is speed and is not limited to space and time to access information.

As long as computers are connected to the internet network, it will make it easier for anyone to get information. How to learn through the web, the main requirement that must be met is access to information sources via the internet. Furthermore, there is information about where the location of the source of information that we want to get. There are several data sources that can be accessed freely and free of charge, without complicated access administration processes. There are several sources of information that are only accessed by parties who have been authorized by the owner of the information source. Realizing web-based learning is not just putting learning material on the web and then being accessed via a computer, the web is used not only as an alternative media instead of paper to store various documents or information.

Web-based learning is unique but serious. What is meant seriously here is that designing to implementing web-based learning is not as easy as imagined. In addition to internet infrastructure, 27 Rusman and Deni Kurniawan, Information Technology-Based Learning, Ibid, p. 286 22 Web-based learning requires an instructor model that is specifically designed for learning purposes. The instructional model is a vital component that determines the effectiveness of the learning process. As for the instructional model designed, the interactivity between students, teachers, supporters and learning materials should receive special attention. 28 Monitoring the web-based learning process is more difficult than in the classroom. Providing online teaching materials is not enough. An instructional design is needed as a learning model that invites a number (as many as activities in the classroom) of students to be involved in various learning activities. One thing to keep in mind how this web technology can help the learning process. For this purpose, learning materials need to be packaged differently with different delivery. 3. Web-Based Learning in the Application of E-Learning Web-based learning is one type of application of electronic learning (e-learning).

The definition states that e-learning is a process and activity of implementing web-based learning, computer-based learning, virtual classes, and digital classes. learning materials need to be packaged differently with different delivery. 3. Web-Based Learning in the Application of E-Learning Web-based learning is one type of application of electronic learning (e-learning). The definition states that e-learning is a process and activity of implementing web-based learning, computer-based learning, virtual classes, and digital classes. learning materials need to be packaged differently with different delivery. 3. Web-Based Learning in the Application of E-Learning Web-based learning is one type of application of electronic learning (e-learning). The definition states that e-learning is a process and activity of implementing web-based learning, computer-based learning, virtual classes, and digital classes. The materials in these electronic learning activities are mostly delivered through internet media, video or audio tapes, broadcasting via interactive television satellites and CD ROMs. This definition also states that the definition of e-learning can vary depending on the organizer of the e-learning activity and how it is used, including what the

purpose of its use is. This definition also implies a conclusion which states that e-learning is basically the application of electronic communication, education and training activities. E-learning is not the same as conventional learning. Conventional learning is a traditional learning method (lecture). This method is used as an oral communication tool between teachers and students in the learning and learning process. in learning, the history of conventional methods is marked by lectures accompanied by explanations, as well as division of tasks and exercises. More teacher-centered learning. As a result, learning practices occur that are less than optimal because the teacher makes students passive in learning and learning activities. 31 Constructivism learning environment is a learning setting with conditions that simultaneously: (1) Provide experience in the process of developing knowledge. (2) Provide experience and appreciation of various perspectives. (3) Embedding learning in a realistic and relevant context. (4) Encourage ownership and voice in the learning process. learning practices occur that are less than optimal because the teacher makes students passive in learning and learning activities. 31 Constructivism learning environment is a learning setting with conditions that simultaneously: (1) Provide experience in the process of developing knowledge. (2) Provide experience and appreciation of various perspectives. (3) Embedding learning in a realistic and relevant context. (4) Encourage ownership and voice in the learning process. learning practices occur that are less than optimal because the teacher makes students passive in learning and learning activities. 31 Constructivism learning environment is a learning setting with conditions that simultaneously: (1) Provide experience in the process of developing knowledge. (2) Provide experience and appreciation of various perspectives. (3) Embedding learning in a realistic and relevant context. (4) Encourage ownership and voice in the learning process. (5) Embedding learning in social experiences. (6) Encouraging the use of various types of representation; and (7) Encouraging self-sensitivity in the process of developing knowledge. E-learning has the following characteristics: 1. Interactivity: more communication channels are available, either directly (synchronously), such as chat or messenger, indirectly (asynchronous), such as forums, mailing lists, or books. visitors. 2. Independence: flexibility in terms of providing time, place, teaching, and teaching materials. This causes learning to be more student-centered (student-centered learning). 3. Accessibility: Learning resources become easier to access through distribution on the internet network with wider access than the distribution of learning resources in conventional learning. 4. Enrichment: learning activities, presentation of lecture materials and training materials as enrichment, enabling the use of information technology devices such as video streaming, simulations and animations. 33 The four characteristics above are what distinguishes e-learning from conventional learning activities. In e-learning, students' comprehension of learning materials no longer depends on the instructor/teacher, because students construct their own knowledge through teaching materials delivered through the website interface. In e-learning also, knowledge sources are spread everywhere and can be accessed easily by everyone. This is due to the global nature of internet media and can be accessed by anyone connected to it. Lastly, in e-learning, teachers/educational institutions function as a source of knowledge.

The learning environment provided by the web is equipped with several facilities that we can combine their use to support the learning process, including discussion forums, chat, online

assessments, and administrative systems. The virtual learning environment is provided by the web functions as a conventional learning environment that can convey information to students. For example, students can collaborate and share information with one another. But keep in mind, as great as the web is in facilitating learning, the main focus that needs to be paid attention to is the learner himself, because technology itself is only a means for us to facilitate the learning process. One of the important values of using the web as a web medium is equipped with hyperlings that allow access to information. 34 Ibid., p. 293 27 randomly (non-linear) which has an impact on our speed to obtain information on the web 4. Principles of Web-Based Learning Web-based learning is built through several principles that play a role in determining the success of this learning process at the implementation stage. This makes this web-based learning effective basically depends on the views of stakeholders. Therefore, it is difficult to determine the main principles that must exist in web-based learning, including: 1. Interaction Interaction means the capacity to communicate with other people who are interested in the same topic or use the same web-based learning. In a learning environment, interaction means the capacity to speak both between participants and between participants and instructors. Interaction distinguishes between web-based learning and computer-based learning (Computer-Based Instruction). This means that those involved in web-based learning are not communicating with the machine, but with other people (both participants and tutors) who may not be in the same location or even time. Interaction not only provides a relationship between people, but also provides a content connection, where everyone can help each other to understand the content of the material by communicating.

This creates the deepest layer of learning that media development cannot create. 2. The dependence referred to here is how easy it is for students to use the web. There are two important elements in this usability principle, namely consistency and simplicity. The point is how the development of web-based learning creates a consistent and simple learning environment, so that students do not experience difficulties both in the learning process and in navigating content (materials and other learning activities). 3. Relevance Relevance is obtained through accuracy and convenience. Any information on the web should be made very specific to improve student understanding and avoid bias. This creates the deepest layer of learning that media development cannot create. 2. The dependence referred to here is how easy it is for students to use the web. There are two important elements in this usability principle, namely consistency and simplicity. The point is how the development of web-based learning creates a consistent and simple learning environment, so that students do not experience difficulties both in the learning process and in navigating content (materials and other learning activities). 3. Relevance Relevance is obtained through accuracy and convenience. Any information on the web should be made very specific to improve student understanding and avoid bias. This creates the deepest layer of learning that media development cannot create. 2. The dependence referred to here is how easy it is for students to use the web. There are two important elements in this usability principle, namely consistency and simplicity. The point is how the development of web-based learning creates a consistent and simple learning environment, so that students do not experience difficulties both in the learning process and in navigating content (materials and other learning activities). 3. Relevance Relevance is obtained through accuracy and convenience. Any

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Putting relevant content in the right context at the right time is an art form in itself and a bit of e-learning thrives on this combination. This involves aspects of the effectiveness of content design as well as dynamic search and placement of content (material). So the main principle in implementing web-based learning is that there must be interaction or communication between participants, as well as instructors in a learning environment that uses the same web-based learning. Then there must be usability, namely how the development of web-based learning creates a consistent and simple learning environment, so that students do not experience difficulties in the learning process. And there must also be relevance of any specific information to improve student understanding and avoid bias. In addition to the above principles, web-based learning requires the cooperation of many people in reflecting on the many possible design scenarios. In this teaching is an important part of the development team.

There are several steps that must be considered by the teacher in this regard, including: 1. The teacher must be actively involved with the educational process and must understand the needs and expectations of students. 2. Teachers should collaborate with students to gather their ideas about what should be included in the online lesson or curriculum 35 Ibid.,p. 305 30 3. The teacher must be very familiar with the main problem areas being taught to be relevant. 4. Teaching must have a good idea that is the hallmark of each lesson in the overall curriculum planning, information and skill activities included in a certain structure. 5. Teaching will also understand how appropriate learning individually. When a lesson needs to be developed as a change in the whole curriculum to a new direction or an extension that meets new demands. Teachers have a good feeling about which individual teaching needs to be developed, and which needs to be modified from the entire curriculum. 36 Learners in an online academic environment must be able to think critically, not only remembering information, but also being able to apply their knowledge to new situations. How to design curricula and subjects that should reflect student progress through a

careful series of activities to create and monitor learning experiences. For successful educating, learners must be prepared for online activities. How to design curricula and subjects that should reflect student progress through a careful series of activities to create and monitor learning experiences. For successful educating, learners must be prepared for online activities. How to design curricula and subjects that should reflect student progress through a careful series of activities to create and monitor learning experiences. For successful educating, learners must be prepared for online activities.

Helping students use discovery technology in online subjects and socializing students on jobs that are 36 Munir, Information and Communication Technology-Based Curriculum, (Bandung: Alfabeta, 2010), p. 44 31 others via the internet and an important component for success. Effective web-based learning includes classes or at least modules that help students adapt to education that takes advantage of advances in science and technology in the field of electronics. Online courses can increase the participation of all learners. During the learning process, for example, all students are encouraged to participate. Everyone has the opportunity to be a listener. This activity will be difficult if you study in class alone. The success of a learning process depends on the effectiveness of the technical equipment used in presenting learning materials. Students often judge the learning process in terms of their enjoyment of the equipment they use and the ability of the teacher to help them learn more easily. 5. Factors that support the smooth running of Web-Based Learning Factors that support the smooth running of web-based learning include: 1. Enjoying the use of the internet Teachers should enjoy using the internet. Students often use the internet, so teachers must follow trends in design and information.

CLOSING

Web-based learning is basically learning that is carried out based on the participation of students in communicating with various aspects of learning, especially utilizing media and materials. In addition, teachers or instructors must also be able to take advantage of the use of information and communication technology media and maximize the use of the internet. Through the web learning media, it is expected that students will be able to increase their interest in learning and interest in using interesting learning media. So that it can improve student achievement.

Because communication in web-based learning prioritizes written communication, it appears that the ability of students to write ideas or opinions is better and more structured.

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