

WEB-BASED DIGITAL LEARNING APPLICATION OF ICONIC BATIK IN BATIK LEARNING AT VOCATIONAL HIGH SCHOOL

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Abstract

This research is motivated by the importance of making the process of transforming local wisdom values to the younger generation in a more interesting and enjoyable way. The purpose of this study was to design a web-based batik learning application in a Vocational High School called Digital Learnik Iconic Batik (Digi_Learnik). Digi_Learnik is designed in such a digital library platform. The design process was carried out by the Waterfall Development Software Cycle (SDLC) method. In general, Digi_Learnik consists of a database and user interface. The Digi_Learnik design consists of a book aisle containing e-books in 3D that contain information about batik patterns complete with history and philosophical values. The second part is in the form of videos originating from YouTube, which contain information on batik in the form of animation, video, audio-visual that can be chosen by students especially in enriching aspects of skills in learning batik. The last part is in the form of scientific writing that contains information on the results of the latest batik research. The design of the Digi_Learnik application is an alternative presentation in platform learning that is more interesting, actual, and able to present relatively large amounts of information. It is expected that the policymakers, starting from the ministry level to the school principal level, consider integrating the use of such application in the curriculum.

Keywords: Digi_learnik, Digital competence, Digital documentation, Digital library, Digital learning, Indonesian batik, Transformative pedagogy.

1. Introduction

Indonesian Batik is one of the world's heritage that has been set by UNESCO in 2009. The designation of Indonesian Batik as a world heritage was because batik represents the noble values of the Indonesian culture through a cloth. The process of liquefying batik patterns and the way they are made are the key considerations for UNESCO in establishing Indonesian Batik as a world heritage in an intangible and tangible cultural heritage of humanity [1].

In this context, batik plays a strategic role to become a local wisdom, value-based education model. Education that is rooted in the local culture is believed to strengthen identity and awareness to maintain that value as part of national harmony [2]. Local wisdom-based education is categorized as holistic education because it touches the minds and hearts aspects of students [3]. The values of local wisdom must be transformed from one generation to the next if they do not want to become extinct [4].

Considering the importance of teaching the value of local wisdom, especially for the young generation of the nation, it is necessary to be attractive to teach these values so that they are not boring. The most current alternative is to use internet-based media or digital media. The use of digital media in learning (digital learning) is believed to be able to provide great benefits to the success of learning. Painter et al. [5] mentioned that the digital learning platform is currently growing rapidly in line with the development of increasingly interesting internet technology and social media. The use of digital media can provide the learning content, which is abundant, various, mass, and able to reach a wider community [6, 7].

Skains [8] proposed that digital learning with the main tool is in the form of digital media, in which, has the characteristics of multiple modes, reader interaction, and non-traditional story structure, and is socio communication [9]. Learning using digital media has a multi-voiced perspective and can strengthen the subject and learning content [10]. Digital media can provide inter and intrapersonal experiences that will make learning more meaningful and memorable [11]. Learning material in digital form can be presented in 3D so that they are more interesting [12-15].

So far, the use of digital technology in batik studies has been more focused on research on aspects of batik pattern making and image [16-18], rarely have they been touching the transformation aspects of pedagogy in the value of local wisdom in education. This study tried to design a batik learning application digitally called Digital Learning Iconic Batik (Digi_Learnik). The application that was made is more in the form of learning resources for students in learning batik. This application also functions as a digital library, where students can surf and search for as much information as possible related to the ins and outs of batik.

2. Method

Digi_Learnik (Digital Learning Iconic Batik) is a web application used for learning about batik. Digi_Learnik was designed using the Software Development Life Cycle (SDLC) method of the waterfall model (as shown in Fig. 1) [19, 20].

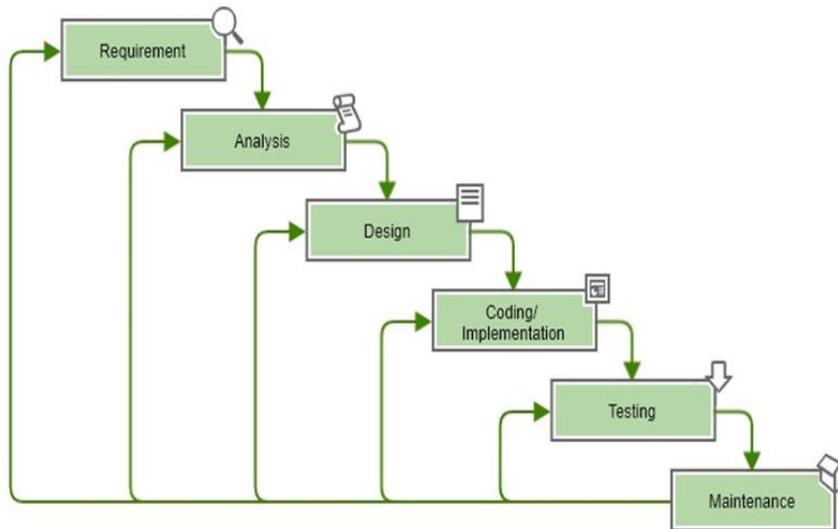


Fig. 1. Software development life cycle (SDLC) of waterfall model.

The Digi_Learnik application raises the theme of Northern Coastal Batik in West Java, namely in Indramayu Batik, Cirebon Batik And Kuningan Batik. The application design can be seen in Fig. 2.

In general, Digi_Learnik consists of a database and user interface (user interface) with the human-computer interface principle [21]. The database contains data on electronic books and scientific works with the results of research and other scientific articles. The database is created using MySQL software. MySQL is a SQL management system (database management system) or multithreaded, multi-user database management software.

The video screen does not require a database but uses an API from YouTube that is modified by entering several parameters. This is done to get certain videos that are suitable for learning needs and students do not need to find difficulties to find relevant videos. Students can get videos that have been analysed by the system; the analysis is done by looking at the most viewer and likes data, batik video makers, location and content of the video.

This application also provides videos that are more specific by categorizing the data that will be given, which are batik history, batik technology, the philosophy of batik and batik arts. In accordance with the objectives, Digi_Learnik will be used as learning media; thus, it was made to be able to present the right information about North Java's western coastal batik, so a user interface is needed.

A user interface is a form of graphical display that relates directly to users. The user interface functions to connect between users and the system so that the application can be used. The Digi_Learnik User Interface is created using framework code ignitor.

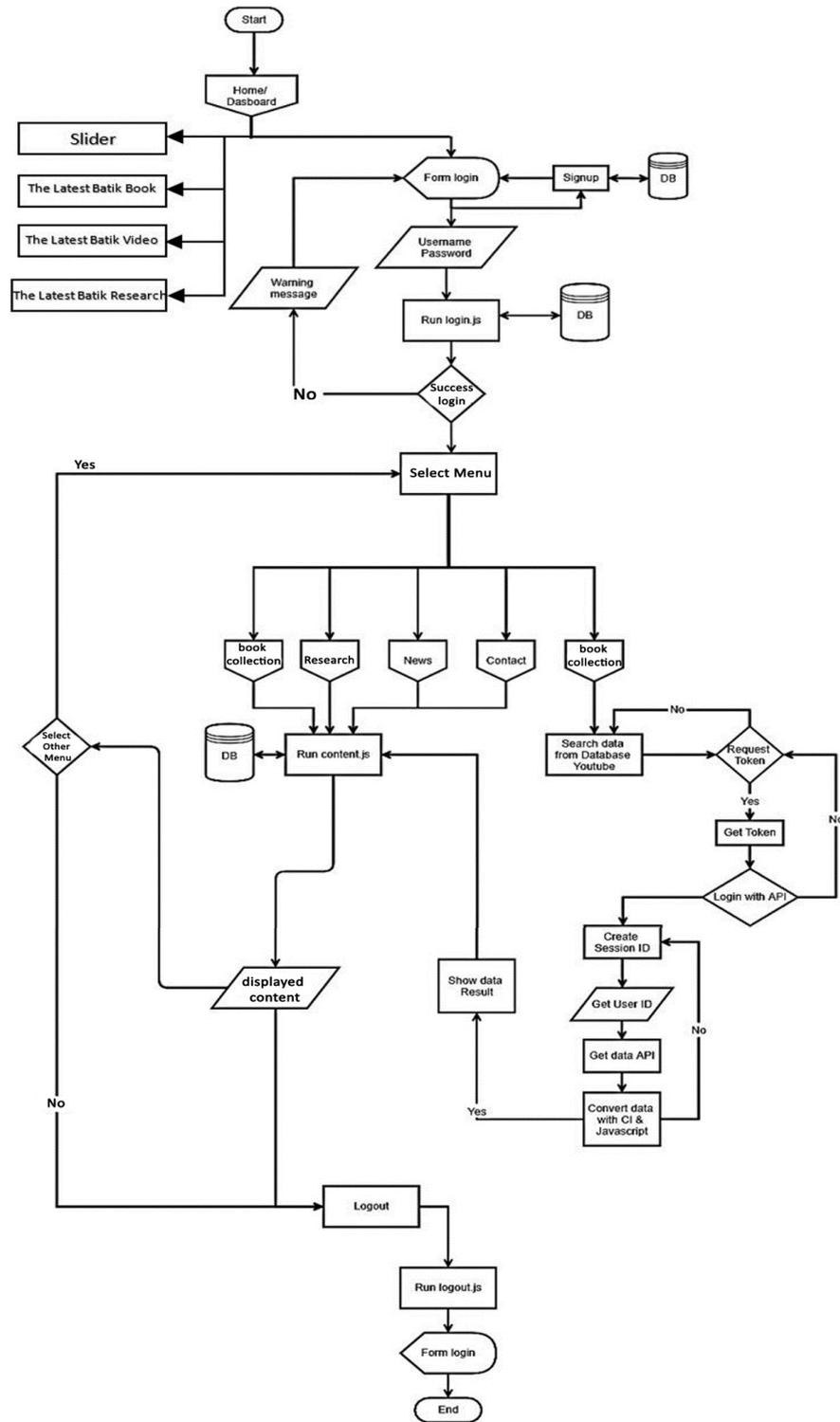


Fig. 2. Design of Digi_Learnik application.

3. Results and Discussion

The Digi_Learnik is a web-based application designed as a platform functioning as a digital library. As a library, students will be presented with a variety of information related to batik with certain catalogues and categories.

To access the application, students must enter the login process first. The Digi_Learnik application, created for this purpose, was designed using a commonly used browser, namely Google Chrome. In Fig. 3, the application dashboard page is shown. On the dashboard page, users are presented with the latest batik books, the latest batik videos and the latest batik writing. To be able to access other pages, users are required to login first. The login view can be seen in Fig. 4.



Fig. 3. Page of Digi_Learnik application dashboard.

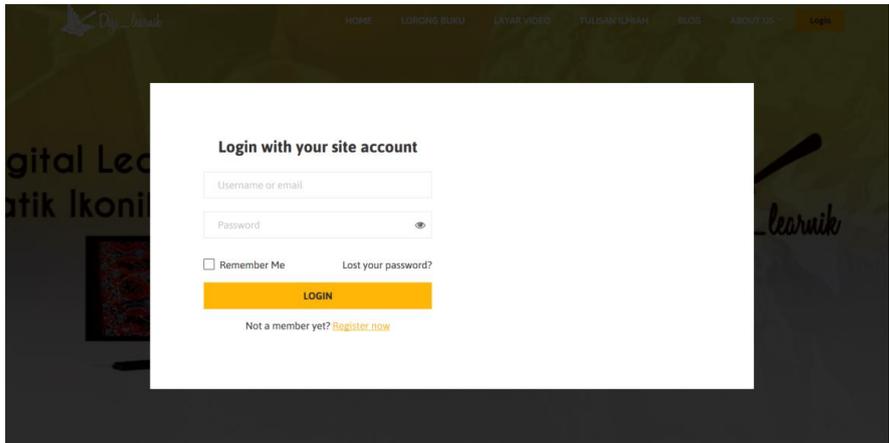


Fig. 4. Form login of Digi_Learnik.

The Digi_Learnik application designed in platform digital library provides several benefits including collection provision, information services, and academic activities that are effective because they are supported by sophisticated technology devices [22]. Barbuti et al. [23] reported that Digi_Learnik in a platform of digital

libraries, in which, can make learning more interesting because the document is accessed in multimedia.

Digi_Learnik is a digital learning media designed consisting of 3 main media, which are named Digital Book Aisle, Video Screen and Scientific Sheet. The Digital Book Aisle contains an e-book about the Northern Coastal Batik of West Java, which is presented in the form of a 3D book. Figure 5 is a display from the Book Aisle menu.



Fig. 5. Book aisle.

The book hall containing information in the form of e-books about the North Coast Batik of West Java consists of Cirebon Batik, Kuningan Batik, Indramayu Batik, and Subang Batik. Information contained in the book aisle is information on the names of batik and typical patterns from Cirebon, Kuningan, Indramayu, and Subang regions. Each region has different patterns from the others. This is the uniqueness of batik, where each region has a distinctive pattern taken from the cultural and natural roots of the region concerned. The book hallway also contains information about the value of the local wisdom of each pattern presented. This information is expected to be a source of inspiration for students in making distinctive motives for each region.

Book aisles that can be accessed by students are interactive, where students can choose and sort information desired and based on learning needs. The characteristics of Digi_Learnik that are designed to be dynamic and interactive can make learning more interesting, fun, and effective. This condition is possible because the time needed by students in e-learning pages is more effective than students working in digital archival pages that tend to be static. What is meant by effective is in the process of achieving learning performance [24].

Figure 6 is a display of the video screen and Fig. 7 is the video player display. In this section, the Digi_Learnik application contains videos of batik on the north coast of West Java taken from YouTube with a selection using the algorithm, so the videos displayed are relevant to learning and up to date. In this context, students can freely choose the information or material needed for enriching batik learning. Unlike the information in the book aisle, in this section learning material that can be accessed relates to information in the form of videos, for example, the process of making batik.



Fig. 6. Video screen page.



Fig. 7. Video player Digi_Learnik.

Abundant information in the form of animation, audio-visual, and video presented in the Digi_Learnik application in this section requires students to have ICT competence and ICT self-concept [25] so that the information sought is effective and efficient to support learning enrichment or sharpen students' skills.

Figure 8 is a part of the Digi_Learnik application called Scientific sheets. In this section, the information presented contains the results of scientific research and articles about batik north coast of West Java. Information in the form of scientific articles from research results is expected to help students to get the latest information in the field of batik. This information is very important, because of the development of batik both in terms of raw materials, motives, colouring, and how to make it has undergone several changes. Research on batik in the context of Indonesia's unique world cultural heritage must have its own place, including publishing it. Information about batik with the value of local wisdom becomes part of the process of cultural transformation between generations in the context of sustainability education [26].



Fig. 8. Scientific writing page.

The Digi_Learnik application, which is designed as a whole is focused on providing learning about the history of batik, batik technology, the philosophy of batik and batik arts. Based on studies by Cheng et al. [27], the Digi_Learnik principle in the form of digital documentation will have a longer and more lasting shelf life and can be distributed in a wider range. The use of digital media, in addition to having to pay attention to technological aspects, must also pay attention to the content arrangement called pedagogical technological content knowledge [28], as well as pedagogical guidelines [29]. According to Earley-Spadoni [30], Widiaty et al. [31] and Styliadis and Vassilakopoulos [32], the Digi_Learnik design utilizes the concept of digital storytelling and able to visualize the current history and past information that needs to be known by the young generation.

4. Conclusions

The Digi_Learnik application, which is designed as learning media in the digital library platform is able to provide complete, actual, interesting information, and is part of the transformation of the value of local wisdom in the present context. Digi_Learnik implementation requires digital competence, ICT literacy and ICT Self-Concept from students. Digital learning provides various facilities for teachers and students to learn batik more comprehensively. Digital information (Digital Documentation) makes information about the value of batik local wisdom stored more lasting and distributive and has a wider range of reach.

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