

Website-Based Government Learning Development: An Innovation for Learning in the Implementation of Life-Based Curriculum

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Abstract—This research aims to develop a webs-based government learning product as a learning innovation in the implementation of a life-based curriculum. The specific intention of this study are (1) how the characteristics of the characteristics of web-based government learning development, and (2) how effective is web-based government learning development. Development is performed using the Sugiyono (2013) development model adapted by the researchers. The product of the learning model was then tested for validity and product testing with students majoring in Law and Citizenship at the State University of Malang as test respondents. The results of this study indicate that the average score of the respondents for the pre-test was 53.6 and the post-test was 94.3, this indicates an increase in the learning outcomes of respondents based on the average pretest to posttest results. In the statistical test table it is known that the Z value obtained is -7.202 with a probability value or p value (Asymp. Sig. 2-tailed) of 0.000 which means the probability value obtained is less than 0.05 (maximum error limit) so that it can be concluded that the website-based government learning products that have been developed have been effective in improving student respondents' learning outcomes.

Keywords—digital learning, web-based learning model, government science

1 Introduction

According to Daryanto, the 21st century is a century of knowledge, a century in which information is widely distributed and technology develops rapidly [1]. With the development of information and communication technology as well as digitization in the education industry, the concept of "space and time" has so far become a measurement to determine the capacity at which students' understanding the learning material and integrate with the emergence of digital learning in the form of virtual learning [2, 3]. The conception of organizing the learning process has shifted to efforts to realize modern learning [4]. The development of technology and digitization can process, package, display and disseminate information both audio, visual, audiovisual, and multimedia, this is in line with Munir's statement that services and learning resources can be accessed easily through digital learning [5]. This concept develops so that it packs

the previous learning setting into a more attractive and provides adaptive psychological conditioning to students wherever they are.

The concept of implementation of learning in the 21st century is marked by digital-based learning methods and a combination of spatial and temporal concepts that are consistent with the concept of life-based learning which assume that the learning process must continuously seek and use different learning resources, the learning context should be considered so that it is not limited by space and time. Learning resources can be diverse and learning can be adaptive to the learning context.

Website-based learning is learning whose implementation is supported by the help of internet technology. Terminologically, a website is a collection of several web pages and documents with various formats spread across several computer servers located all over the world which then become one through a network. Batubara explains that the application of website technology in the education sector is a learning process commonly referred to as web-based training (WBT) or web-based education (WBE) [6]. The internet in this digital era is one of the most influential learning resources [7], based on the survey results of the Indonesian Internet Service Providers Association (APJII) reporting that in 2018 there were 171 million active internet users in Indonesia but only 2.3% use the internet as a learning medium or educational purposes. Sadikin & Hakim explained the advantages offered by internet technology in addition to the speed of students to access learning materials, some features make the learning process more interactive and interesting, namely in the form of multimedia so that it can increase student motivation [8].

Based on the results of a preliminary study with a lecturer in government science courses at the State University of Malang, it is known that the learning process for government science courses that have been carried out so far has not been able to be carried out optimally due to several factors, the ability of lecturers, limitations of space and time which are the main obstacles for lecturers in implementing learning, so that the flexibility of the novelty of the development of information technology in the learning process has not been maximized. The State University of Malang already has adequate learning facilities for the implementation of digital learning. The lack of maximum digital learning innovation in the government learning process makes researchers consider developing website-based government learning products as learning innovations in implementing the life-based curriculum.

2 Method

2.1 Research procedure

This research is a type of Research and Development (R&D) research. The development model used in this study is the development model of Sugiyono [9], while the stages of the research are as follows: (1) The design and manufacture stage, at this stage the researchers design, create and develop website-based governance learning in the form of designing all media objects, learning syntax and instrument test questions to test the achievement of student competence. (2) The evaluation stage, at this stage is

carried out in several steps, namely (a) the validation and trial stages which include validation of learning experts; material expert validation and product testing with students as trial respondents, (b) the revision stage, this stage is carried out when there is input related to products developed based on input from expert validators and trial respondents [10]. (3) The data analysis stage, at this stage is carried out to measure the validity and effectiveness of website-based government learning development products. The research design is made a flowchart as shown in Figure 1.

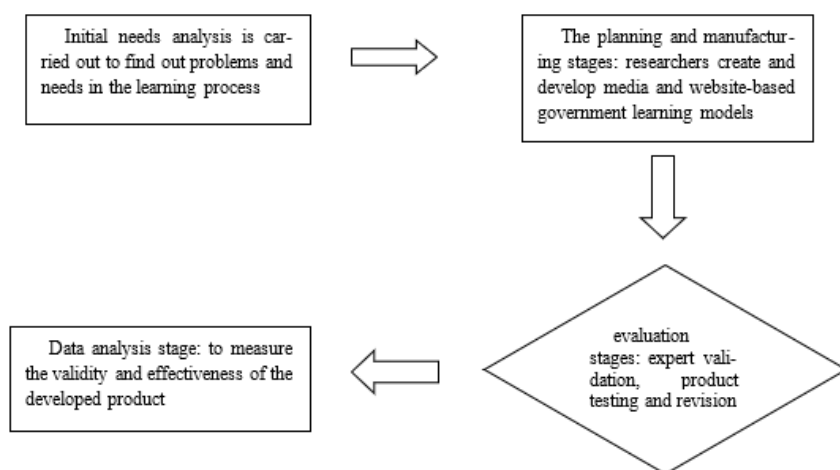


Fig. 1. Development flowchart

2.2 Research subject

The test subjects in this research and development include (1) learning expert validators who are experts in the field of learning, especially digital learning; (2) material expert validator who is an expert in the field of government science; and (3) student respondents as product trial subjects were 69 students majoring in Law and Citizenship.

2.3 Data type

The types of data used in this development research are qualitative data and quantitative data. Qualitative data are criticisms, suggestions and opinions related to learning products that have been developed from validators of learning experts, material experts and test respondents which are then analyzed by reexamine and drawing conclusions and conveying descriptively [11]. While quantitative data as results of an assessment of website-based government learning products was collected through a questionnaire from the results of expert validation and product trials. The type of questionnaire in this study is a closed questionnaire, using a Likert scale.

2.4 Data analysis

To determine the quality of the development results, this study uses descriptive percentage data analysis techniques. This technique is used to convert quantitative data into percentage form which is then interpreted with qualitative sentences [12]. The formula used for data analysis of the results of product validation and testing is as follows:

$$v_{ah} = \frac{x}{\sum x_i} \times 100\%^n \tag{1}$$

Information:

V-ah = expert validation

x = total empirical score achieved

Σxi = max total score

(Akbar, 2013)

To determine the effectiveness of the card think learning media, the following conversion table can be used [13].

Table 1. Learning product validation conversion

Criteria for Achieving Value Validity	Category Validity	Follow-up
76,00% - 100,00%	Very Valid	Can be used
51,00% - 75,00%	Valid	Usable but needs minor repair
26,00% - 50,00%	Less Valid	Need big improvement
01,00% - 25,00%	Invalid	Can not be used

3 Result and discussion

Products resulting from the development of website-based government learning consist of websites based on learning management systems that can be accessed by students online through various devices, guidebooks, and offline learning using interactive multimedia. Combining digital learning with conventional or face-to-face learning can create integrated learning and make it easier for students to understand teacher-provided substance. Combining digital learning with conventional or face-to-face learning can create integrated learning [14, 15] and expedite students to understand the material provided by lecturers [16]. Website-based government learning products are made with the aim of flexibility to the latest technological developments in learning government science as well as constructing student understanding of government science courses in a blended learning approaches either through direct learning or indirect meeting (online).

3.1 Website-based government learning system design

Website-based government learning is designed to accomplish the learning objectives that have been planned, namely related to bureaucratic material and government leadership, with steps for preparing learning materials, using online and offline learning media [17], using learning methods, and assessment and time allocation. learning

within a certain time. The learning design is based on the semester lecture design (RPS) for the Government Science course.

The website-based government learning system is planned to be made with a blended learning model. The method used is to combine synchronous and asynchronous learning into one so that the government learning process is not only carried out conventionally or face-to-face but can also be done online through a website portal that has been developed [18, 19]. For online learning, web-based media is used which has been integrated with several supporting websites such as YouTube, google doc and several other supporting websites. Meanwhile, conventional learning is done by giving interactive multimedia face-to-face.

3.2 Product design website based on learning management system (LMS)

After the planning and development stages are carried out, a website product is produced which is developed using a learning management system (LMS) which is then uploaded to the hosting server so that it can be accessed online by students. The website product that has been developed consists of various web pages which include login page, registration page, dashboard, material page, assignments, and evaluations. The material contained in this website consists of two materials, namely government bureaucracy and government leadership, each of which is divided by researchers into several material sections. The government bureaucracy material contains the notion of bureaucracy, the theory and development of the bureaucracy and the characteristics of the bureaucracy. The government leadership material contains the notion of government leadership, leadership theory, leadership traits, Pancasila leadership principles and government leadership behavior.

The website display design which includes the user interface, dashboard, and home pages as well as material display design is developed through several supporting software such as bitmap and vector-based graphics software as well as publisher software. The use of this supporting software is expected to add to the aesthetic value and attractiveness of the website product display [20]. The material presented in the product website has been integrated with several supporting websites to support the learning process including Google Slides, Google Docs, YouTube, and several other supporting websites. An example of a website product display design based on a learning management system that has been developed can be seen in Figures 2-5.

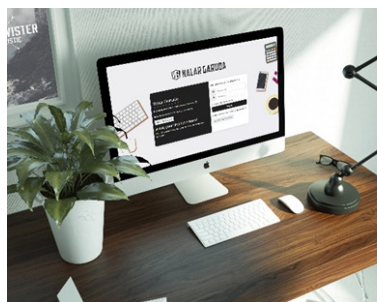


Fig. 2. Login display

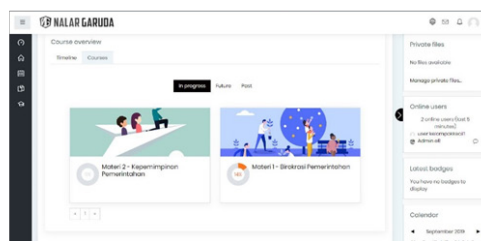


Fig. 3. Dashboard

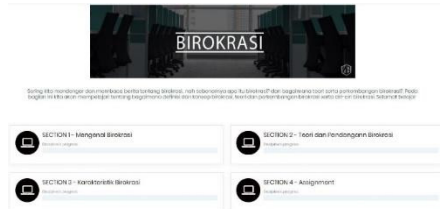


Fig. 4. Material page view

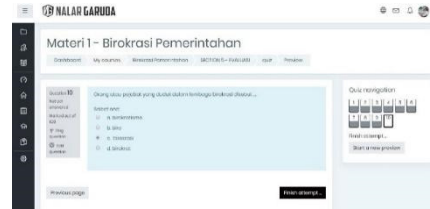


Fig. 5. Evaluation page view

3.3 User guide design

This User Guide contains instructions on how to use the website-based government learning products that have been developed. Instructions for use in this development were developed in two versions, namely a soft file in the form of an electronic book (e-book) which can be accessed directly through the website page and a hard file version in the form of a printed book. With this usage guide, it is hoped that it can assist in the use of learning products that have been developed [21]. The following is the design of the website-based government learning guidebook that was developed.



Fig. 6. Design of learning guidebooks in website-based government

3.4 Interactive multimedia design

The interactive multimedia used is the result of developing learning media applications using presentation software and graphic processing software that can be directly applied to computers and laptops offline. Interactive Multimedia generally contains material contained in website products. The basic display of interactive multimedia can be seen in Figure 7.



Fig. 7. Display of interactive multimedia design

4 Discussion

After carrying out the planning and development stages, a website-based government learning product is produced. This learning product contains 2 materials about government bureaucracy and government leadership which is equipped with an evaluation in the form of a computer-based test to measure the achievement of student competencies [22]. Learning is designed in a blended learning manner by combining synchronous learning with asynchronous learning. If the lecturer is unable to attend the lecture, the learning process can still be performed through the lecture materials that have been provided on the website portal that has been developed.

The results of the categorization resulting from the learning design in this study are as follows: (1) learning materials: include text material, infographics related to the material provided, video embedding material from YouTube, presentation slides that have been integrated with Google Slides, as well as several article links. related to material that has been embedded in website products, (2) Online learning, consisting of web-based media that contains learning materials that have been divided into several material sections, assignment pages (assignment), forum pages and chat to support communication between students or students with online lecturers, a computer-based test evaluation page with questions that are randomized automatically, (3) Conventional learning, carried out face-to-face in the classroom using interactive multimedia based on presentation media. To determine the quality of this website-based government learning product, the researchers conducted expert validity tests and product trials.

From the results of the validation of learning experts, the results for the aspect of presenting the material obtained a percentage score of 95% (very valid), for the aspect of material suitability the percentage results were 87% (very valid), and for the aspect of material accuracy, the results were 92% (very valid) so that overall obtained a percentage score of 91%. For advice and input from learning experts, the size of images on website products should be reduced so that accessibility in accessing website products can be faster and smoother. The results of the validation of government materials experts were obtained for the aspect of material clarity with a percentage score of 95% (very valid), and the substance aspect of the material obtained a percentage of 90%

(very valid) so that overall, a percentage score of 92% was obtained. Suggestions and input from material experts related to the development of website-based government learning are that for some images and videos displayed on website products, reference sources should be included so that they do not violate copyright.

From the results of product trials, the attractiveness aspect obtained a percentage score of 85% (very valid), the clarity aspect obtained a percentage score of 90% (very valid) and the practicality aspect obtained a score of 87% (very valid) so that overall, a percentage score of 87% was obtained with a relevant category and website-based government learning products that have been developed can be applied in the learning process.

The result of the effectiveness test show that the product of the website-based government learning development is effective in improving the competence of students. This effectiveness test is carried out by examine the significance improvement of student learning outcomes based on pre-test and post-test [23]. In the pre-test process, it indicates that 65 students of the trial test (94%) got a low category, 2 students (3%) got the medium category, and 2 students (3%) got the high category. In the post-test results, it indicates that 4 student respondents (7%) got a low category, 5 students (7%) got the medium category, and 60 students (87%) got the high category. After knowing the results of the pre-test and post-test conducted by the test respondents, then data analysis was carried out to test the level of effectiveness [24] by conducting a non-parameterized Wilcoxon Signed Ranked Test through the IBM SPSS Statistic version 25 program to measure the significance of the difference in values. The pre-test and post-test of the test respondents are shown in Table 2.

Table 2. Wilcoxon signed-rank test results

Descriptive Statistics					
Descriptive Statistics					
	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
PRETEST	69	53.6232	14.13912	20.00	90.00
POSTEST	69	94.3478	10.21508	50.00	100.00
Rank					
		<i>N</i>	<i>Mean Rank</i>	<i>Sum of Rank</i>	
POSTEST - PRETEST	Negative Ranks	0a	.00	.00	
	Positive Ranks	68b	34.50	2346.00	
	Ties	1c			
	Total	69			

Table 3. a. POSTEST < PRETEST: Test Statistic^a

	POSTEST - PRETEST
Z	-8.202 ^b
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Rank Test

b. Based on negative ranks.

Based on the results of the Wilcoxon signed ranked test, it is known that the average score of the pre-test respondents for the pre-test is 53.6 and the post-test is 94.3, this indicates an increase in respondents' learning outcomes based on the average pretest to posttest results. In the statistical test table, it is known that the Z value obtained is -7.202 with a probability value or p-value (Asymp. Sig. 2-tailed) of 0.000 which means the probability value obtained is less than 0.05 (maximum error limit), it is concluded that the website-based government learning products that have been developed have been effective in enhance learning outcomes of the participants.

The results of this development research confirm previous research from Barokati & Annas [25], Mahendra Darmawiguna [26], Divayana [27], and Uno & Ma'ruf [28] which stated that website-based learning can be applied in the learning process and in improving students' comprehension of the learning substance provided by the lecturer.

5 Conclusion

This website-based government learning product was developed for universities in the subject of government science. This website-based learning development was chosen as an alternative to adaptable learning innovation initiate the development of information and communication technology as well as digitalization in learning government science. This research produces a website-based learning product as a learning innovation in the instrument of a life-based curriculum. The quality of the development results in this study is valid and effective in improving student learning outcomes.

The results of the development in this study are expected to be used as a reference for learning governance by research users. The website-based government learning product that has been developed is used by lecturers as an alternative to learning government science in implementing a life-based curriculum.

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