

DIGITAL GUIDEBOOK APPLICATION DESIGN ON PROJECT-BASED LEARNING IMPLEMENTATION FOR PARTICIPATORY CIVIC SKILLS STRENGTHENING

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Abstract

This study aims to describe the design of a digital guidebook application in implementing a project-based learning (PjBL) model in strengthening participatory civic skills. This research method employs design-based research (DbR), which involves stages of analysis, design, iteration, and reflection. The results of this study indicate that the design of the digital guidebook developed in the form of an application is declared valid and can be used. This is because the results of expert judgment and limited trials in the use of the digital guidebook application state that it can be used easily and can strengthen participatory civic skills. The impact of this research provides a new product that can be used as a PjBL learning guide. Recommendations for further research: It is hoped that this research can be continued to the trial stage on a large scale and implementation in the classroom, so that the benefits and improvements in content can be made to perfect it, so that the results can then be disseminated to the wider public.

Keywords: Application, Digital, Guidebook, PjBL, Participatory civic skills.

1. Introduction

Project-based learning (PjBL) approaches allow students to directly apply knowledge to civic issues, which is effective in increasing engagement and understanding [1, 2]. PjBL allows students to learn through direct engagement with current issues, such as human rights campaigns or constitutional analysis, thereby enhancing their civic skills and active engagement [3-5]. PjBL encourages students to engage in projects relevant to current social issues, which increases student motivation and engagement compared to traditional teaching methods [6, 7].

Low levels of information literacy and political knowledge can hinder the participation of young people in the democratic process, ultimately threatening the quality of democracy itself and increasing political apathy [8, 9]. Cases such as Constitutional Court Decision No. 90/PUU-XXI/2023, which sparked public debate and other controversial policies, demonstrate how legal decisions can significantly influence national political dynamics [10, 11]. The decline in Indonesia's democracy index from 6.53 in 2022 to 6.41 in 2023, along with issues such as the decline in press freedom and the weakening of the Corruption Eradication Commission (KPK), further underscores the challenges facing democracy in Indonesia [12, 13].

This study develops a digital guidebook application, a digital-based book designed to guide project-based learning for participatory civic skills strengthening using the Design-based Research (DbR) approach. The innovations of this research are: (i) developing a digital book to facilitate use, (ii) a digital book designed to guide project-based learning, and (iii) an application-based book designed to improve students' participation skills.

2. Literature Review

Figure 1 shows a series of knowledge digitalization kits frequently used in media formats, one of which is the creation of book applications. Media technology helps provide the functionality of books that can be used to explore information or knowledge [14]. KIT skills made in the form of digitalization make four components that can be utilized from using high-level technology, including: 1) digital communication, collaboration, and participation, 2) digital creation, problem-solving, and knowledge, 3) information, data, and media exercises, and 4) digital learning and knowledge [15, 16].

The KIT Proficiency model aligns with global digital competency frameworks such as the JISC Digital Capabilities Framework, which includes elements such as digital communication, collaboration and participation, digital creation, problem-solving and innovation, information, data, and media literacies, and digital learning development [17]. Several previous studies have found that these international frameworks consistently include digital competencies [18-20]. Thus, the KIT proficiency components reflect global consensus and offer relevant practical applications in the development of digital book applications.

3. Method

The method used in this study is the DBR approach through the stages of analysis, design, development, and evaluation [21]. The analysis was carried out in seeing the need for a guidebook in implementing project-based learning developed in the

form of an application and can be accessed on Android, the design that was made was first compiled material, and formed into a guidebook, then developed into an application form that can be accessed via Android and validated by media experts and language experts. In this study, implementation has not been carried out as a broad evaluation process. In this case, the feasibility and readability of the use of this Android-based guidebook have only been tested by ten users. This makes it necessary to have further research in evaluating it on a wider scale and implementing it directly in the learning process.

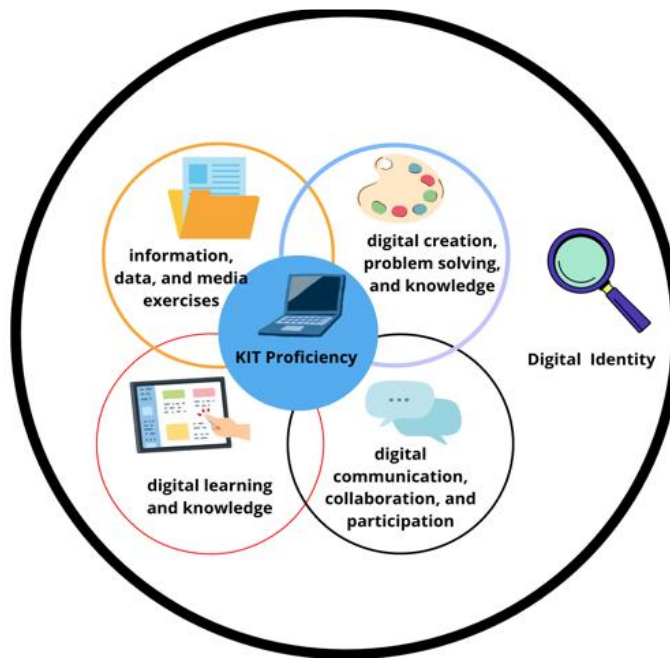


Fig. 1. KIT Proficiency for digital book.

4. Results and Discussion

Figure 2 is a flowchart that informs the process of designing an Android-based guidebook. The basic concept is first created in the form of a regular book file and saved in PDF format. After the guidebook is completed, begin to form it into an Android-based application, where the PDF file is converted into JPG format. If all pages are in JPG format, then enter the Unity application to form the application.

In Unity, a scene is created where the script and the space for creating the book application to be developed are formed. In the selected scene, a canvas is created for the application development from several JPG files that have been converted from the PDF guidebook. On the canvas, a house is created as the initial gateway to enter the application.

From the house, a place will then be provided to build a script as a command to run the page in the guidebook that will be created for the application. In addition to the space, the home section is also provided with a special button if the user wants to exit the application. If the script has been created, the control manager on each page will be saved with a next button to continue to the next page, a preview button

to return to the previous page, so that if you want to exit the application, the page must return to the home page and exit.

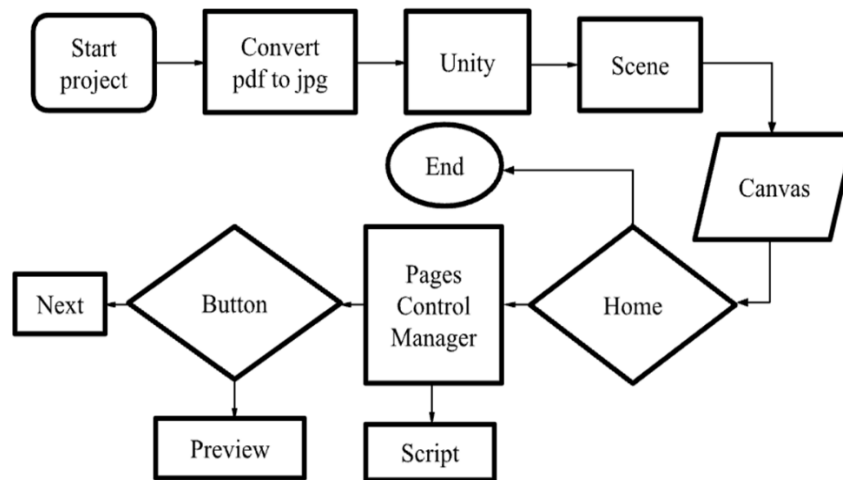


Fig. 2. Flowchart application for a guidebook.

Figure 3 shows the appearance of the guidebook that has been built into an application and used on an Android device. Figure 3a shows the home page, where on this page there are two buttons, namely exit to exit the application and start to start using the guidebook application. Then, Figure 3b shows the second page after the home page; on this page, there is information about the compiler of the guidebook. Meanwhile, Figure 3c is the table of contents page, which provides information about the number of materials on the pages in this guidebook. This application book consists of 66 pages, so the images and scripts used are also 66 JPG files that are combined into one application. Meanwhile, Figure 3d shows the guide activities in the PjBL model developed in this book. This page is essential because it shows important guidelines for readers to study to understand the stages that will be carried out when using project-based learning.

This application-based guidebook is intended for students taking the Citizenship Education (PKn) course from diverse study programs such as Primary School Teacher Education, Management, and Nutrition. It serves as a lecture reference. Findings from its implementation show that students can systematically follow all stages of the PjBL model, starting from identifying issues to planning project follow-up. The handbook assists students in grasping digital literacy concepts, tracking public issues, and influencing policies integrated into their projects [22-24]. Beyond facilitating access to learning materials, the app also encourages independent learning outside class hours. The merger of digital literacy with the PjBL model allows students to participate actively in addressing real-world community problems through their own projects [25, 26].

This approach is consistent with 21st-century educational trends that prioritize collaboration, creativity, and critical thinking [27, 28]. Supported by technology, the civics learning process becomes more interactive and contextual, promoting the sustainable development of participatory civic skills [29, 30].



Fig. 3. Guidebook application display, (a) home, (b) compiler page, (c) table of contents, and (d) worksheet or PjBL guide.

5. Conclusions

This study aims to present the design of a digital guidebook application to support the implementation of a project-based learning (PjBL) model in enhancing participatory civic skills. The research employs a design-based research (DbR)

approach, consisting of the stages of analysis, design, iteration, and reflection. The application was declared valid, effective, and suitable as a PjBL guide, but requires wider trials for improvement.

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