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Development Of Web-Based Hybrid Learning Information Systems Esa Unggul University (Case Study: Superior Esa University)

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Abstract: *Blended Learning or also called Hybrid Learning is conceptualized as a combination of several learning models that include face-to-face integrated learning with learning activities that use computer-based learning media, where the integration of learning concepts aims to optimize learning activities better, learning system users has become a necessity in the world of education, especially in universities. Esa Unggul University is a campus that already uses online learning. The problem felt by students is not being able to feel the real situation such as communication, interaction. The solution is to make Hybrid Learning more interactive and more tangible because it can communicate, discuss with classmates and lecturers directly. In direct learning like this, students download or look at it first when they want to see a video or learning module, working on material that sometimes students don't really understand the material taught, as well as quizzes. learning by using the PIECES method for analysis, the development of a prototyping system that is supported using web-based technology by providing various learning information options such as videos and writing that provide information about achievement and learning. This research resulted in the development of learning media with the use of web-based technology that helps improve learning that is attractive and attractive with a link connected to the YouTube site that explains learning in accordance with the courses taken and choices in learning such as attendance , quizzes, materials and forms. chat, as well as information in the form of learning or education to help lecturers monitor online lectures and help students not to be involved in classroom learning.*

Keywords*: Hybrid Learning, Learning..*

1. INTRODUCTION

Along with the rapid development of Information Technology (IT), Information Technology has a positive impact that is very influential, human activities are increasingly helped by the latest technological innovations. Information Technology develops in various fields, one of which is education. The need for a concept and mechanism of teaching and learning based on Information Technology becomes unavoidable, especially in technology.

E-learning is a system or concept of education that utilizes information technology in teaching and learning. The learning system is used as a means for teaching and learning process carried out without having to face to face directly between teachers and students (Ardiansyah, 2013). According to [1], E-learning or online learning is learning whose implementation is supported by technology services, such as telephone, audio, videotape, satellite transmission, or computer.

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One of the tertiary institutions which is developing Information and Technology in the field of education is Esa Unggul University. Esa Unggul University is a campus that already uses online learning namely Esa Unggul University E-Learning.

In the results of preliminary research conducted on a number of 2018 e-learning class students, showed that from the results of the e-learning user survey there was a problem. The problem felt by students is not being able to feel the situation actually in the classroom and the learning media are monotonous or unattractive. So students are less interested in doing online learning. Another problem that is felt is the interaction between students and others is still considered ineffective, for interactions between students and other students. Discussion forums use chat technology in the interaction process. Discussion forums are less effective because chat technology is not fast enough in the interaction process. One solution is to make the delivery of information more interactive and more tangible by using technology that can discuss directly with lecturers, interact directly with the material being taught, and discuss directly with classmates like we are in one class room.

Blended Learning, also called Hybrid Learning, as the name suggests, is a learning method that combines face-to-face learning with online learning. There are things that need to be considered by participants when they want to follow this learning method is the time commitment to learn a topic, the ability to adapt to learning methods that are different from usual.

This learning method can be a good solution to meet market needs, where face-to-face learning methods are considered difficult due to time and place constraints, reduction in operational costs, participants can determine their own speed in learning, not bound by time but still must have commitment.

Starting from this view, Blended Learning becomes one of the new learning strategies that provides many benefits for students, as well as a form of information and communication technology support towards new learning. In learning in higher education, blended learning usually consists of face-to-face class meetings once a week, with students using online learning to complete group projects and other class assignments (Molenda & Boling, 2008).

In connection with the composition of the implementation of learning, the learning strategy of blended learning applies a composition of 50% face-to-face, 25% offline (through independent learning with interactive media), and 25% online (learning using the web), the composition is implemented taking into account the characteristics of students and lecturers who have never applied this learning strategy before. By developing a hybrid learning configuration and pictures in learning can support learning in real and can be used in any location. based on the characteristics of the course in order to improve the quality of learning.

Blended Learning or also called Hybrid Learning is conceptualized as a combination of several learning models that include traditional learning integrated with learning activities that use computer-based learning media, where the integration of learning concepts aims to optimize learning activities better, learning system users have a necessity in the world of education, especially in universities. Esa Unggul University is a campus that already uses online learning. The problem felt by students is not being able to feel the real situation such as communication, interaction. The solution is to make Hybrid Learning more interactive and more tangible because it can communicate, discuss with classmates and lecturers directly. In direct learning like this, students download first when they want to see a video or learning module, work on material that sometimes students do not really understand the material taught, as well as quizzes. To overcome these problems, a hybrid learning media information system learning media is developed with using the PIECES method for analysis, the development of a Prototyping system that is supported using web-based technology by providing various learning information options such as photographs and writing that provide information about

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achievement and learning. In this research resulted in the development of instructional media with the use of web-based technology that helps improve learning

attractive and attractive with a link connected to the YouTube site that explains about learning in accordance with the courses taken and choices in learning such as attendance, quizzes, material and chat form, as well as information in the form of learning or education to assist lecturers in monitoring online lectures and help students not be involved in class learning.

Based on this background, in this research a hybrid learning learning development technique will be applied to the university, therefore the authors propose the title "Development of Information Systems Hybrid Learning of Esa Superior Web-Based University" which is expected to be a solution of existing problems.

I. FORMULATION OF THE PROBLEM

Based on the background of the problem above the problem to be discussed is,

1) How to build a hybrid learning information system, so that it facilitates learning activities?

2) What is the strategy that uses Hybrid Learning concepts?

3) What are the benefits of Hybrid Learning technology as an online learning at Esa Unggul University?

II. LIMITATION OF PROBLEMS

Limitation Problem consists of the following stages,

1. Analyzing business processes that run on e-learning at the Esa Unggul University computer science faculty.

2. Developing a hybrid learning system using HTML, PHP programming.

3. Utilization of hybrid learning that is made focused on the Faculty of Computer Science, Department of Information Systems and Informatics Engineering.

4. Website Based Application.

5. Designing hybrid learning that can facilitate students in accessing and doing college assignments.

6. Designing hybrid learning that can display several videos, materials, assignments, quizzes, discussions, absences, and links related to learning.

7. This research focuses on developing Website-based hybrid learning.

III. Research Objectives

The purpose of this final project research is,

1. Building Hybrid Learning applications that can increase learning interest.

2. Being one of the new learning strategies that provides many benefits for students and lecturers.

3. Helping students do distance learning and real situations even if not in the location.

4. Building a hybrid learning application so that it can improve the quality of students and lecturers.

IV. Research Benefits

The benefits of research can be taken as follows:

1. Attracting students to attend lectures.

2. Facilitate students in conducting lecture activities.

3. Assist students in adding new knowledge experiences found in Hybrid Learning.

4. Helping students and lecturers in lecture time problems and helping students in doing a college assignment.

5.1 Research Scope

1. Discussing the learning process of the Faculty of Computer Science at Esa Unggul University.

2. Showing learning through video that connects on the youtube site, modules, quizzes and learning questions.

3. Discusses courses in the Faculty of Computer Science.

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4. Contains quizzes based on courses in the Faculty of Computer Science using the level of learning of each Lecturer.

6. Theoretical Basis.

6.1 System

According to, the system is a collection of elements or components or subsystems. A system has a specific purpose, some say the purpose of a system is to achieve the goal (goal) and some say to achieve a goal (objectives). Objectives are usually associated with a broader scope while targets have a narrower scope.

A. System elements

Information systems consist of elements consisting of people, procedures, hardware, software, databases, computer networks and data communications. All of these elements are physical components.

1) Personnel

The intended personnel are computer operators, systems analysis, programmers, personal data entry, and information systems managers.

2) Procedure

Procedure is a physical element. This is because procedures are provided in physical form such as manuals and instructions. There are 3 types of procedures needed, namely, instructions for users, instructions for preparing input, operating instructions for employees of computer center employees.

3) Hard Devices

The hardware for an information system consists of a computer (processing center, input / output unit), data preparation equipment and input / output terminals.

4) Software

Software can be divided into 3 main types: General software systems, such as operating systems and data management systems that allow the operation of computer systems. General software applications, such as analysis and decision models. Software applications that consist of programs specifically created for each application.

5) Database

Files that contain programs and data are proven by physical storage media such as diskettes, hard disks, magnetic tape, and so on. The file also includes printed output and other notes on paper, micro film, and so on.

6) Computer Networks

A computer network is a collection of computers, printers and other equipment that are connected in a single unit. Information and data move through cables or without cables so as to enable computer users to exchange documents and data.

7) Data Communication

Data communication is a part of telecommunications that specifically deals with the transmission or transfer of data and information between a computer and other devices in digital form that are transmitted through data communication media. Data means information that is presented by digital cues. Data communication is a vital part of an information system because this system provides infrastructure that allows computers to communicate with each other

6.2 E-Learning

E-learning E-learning or commonly referred to as electronic learning systems can be defined as the application of information technology to the world of education through virtual classes. E-learning can also be defined as any use or use of internet and web technology to create learning experiences. The principle of E-learning is connected to the network which makes it easy to update, store, distribute, and share instructions and information instantly (Pamugar,

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2015). E-learning has a very broad understanding, so much is defined from various points of view. According to (Naidu, 2006) e-learning is an intensity of the use of information and communication technology networks in teaching and learning. According to (Rosenberg, 2006), elearning is a tool for the delivery of information and a series of solutions, which aim to improve the performance of individuals and organizations using internet technology. While the explanation (Hartanto & Purbo, 2002), the term "e" or the abbreviation of electronics in elearning is used as a term for all technologies used to support teaching efforts through internet electronic technology. In general it can be concluded that, learning carried out with the help of e-learning will be more because teachers and students can communicate without being limited by space and time.

6.3 Hybrid Learning

According to (Darmawan, 2014), Hybrid Learning is a combination of various learning models aimed at optimizing the processes and services of distance, traditional, media, and even computer-based learning. Based on this opinion, blended learning is conceptualized as a combination of several learning models which includes traditional learning integrated with learning activities that use computer-based learning media, where the integration of learning concepts aims to optimize learning activities better. According to Bhonk and Graham (2006) in Rusman et al (2012: 244), said that in general "blended learning is the combination of instruction from two historically separate models of teaching and learning: Traditional learning systems and distributed learning systems.it emphasizes the central the role of computer-based technologies in blended learning. " In the above understanding, it is said that blended learning is a merger of two separate learning models namely traditional learning with computer technology-based learning, the emphasis used in the above understanding is directed at current computer technology, and computer technology referred to here is technology Internet. According to (Erdem, 2014), revealed that blended learning emphasizes the view of the pedagogical approach, where the combination can increase the effectiveness and opportunities in establishing social relations with others when in the classroom and strengthened again through technological approaches that can enable student learning activities to increase which caused through online learning. The above definition is also reinforced by the results of his research which found that learning with blended learning models provides the potential for an effective learning environment in higher learning and teaching activities because it can establish interactions, collaboration, and sharing discussions with instructors or lecturers, so that the difficulties experienced by students can be solved by students.

6.4 Learning Method

According to [2], the learning method is to learn a process that is easily known, applied and theorized in helping the achievement of learning outcomes. The method is one important factor in the learning process to determine learning success. The method is a method used by a teacher / educator to deliver material to students.

In a learning, certainly there is a system of teachers / educators and students or students. With this system, both will interact with each other in carrying out activities.

The learning method is divided into 2:

a. Conventional Method

According to [2], conventional learning methods are traditional learning methods or also called methods that are used based on tendencies that make teachers and students not passive always learning, thinking and innovative.

b. Unconventional Method

According to [3], the unconventional or modern method is a teaching method that is newly developed and not yet commonly used in general, it is still a new method that has been developed and applied in certain schools that have complete equipment and media and teachers who are experts in handling it.

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6.5 Learning Media

According to [4], one external factor that influences the success of learning activities. In general, the benefits of instructional media are to facilitate interactions between teachers and the effectiveness of E-learning as students' learning media so that learning activities are more effective and efficient.

Learning media consists of 4 aspects:

1. Materials

This type is commonly referred to as software or softwear. For example, books, modules, magazines, newspapers, and others.

2. Tools (device)

Usually called the hardware or hardware and is used to convey messages, for example, projectors, televisions, radios.

3. Technique

Engineering is a routine procedure or reference prepared to use tools, materials, people and their environment, for example demonstration techniques, lectures, lectures, questions and answers, or self-study.

4. Environment or settings

The environment or setting, allows students to learn, for example, libraries, laboratories, museums, parks, hospitals, etc. that can be utilized in accordance with student learning goals.

6.6 Website

According to [5], the web is a system related to documents used as a medium to display text, images, multimedia and others on the internet network. Website or system can be interpreted as a collection of pages that are used to display text information, still or moving images, animation, sound, and or a combination of all, both static and dynamic that form a series of interrelated buildings, each of which is each linked to a web of pages.

7. Planning.

At this stage the initial planning of the application is based on the user needs that have been discussed in the previous chapter, there are activities at this planning stage, the first stage of designing the application that will be made. The results of the study will be a basic description of the application.

7.1 Design of a Proposed System Based on PIECES Analysis

The system design is based on the results of the analysis conducted using the PIECES analysis method, by analyzing each component of PIECES that influences the design of the system to be made. Following is the Proposed System Design table based on PIECES Analysis:

7.2 Proposed System

The design of the system is done to provide a general description of the system to be developed or changed into a new system to the user or the user.

Figure 1 Application Design

7.3 Use Case Diagram

In the use case diagram there are 2 actors namely the Student user, and the Lecturer making a draft in the media described in Figure 2.

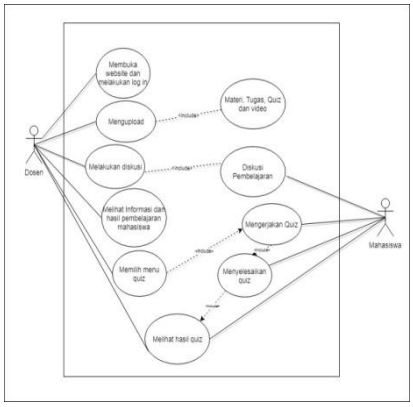

Figure 2. Use Case Learning Chart

8. System Implementation

Login Page Display Design

In the Hybrid Learning system there is a "login", Functioning to manage or participate in learning activities.

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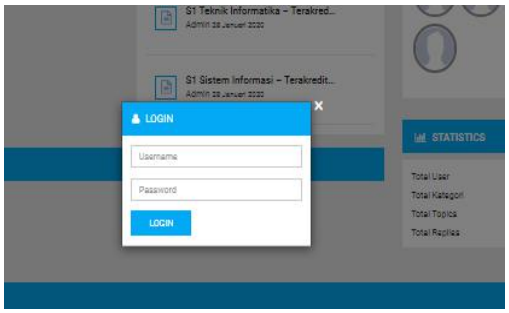


Figure 3 Login page

Admin Start Page Display Design.

In the main display design that serves to enter into the next page. And in the main view there is information about learning, online users, and learning statistics.

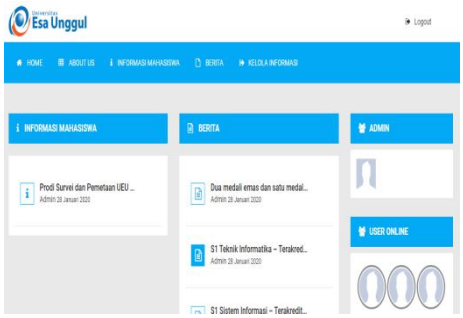


Figure 4 Admin Start Page

Initial Manage Admin Page Design

In the initial display design that serves to manage learning activities

Figure 5 Manage Admin Awaal Page

Student Initial View Design

Student Display Function to see what courses students take, work on the quiz, the value quiz, assignments, modules, and learning videos.

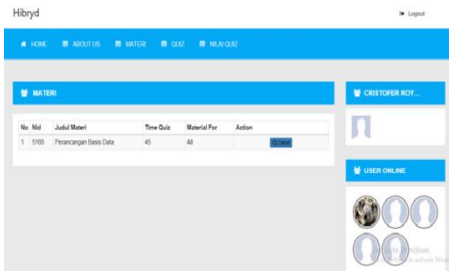


Illustration 6: Initial Student Views

Design Student Display Materials

Student Display Function to see what courses students take, work on the quiz, the value quiz, assignments, modules, and learning videos.

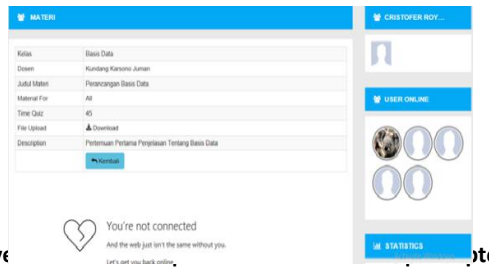


Figure 7 Display Student Material

Design Quiz Display and Tasks

This design works to work on the questions that have been provided by the lecturer, according to the learning course.

Figure 8 Quiz and Task Display

Design Value Result Display

This design serves to see the results of the grades of each student who has been working on an assignment / quiz.

Figure 9 Display of Value Results

Design of Active Student List Display

This design serves to see active student data.

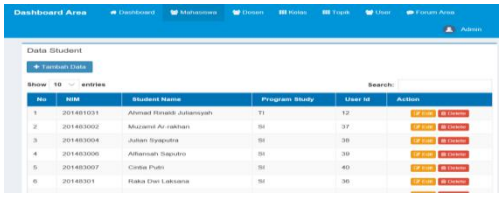


Figure 10 Display Student Data

Design of Adding Lecturer Data

In this design serves to add data lecturers who want to teach class in accordance with the subjects taught.

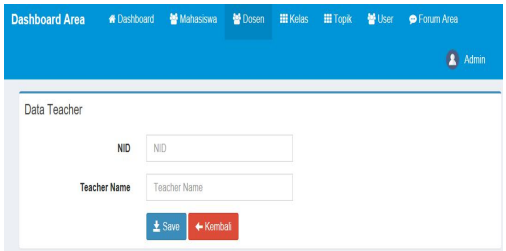
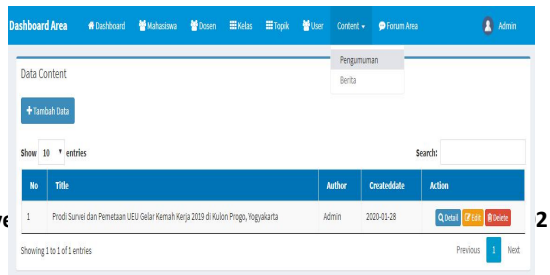


Figure 11 Display Adding Lecture Data

Design Update Announcement Display



In this design serves to update information about learning.

Figure 12 Display Update Announcement

News Update Display Design

This design serves to update the news that contains student achievements and learning.

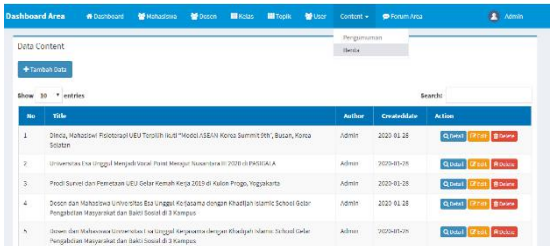


Figure 13 Display news update.

V. CONCLUSIONS

After planning and implementing the Hybrid Learning system for student learning, it can be concluded that this system:

1. Assist students in adding learning experiences.
2. Assist students in working on material and assignments from lecturers.
3. With this application will increase interest in learning online learning with hybrid learning media systems so that students do not get bored doing learning.

10. Suggestions

From this research still sounds short, it is necessary to submit suggestions for the perfection of system development for researchers in the future. The suggestions that the author can provide for system development include:

1. The addition of learning video content is still lacking so there is no appropriate choice.
2. Lack of learning modules so that students are less able to choose learning modules.
3. The display still looks very simple, due to limited time and knowledge in this study.
4. The display still looks very simple, due to limited time and knowledge in this study.

References :

1 [1] R. Firmansyah and I. Saidah, "Web Based Learning Design as Learning Media," Informatics, vol. 3, no. September, pp. 176–182, 2016.

2 [2] E. R. Dewi, "Modern and Conventional Learning Methods in High Schools," LEARNERS J. Science of Education, Teacher Training and Learning, vol. 2, pp. 44–52, 2018, doi: 10.26858 / learners.v2i1.5442.

3 [3] Sakholid Nasution, "CONVENTIONAL AND INVENTIONAL METHODS IN LEARNING ARABIC LANGUAGE Sahkholid Nasution," J. Ilm. Didakt. February, vol. XII, no. 2, pp. 259–271, 2012, doi: 10.22373 / jid.v12i2.452.

4 [4] NS Hanum, "THE EFFECTIVENESS OF E-LEARNING AS THE EFFECTIVENESS OF E-LEARNING STUDY OF TELKOM SANDHY PURWOKERTO VOCATIONAL SCHOOL OF LEARNING E-LEARNING MODEL, EVALUATION OF INSTRUCTIONAL LEVEL," EVALUATION OF TELKOM E-Learning, vol. 3, pp. 90-102, 2013.

5 [5] R. A. Sagita and H. Sugiarto, "Application of the Waterfall Method to," Method. waterfall, vol. 5, no. 4, pp. 49–55, 2016.

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