

## **Online Training Application Design with Website-Based Blended Learning System Method**

**Augusta De Jesus Magalhaes<sup>1</sup>, Iwan Sopwandin<sup>2</sup>, Asri Ady Bakri<sup>3</sup>**

Universitas Aryasatya Deo Muri<sup>1</sup>, Sekolah Tinggi Ilmu Tarbiyah Az Zahra Tasikmalaya<sup>2</sup>,  
Universitas Muslim Indonesia<sup>3</sup>

Correspondence Email: [magalhaes\\_tuta@yahoo.co.id](mailto:magalhaes_tuta@yahoo.co.id)<sup>1</sup>

### *Abstract*

The Ministry of Health provides training to employees to improve their skills and level of service to the people of Indonesia. In the health service training activities carried out, employee training is carried out through seminars. The seminar was conducted in the form of application presentations and hardcopy manuals. The implementation that has been implemented is still lacking because there is no online application that helps the facilitator measure participants' understanding. Therefore, the researchers built an application that aims to produce a website-based online training application. The system development method uses Rapid Application Development (RAD), which is modeled using Unified Modeling Language (UML) tools. Using the PHP programming language and MySQL as a Relational Database Management system, this research produces a training application that can assist the Ministry of Health, especially the Center for Data and Information, in conducting training.

**Keywords: online training, system development, application.**

### **INTRODUCTION**

Online training, or e-training, is a term used to describe all types of e-learning applications, e-training, and web-based technologies as basic elements of the training process to support capabilities by providing training content to employees via the internet anytime and anywhere. In particular, organizations today often use web-based technologies to train their employees. E-training also supports employees with a certain potential, which includes interactivity, hands-on implementation, physical mobility, building educational activities, self-study, corporate training, personal techniques, and acquiring knowledge. Government organizations, especially ministerial institutions, are large organizations that carry out the role of government service providers for the people of Indonesia. The Ministry of Health of the Republic of Indonesia is a government agency whose role is to provide health services.

In the service activities carried out, the Ministry of Health builds applications to improve services to the people of Indonesia. In Presidential Regulation Number 72 of 2012 concerning the National Health System, it is stated that health human resources, both health workers and health support staff, must have the competence to devote themselves to the health sector. Law Number 36 of 2009 concerning health, in Article 21, states that the government regulates planning, procurement, utilization, as well as the development and

supervision of the quality of Health Human Resources in the context of providing health services. The Ministry of Health of the Republic of Indonesia, especially the Centre for Data and Information (PUSDATIN) in the Ministry of Health Regulation (PERMENKES) 64 of 2015, Article 841, has a role to assist in the implementation of information systems development, technology management, and data and information management. The PUSDATIN of the Ministry of Health of the Republic of Indonesia has several fields, such as administration, information system development, information technology management, and data and information management. The PUSDATIN Information System Development Division has a role as a facilitator by implementing training for each field or division. The training is carried out through seminars or workshops for human resources (HR) in the delivery of health services. The seminar is in the form of a system presentation that will be implemented and provides a hard copy of the manual book on the system being implemented. The implementation that has been implemented is lacking because the training participants get an overview of the system without an online application that helps the facilitator measure the understanding of the training participants. The training that has been carried out has not been documented, so it is difficult to make an activity report. Communication between facilitators and employees is also limited because there is no interaction application that supports the training.

The number of Health HR professionals whose competence was increased in 2017 reached 198.35%, or 65,573 people, from the target of 33,060 people. In 2017, the third number of achievements increased when compared to the achievements in 2016: 37,830 people (176%). The increase in 2017 amounted to 27,743 Health HR professionals whose competence increased. This increase in achievement was due to an increase in the achievement rate for Health HR training of 43,691 Health HR who took part in accredited technical and functional training and an increase in the achievement rate for Health HR Education, namely in the DIII Education programmer receiving assistance from 15,388 people. When compared to the 2019 target, the performance achievements of this indicator have exceeded the target by 115.22%.

The Blended Learning System is a method in e-learning that has the advantages of teaching in class and online learning with a combination of various sources of learning materials, classroom and online environments, online teachers, peers, and experts in teaching and learning activities through virtual classes. The blended learning system supports the presentation of learning materials in the form of documents and videos to make it easier for training participants to understand the presentation from the facilitator. Training activities at the company that measure employee abilities at the learning level use the Blended Learning System by providing insight to measure the increase in participant knowledge before and after training. Instructors conduct pre- and post-tests to ensure that the training meets its learning objectives. The total number of participants answering complex questions correctly and completing hands-on assignments on time provides a measure of increased knowledge. The implementation of online training using the blended learning system method has several advantages, such as the fact that the training system allows employees to adjust the time of training activities, provides module and video features as a means of multi-application, provides interaction forums for communication, and can be accessed easily via the internet so that the training carried out becomes more interactive.

## **METHOD**

In conducting this research, researchers used data collection methods to explain the data used and how the data was collected and processed through observation, interviews, and literature studies, as well as the tools used to carry out the analysis and design of the Blended

Learning System using the Rapid Application system development method. Development. Retrieval of data by making direct observations of the problem being studied with the intention of comparing the information obtained with reality. In this case, observations were made directly about the running application process activities at the Data and Information Centre of the Ministry of Health of the Republic of Indonesia. The researcher conducted a debriefing with the Head of the System Development Division and staff to obtain an overview and explanation that could assist in the process of analysis and design of the system. Researchers conducted a literature study as conceptual and theoretical reference material for the research study process. Information can be in the form of scientific books, research reports, scientific essays, theses, regulations, statutes, yearbooks, encyclopedias, and other written sources. Materials collected through this literature study can support data that has been previously obtained during the observation and interview processes. Researchers analyzed and designed a Blended Learning System using the Rapid Application Development (RAD) development model using Unified Modelling System (UML) tools for its design. According to Kendall (2011), there are three phases in RAD that involve analysis and needs in the planning, design, and implementation stages.

## RESULT AND DISCUSSION

The researcher identified the problems that arose by analyzing the system that was already running along with the training system that was running at PUSDATIN: In accordance with PMK No. 39 of 2016 concerning the implementation of a healthy Indonesia, the head of PUSDATIN plans training activities in the form of seminars, which are then submitted to the head of personnel and general affairs. recapitulate the data of the facilitator who will be assigned and give the assignment letter to the facilitator. The facilitator recapitulates the data of the participants who will take part in the training seminar activities. The facilitator makes materials in the form of hard copies for the training activities that will be carried out. Participant data and training materials are then corrected and approved by the head of personnel and general affairs. The facilitator carries out the training according to the plan that has been made by delivering training material through presentations and printed modules as a guide for training participants. The identification of problems with the current system is as follows: The ongoing training does not yet have the facilities or applications to carry out interactive training. The training module is in hard copy and not stored properly. Communication between the facilitator and participants is limited during the seminar or workshop. The ongoing training cannot measure the understanding of participants who have attended training activities.

Based on the problems found in the running system, the Ministry of Health's PUSDATIN requires a system to support training activities that can manage training data to make it easier for participants to understand the training being carried out. The system proposed to solve this problem is to implement an online training application or website-based E-Training at the Ministry of Health's Data and Information Centre. The workflow of the online training application proposed by the researcher is as follows: conduct internal meetings to discuss the planning of training activities to be carried out. input the data of the facilitator who will be assigned to the training and make a report on the data of the facilitator. correcting the facilitator's data inputted by the head of personnel through the website. Make a report on facilitator data that has been inputted into the website and give the report to the assigned facilitator. The facilitator receives an assignment letter and then makes a data recapitulation of the participants who will take part in the training activities. The facilitator inputs video training materials and documents, followed by simulations and certification exam questions.

Participants can understand the material from the facilitator by downloading files and videos of training materials. Participants take part in simulation training with explanations of questions by the facilitator to measure participants' understanding. Participants can take part in certification training to measure their individual understanding.

Activity diagram describes the flow of the system being built, which describes how the flow begins, some of the decisions contained in each process, and how the activity ends. Here are some activity diagrams. Activities are carried out by admins, facilitators, and participants to be able to enter the online training application using the username and password that have been entered. If the username and password are entered incorrectly, the application will display an error message, and if correct, it will display a menu according to the user level entered. Furthermore, if you want to exit, click the exit button on the menu; it will return you to the login page. Administrators can manage facilitator data on the facilitator data menu. The application will display the facilitator data that has been input. Admins can search facilitator data, add data, delete data, and edit facilitator data. Administrators and facilitators can manage participant data on the participant data menu. The application will display the participant data that has been entered. Admins and facilitators can search participant data, add data, delete data, and edit participant data. Administrators and facilitators can manage material data on the training materials menu. The application will display the material data that has been input. Admins and facilitators can search data, add data, delete data, and edit material data. When adding material data, the file to be uploaded must comply with the provisions that are already available. If not appropriate, the application will display an error message. Admin and facilitator select the training data menu, and the system displays the training theme and training questions menus. In the training theme, the admin or facilitator can determine the training theme, the description of the training, and the time for working on the training exam questions. On the training questions menu, administrators and facilitators can add questions and answers to exam questions. Admin, facilitator, and participants can download training materials that have been presented by the facilitator during the seminar as learning and training file storage. Participants can choose the certification or simulation training menu on the training menu. Simulation training is the process of piloting the facilitator to assess participants' results prior to the certification exam. Whereas in the certification exam, participants will be assessed for their level of understanding of the material presented by the facilitator, with the result being an official training certificate signed by the head of PUSDATIN. Administrators and facilitators can manage training results. The Results menu displays participants who have completed simulation and certification training. Users can search for and delete participant data. The forum menu will display the forum data that has been created. Users can search and delete the forum.

Potential object is a model to summarize writing rules by replacing nouns to be more precise. It aims to identify business processes that take place while the researcher is conducting system analysis. The class diagram explains the relationship between classes contained in the distribution information system of historical sites. The class is formed by entities and objects that have attributes and operations. From this class, a table can be formed that can socialize with other tables. In the proposed system, there is interaction between objects through messages in the execution of a use case, which is depicted in a sequence diagram. The following is a sequence diagram of the system. A sequence of actors, namely admin, facilitator, and participants, can enter the online training application using the registered username and password. If the username and password are correct, the system will display the user dashboard page according to the user level. If the username and password do not match, the system will display an error message for the data entered. If the

administrator selects the facilitator data menu, then the system will display the facilitator data that has been inputted. The administrator and the facilitator enter the participant data menu. The system will display participant data that has been previously inputted. When adding participant data, the actor must fill in all available form data; if it is empty, the system will display a message on the form that it is experiencing data input errors. Administrators and facilitators input training material data on the training materials menu. Administrators and facilitators can manage material data by deleting and entering it. If the material data entered does not comply with the provisions, the system will display an error message. If appropriate, the material data will be stored in the database. Participants can search for this training material and download the required material. Participants can take part in the training if the admin or facilitator has activated the required training. Participants can start simulation training first, then continue with certification. The system will display the question data along with the exam answers. Participants can choose the correct answer, and then the system will save the exam results data into the database. When the exam time is up, the system will automatically save the results of the answers that have been filled in by the previous trainees. Admin, facilitator, and participants interact in the forum menu. Admins and facilitators can create discussion forum titles, and participants can participate in commenting on the forum. The forum data input form must be filled in; otherwise, the system will display an error message. If the form has been filled in, the system will save the forum data and comments into the database.

At the testing stage, the system aims to carry out testing on each programmer unit so that it can be found out whether it can function properly according to the design and to ensure that there are no programmer errors or bugs. The testing method used is Blackbox testing. This is a testing method that focuses on the functional requirements of the software. Therefore, Blackbox testing allows software developers to create a set of input conditions that will train all functional requirements of a programmer. The following is a table of test results for each programmer unit using the Blackbox testing method.

## CONCLUSION

Online training applications can assist users in carrying out training activities by providing learning applications via the website. This online training application uses the Blended Learning System method so that it can support synchronous learning activities through online seminars and exams and asynchronous learning activities through online material in the form of document files and videos. With this training application, the facilitator can measure the participants' ability to understand the material presented by conducting a certification exam. This training application provides a communication tool in the form of a forum for participants and facilitators to convey information about the training. This online training application has not maximized training implementation activities through scheduling. Communication is in the form of discussion forums; for their development, it is necessary to add live-chat and live-cam features. The application does not yet have complete profile management features such as address, date of birth, and profile photo. In the certification feature, the signature of the head of the PUSDATIN input scanned image file does not use an encryption security code.

## REFERENCES

- Kendall. (2010). *Systems Analysis and Design*. New Jersey: Pearson Education, Inc.
- Rajini, R. (2011). *A Blended Training Model to Improve Learning Outcome of IT Professionals in Scripting Languages*. International Conference on Technology for Education, 4.

- Saidin, S. (2016). *Proposed Model to Evaluate the Impact of E-Training*. IEEE Conference on e-Learning, 6.
- Zainuddin, Z. (2018). Blended Learning Method Within Indonesian Higher. *Jurnal Pendidikan Humaniora*, 9.
- Zhou, F. (2017). *A Study on the Learning Support Service of Blended Learning under the Environment of Online Open Courses*. International Symposium on Educational Technology, 5.