

## **CURRICULUM INNOVATION AT A VOCATIONAL HIGH SCHOOL: A DIGITAL LIBRARY FOR BATIK LEARNING**

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### **Abstract**

This study aims to design a technology application in the form of iconic batik digital library for batik learning in Vocational High Schools as a part of curriculum innovation. The making of this application is intended to enrich learning resources especially about West Java Batik which has been very limited. The application, namely The *digi\_litikon* application, is a web-based digital library application. The main frame of developing the *digi\_litikon* application is to apply the waterfall model of Software Development Life Cycle (SDLC) method, which consists of system engineering, analysis, design, coding/implementation, testing, and maintenance. The application development process uses a framework called code ignitor (CI). The database used is My-SQL. The results of this digital library application designing consist of digital-book room, audio-book room, and video-book room, each of which has virtual facilities like a common library but in a digital platform setting. The design of this iconic batik digital library application is an alternative learning resource which is innovative, interesting, and applicable across space and time.

Keywords: Batik learning, Curriculum innovation, Digital library, Web-based.

## 1. Introduction

Learning resources in the form of digital libraries are starting to become a trend in various world educational institutions in line with the development of increasingly sophisticated technology of information. One of the terms that emerges related to this digital library is distance education services with the principles of learning services anywhere and anytime [1]. Digital Library is also identified with virtually integrated information services that are able to provide integrated information services in a virtual form and can store databases in bulk [2]. Digital Library is seen as the most logical alternative to be able to support education and make it an abundant, multimedia, and safe source of learning that will not be damaged since it is digital.

Digital Library is also considered as a learning resource providing a lot of advantages in terms of knowledge transmission and transformation in a mass and broad manner influencing ICT skills needed in the future [3]. Digital Library allows storing large amounts of data in the form of mass digitalization with various data categories, namely central data archives, central application services and harmonization of the information systems [4]. Another advantage that digital library has is being able to be updated anytime, anywhere and even by anyone who has such concentrations on those fields. Digital Library can be a model of sharing knowledge in a global context, a platform for sharing knowledge and experiences from scholars around the world.

There are some principles that need to be considered in developing this digital library including the aspects of managing and presenting information to suit the user needs. Information and knowledge management aspects as well as cataloguing and classification of information are considered as important [5]. Digital Library must have standardization in the form of aspects of presenting information with the principle of critical thinking and have adequate open access facilities [6]. The data source contained in the digital library consists of two main categories, namely primary services in the form of documents and secondary services in the form of bibliography and library information systems [7].

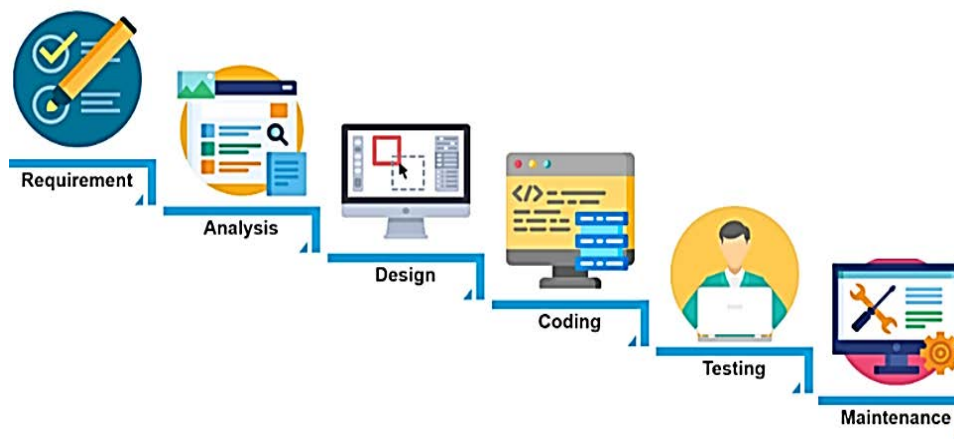
Various studies on digital libraries, especially during implementation in various fields, provide interesting results. Digital Library which is also called an automated library also needs to provide staff or operators who have adequate competence in the field of information technology [8]. In a whole, the component that must be considered in the design and implementation of digital libraries are experiences in computer use, domain knowledge, English literacy and interest in publishing [9]. Technically, digital library design needs to pay attention to aspects of usability and enjoyment [10], local autonomy [11], informativity [12], and pay attention to aspects of perception of the relevant social group [13].

In terms of curriculum innovation, digital library plays an important role since it is a crucial part of innovation, particularly one in relation with the development of Information and Communication Technology (ICT) [14]. It is well-known that in this digital era, learning is better when it is self-directed [15]; this way, students have a good opportunity to be independent learners. In addition to self-directed learning, authentic learning is also an important element in vocational education [16] as it is a part of curriculum innovation in vocational education as well [17].

This study aims to design a Digital Library application for learning Batik in Vocational High School as a part of curriculum innovation, considering that the implementation of a digital library or automated library for education, particularly vocational education, is still very limited. This study is expected to be a digital learning resource for students in vocational schools that is more enjoyable, contains relatively abundant material, and can be accessed to be read and studied anywhere and anytime as a reflection of a successful curriculum innovation. Thus, this study is generally carried out with the stages of analysis of application development needs, application development, and application testing.

## 2. Methods

The Digi Litikon is a web-based digital library application. There is the main frame used to develop the digi\_litikon application which is to use the water development life cycle (SDLC) method of the waterfall model [18] (Fig. 1) consisting of system engineering, analysis, design, coding/ implementation, testing, and maintenance [19, 20]. The application development process uses a framework CodeIgniter (CI). The database used is My-SQL. Also, CodeIgniter as a web application framework that is open source that is used to build dynamic PHP applications is also used [21].



**Fig. 1. Software Development Life Cycle (SDLC) method with waterfall model.**

This application is made as a learning medium for batik. In this application, there is a collection of digital books in the form of e-books, audiobooks, and video books. E-books are books in digital format, so they can be read on digital devices such as smartphones, tablets and computers. Audiobooks are narrated books or texts, while video books are books made in the form of videos, in addition to narration there is also visualization to make it easier to understand the contents of the book [22]. The Digi\_litikon application design can be seen in Fig. 2.

This application serves to facilitate users in finding books related to West Java batik, like entering a batik library. There are 3 (three) big categories that refer to the zoning division of West Java batik. The categories are Batik Pesisir Utara, Batik Pesisir Selatan, and Batik Non-Pesisir [23].

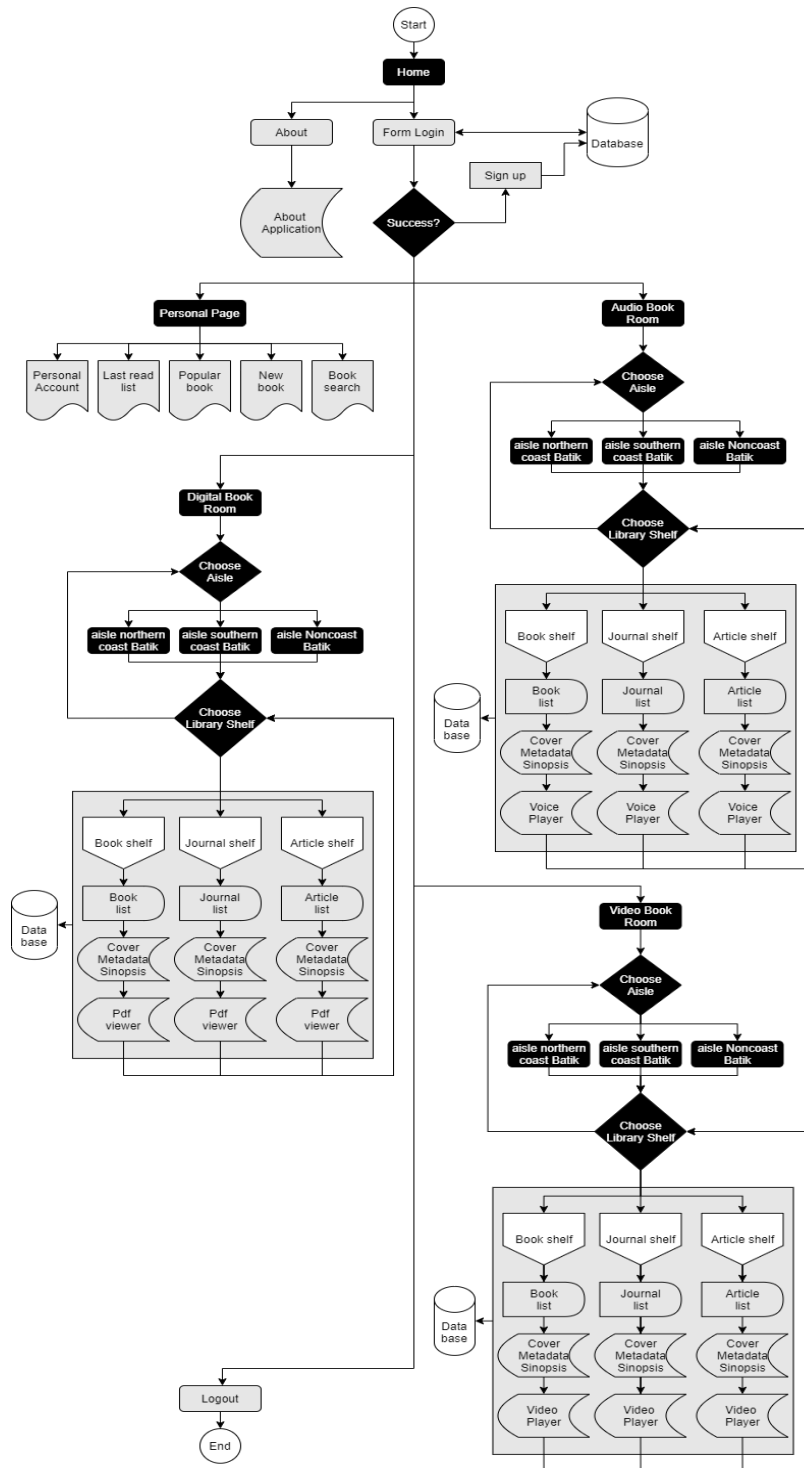
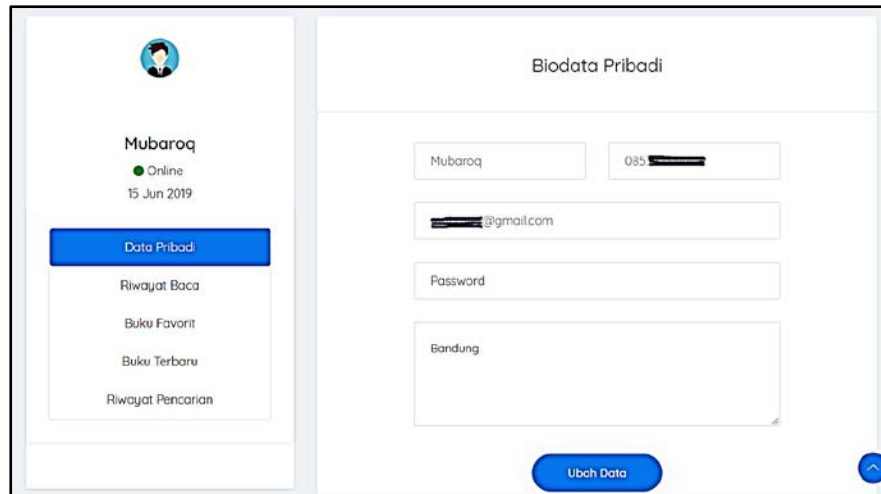


Fig. 2. The design of digi\_litikon system for users.





**Fig. 5. Personal page display of digi\_litikon for users.**

Specifically, the contents of the digi\_litikon application consist of several virtual space options. Users can choose the desired room, digital-book room (Fig. 6), audio-book room (Fig. 7), and video-book room (Fig. 8). The overall designing of this digital library application requires good digital collection and archival processing so that the data displayed is always updated and valid [24]. The digitization workflows aspect also needs attention in designing this digital library application [25].



**Fig. 6. Digital book room display of digi\_litikon.**

Figure 6 shows the virtual room of the digital books collection on batik originating from several regions in West Java (Batik from Cianjur City, Garut Regency, and Sukabumi Regency). Users can "borrow" and download the book with the specified procedures in the application. Users can "restore" the book by clicking on the personal page menu, clicking on the reading history menu, and clicking on the detail menu and returning it. This single page application is intended so that users have their own menu to access information in the application [26].

Each book displayed will contain information about a variety of unique batik patterns originating from the three regions. Each batik pattern is given the initial name and explanation of the philosophical meaning of the intended pattern. In addition, the book contains information about the batik industry in Cianjur City, Garut Regency, and Sukabumi Regency. This digital learning about batik is not only related to batik content but also related to information about cultural and industrial mapping which is very important for the process of relevance updating of the curriculum to the industrial world [23].

Figures 7 and 8 are other displays of digital content that exist in the *digi\_litikon* application. Display in this virtual room is not only in the form of text, but also equipped with audio that explains the content of the book which is additional information from the batik experts who are the batik industry owners. This information, although only in the form of sound, can add insight and understanding to students. The audio is also equipped with additional instrumental music from each region which can be an attraction and additional knowledge for students.

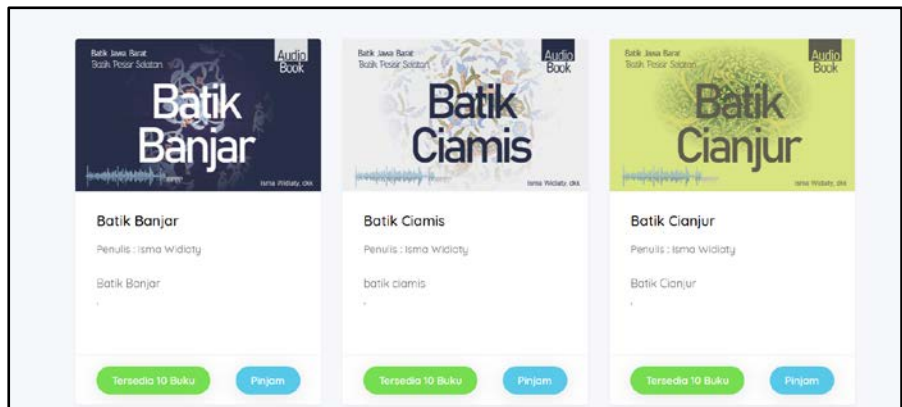


Fig. 7. Audio book room display of *digi\_litikon*.

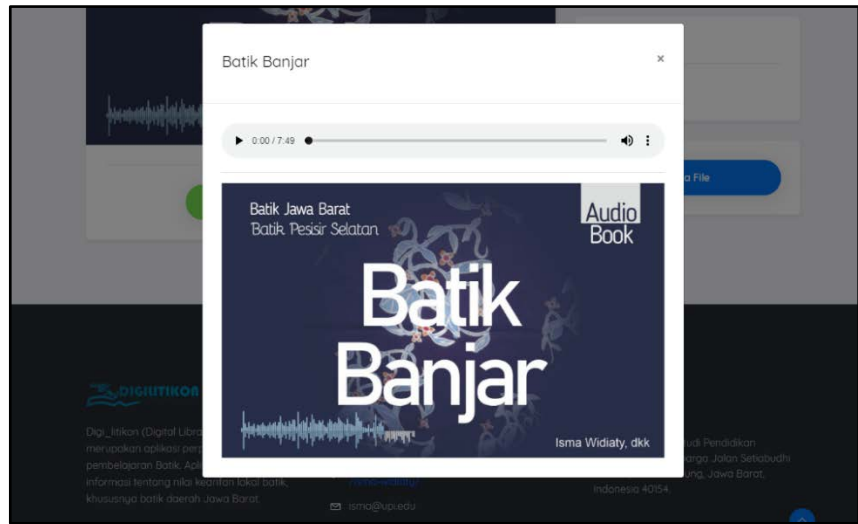


Fig. 8. Audio-book player of *digi\_litikon*.

Figures 9 and 10 are video book room pages containing information on batik videos that can be chosen and "borrowed" by the users. They can watch the provided videos by borrowing them first. The video book room contains batik information that is not only in the form of text and audio, but also in the form of a video display on batik making, live information recorded in the form of an explanation directly from the owner of the batik industry. This display will provide a more complete insight and understanding on how to make batik and information about the value of local wisdom of batik. The usability and usefulness aspects of this application, especially for students in vocational high schools, will make learning more meaningful [27]. In addition, the application is also proven to be able to cope with the issue of media limitation since students can explore what they wanted to through their devices.

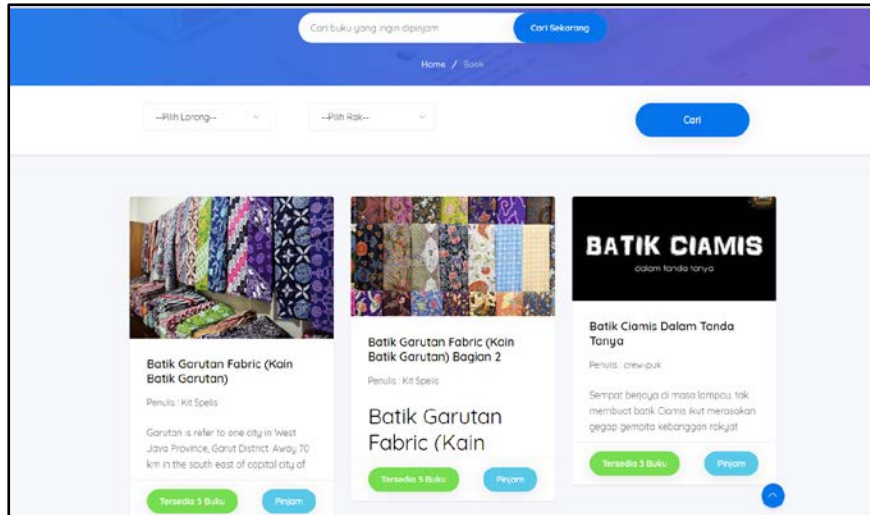


Fig. 9. Video book room display of digi\_litikon.

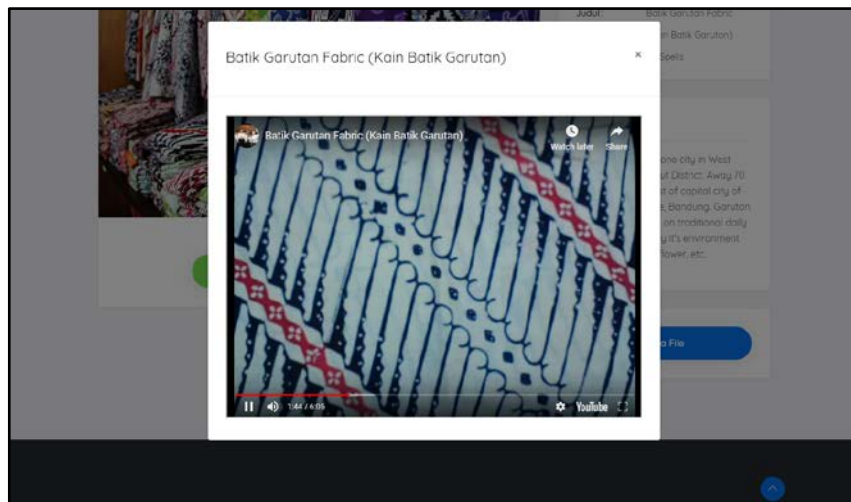


Fig. 10. Video book player of digi\_litikon.



The designing of batik digital library for batik learning in Vocational High School is expected to be an innovative and fun learning resource for students. This digital form of media is more massive and can reach wider society [28]. Several factors that need to be considered to optimize the digital-based learning are the pedagogical guidelines [29], the socio-communication aspects [30], and the digital humanities pedagogy [31]. The advantage of media in this digital platform allows the learning to be more interesting and up-to-date [32], where experts can contribute information through this application so that the nature of this application allows collaboration and partnership [33].

#### 4. Conclusion

Designing a technological application in a form of digital library of iconic batik for learning batik in vocational high schools aims to overcome the limitation of learning resources on Batik, particularly on batik books. The Batik Ikonik digital library is intended to enable students and other users to access Batik information in a more interesting platform, practical way, and unlimited time and space. The application is web-based making it accessible by various platforms either Android-based devices or desktop. The application is designed to be able to become a prototype of digital library accessible by several users with a possibility of information update by a lot of batik experts with a special feature to be developed further.

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