

## Development of A School Website Using The Laravel Framework as A Platform for Information and Promotion

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**Abstract**

The development of information technology in the digital era requires educational institutions to adapt in the dissemination of information and promotion. PKBM Tunas Harapan Jaya currently still relies on conventional media such as brochures and banners that have limited reach and relatively high costs. This causes the dissemination of information to the wider community and prospective students to be less effective and efficient. This study aims to design and build a school website based on the Laravel framework as a digital information and promotion medium for PKBM Tunas Harapan Jaya. The research method used was Research and Development with a Prototype system development model. The development stages include needs analysis, system design, database design using MySQL, interface implementation, and system testing. The result of this study is a web-based information system that presents the school profile, educational programs, activity galleries, the latest news, and registration information. This website is designed to be easily managed by the school and easily accessible to the general public. With this website, it is hoped that the promotional reach of PKBM Tunas Harapan Jaya will be wider, information delivery will be more real-time, and the institution's credibility image in the eyes of the public.

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### INTRODUCTION

In today's digital era, information technology has become an integral part of various sectors of life, including non-formal education, where access to information via the internet increasingly dominates people's behavior patterns (Wiyono et al., 2025). Internet penetration in Indonesia reached 79.5% in 2024 with 221 million users, and is predicted to increase to 80.66% or 229.4 million by 2026, indicating that the majority of the population relies more on digital platforms to seek information than conventional methods (Chen et al., 2025). This creates a significant opportunity for educational institutions to increase the reach of their services through efficient digital media.

Focusing on non-formal education, Community Learning Activity Centers (PKBM), as institutions that provide access to education for the wider community, are faced with the demand to adapt to technology to improve service quality and program promotion. However, many PKBM still rely on conventional media such as brochures and banners, which limit the reach of information and promotion to the local area (Aghababaeyan et al., 2023).

At PKBM Tunas Harapan Jaya, located on Jl. Menjangan IV No. 25, Pedurungan, Semarang City, this problem is increasingly apparent due to reliance on conventional media, resulting in slow and limited information dissemination, specifically for brochures, banners, posters, and billboards, according to staff interviews in 2026 (Dadang et al., 2026; Al-Abdallah,

2025). These challenges include geographical limitations, high costs, and a lack of interactivity (Pawar, 2024; Al-Abdallah, 2025), which hinders enrollment growth and program sustainability (Dadang et al., 2026; Pawar, 2024).

Several previous studies have examined the development of school websites as information and promotional media. Nidhom (2019) demonstrated that website-based information systems significantly improve the effectiveness of academic information dissemination compared to conventional methods, with Black Box testing confirming reliable system functionality. Research by McDonough and Shaw (2012) emphasized that educational institutions require adaptive digital platforms to meet the information needs of prospective students who increasingly rely on online sources. Furthermore, Laravel Team (2024) documented that the Laravel framework provides built-in security features such as CSRF protection and Eloquent ORM, making it a preferred choice for developing secure and scalable school websites. Berg and Lune (2004) highlighted that qualitative approaches in system development help identify user needs more accurately, particularly in educational contexts where diverse stakeholder requirements must be accommodated.

Prior implementations of school websites in various educational settings have shown positive outcomes. Studies utilizing the Laravel framework have reported advantages in data security, real-time content management, and ease of system maintenance (Laravel Team, 2024; MySQL, 2024). Czichos and Saito (2006) noted that measurement and testing methods, including usability evaluation, are critical for ensuring that technological products meet end-user expectations. Wilson (1990) further emphasized that systematic research approaches are essential for developing reliable and effective information systems. In the context of non-formal education, research by Sugiyono (2019) confirmed that the Research and Development (R&D) method with a prototype model is particularly suitable for developing educational technology products because it allows iterative improvement based on user feedback.

Despite the wealth of research on school website development, a significant gap exists in the application of the Laravel framework specifically for Community Learning Activity Centers (PKBM) in Indonesia. Most prior studies have focused on formal educational institutions such as elementary and secondary schools, while non-formal education providers like PKBM have received limited attention. Additionally, existing research has not comprehensively addressed the integration of information dissemination and promotional functions within a single Laravel-based platform tailored to the unique needs of PKBM, which often face budget constraints and limited technical staff. Therefore, this study aims to fill this gap by designing and developing a school website using the Laravel framework as an integrated platform for information and promotion at PKBM Tunas Harapan Jaya.

As a solution, website development using the Laravel framework is proposed to provide an effective information and promotional medium, accessible anytime and anywhere, thereby increasing audience reach and operational efficiency of the PKBM. With this approach, PKBM Tunas Harapan Jaya is expected to build a modern image and support the advancement of non-formal education for the community.

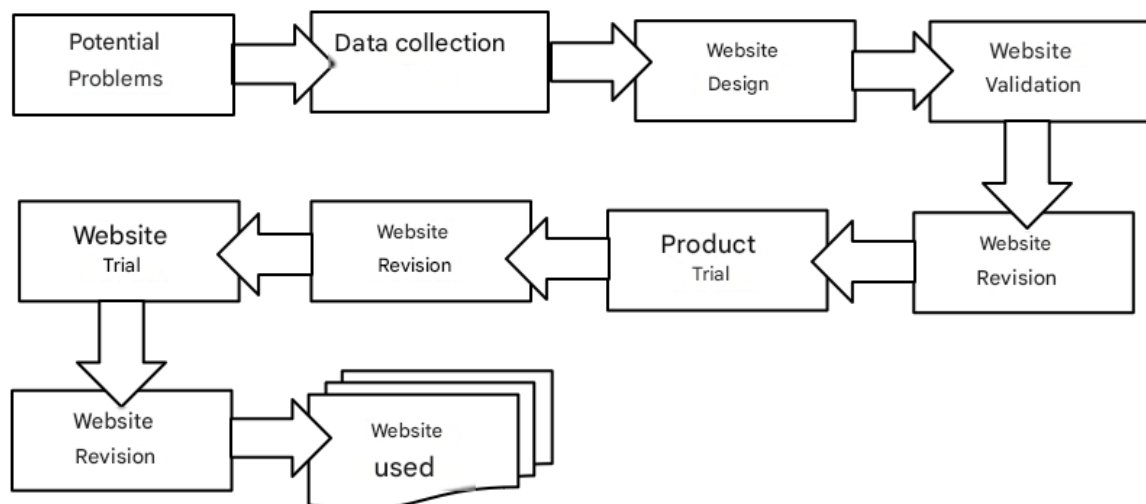
This research aims to design and build a Laravel-based school website as a digital information and promotion medium for PKBM Tunas Harapan Jaya, as well as test its functionality through Black Box Testing and usability aspects from a user perspective. The benefits of this research include: theoretically, enriching the literature on information system

development in non-formal education; practically, providing a digital platform that is affordable, easy to manage, and able to expand the reach of promotions without geographical restrictions and reduce dependence on print media; and methodologically, validating the combination of Prototype model, Black Box Testing, and usability evaluation as an effective approach in the development of educational institution websites.

## METHOD

In perfecting the system to be created, a method was needed to create a system that will later become software, which is used to be more efficient. The research method used in this study is the research and development method (R&D) (Sugiyono, 2020) with a prototype system development method to produce a product in prototype form.

This development model has relatively long stages because there are 10 implementation steps, namely: (1) Potential problems (2) Data collection (3) Website design (4) Website validation (5) Product revision (6) Website trial (7) Website revision (8) Usage testing (9) Website revision (10) Website use. The research step chart is as shown in the following figure:



**Figure 1. R&D Research Stages with a Prototype Model**

Source: Adapted from Sugiyono (2019) Research & Development model and the Prototype model, modified for PKBM website development purposes

Explanation of the diagram above:

### Potential and Problems

Research begins with potential and problems. Potential is the identification of problems or needs that become opportunities to create or develop a product being researched. This potential is the beginning of the innovation process, where we observe unsolved problems or unmet needs in the surrounding environment. These problems can be addressed through R&D (Research & Development) through research, resulting in the discovery of effective models, patterns, or integrated management systems that can be used to address the problem.

## **Data Collection**

After establishing factual and up-to-date potential and problems, the next step is to collect relevant information to gain a deeper understanding of the problem or need, which will be used as a basis for designing the research topic.

The methods used in the data collection process are as follows:

### a. Observation

Observation can be conducted by directly observing the object and systematically recording everything about the object being studied.

### b. Interview

An interview is a process of gathering information by asking a number of questions verbally or directly, to be answered verbally or directly.

## **Website Design**

Creating a website design based on the collected data, taking into account the features, functions, and specifications to be used.

## **Website Validation**

Design Validation is the process of evaluating the initial design to ensure that it meets the identified needs. If there are any deficiencies or errors, the website design needs to be revised.

Website validation can be carried out by bringing in several experts or experienced personnel to assess the new product being designed.

## **Website Revision**

After verifying the website design through discussions with other experts, the next step is to make improvements or adjustments to the design based on the validation results to ensure the product being studied is more in line with the research objectives.

## **Website Testing**

The website design that has been implemented into program code cannot be used immediately; it must go through a functional testing phase. Testing at this stage uses the Black Box Testing method (Aghababaeyan et al., 2023) to ensure all system features, inputs, and outputs operate according to requirements specifications without reviewing the internal code details. This testing focuses on the validation of the registration form, the functionality of the admin dashboard, and the accuracy of the information displayed on each website page.

## **Website Revision**

If the test results indicate any shortcomings or strengths, the website will be evaluated to improve the quality and performance of the product.

## **Usability Trial**

After the website has passed the functional test, testing is conducted under real-world conditions to obtain feedback from end users. This stage uses the System Usability Scale (SUS) instrument or a user perception-based questionnaire to measure usability, efficiency, and user satisfaction when interacting with the website. Respondents for this test include Tunas Harapan Jaya Community Service Center (PKBM) staff as data managers and prospective students as information seekers.

## **Website Revision (Post-Usability Trial)**

After making final adjustments based on the user test to ensure the website meets user needs.

## The website is ready for use

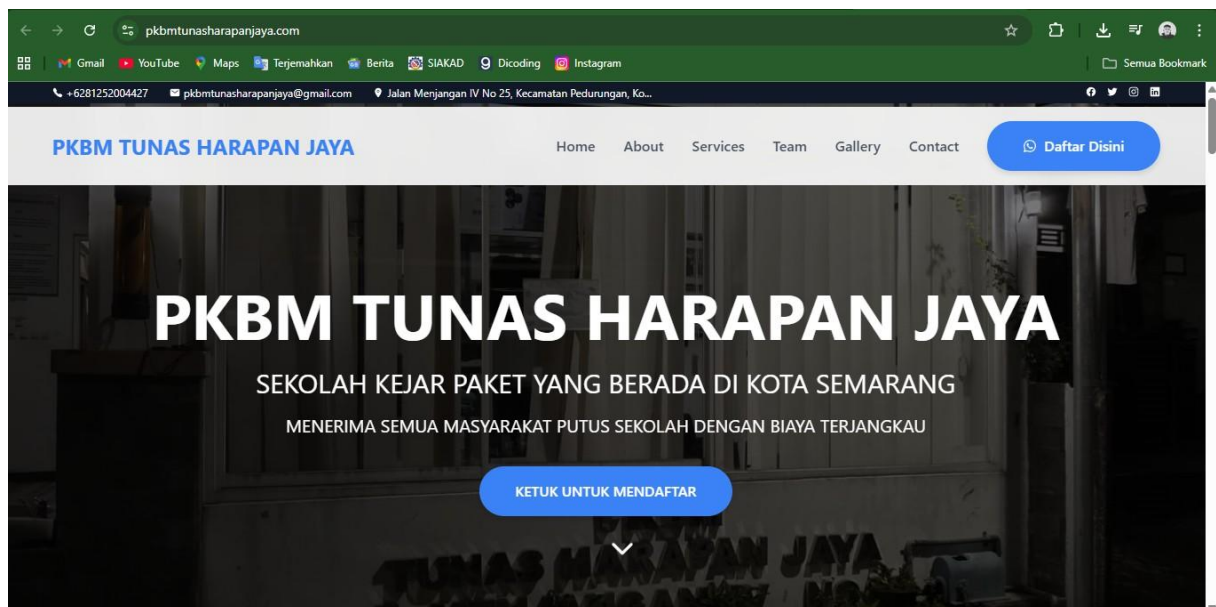
After undergoing various tests, the website was declared effective and suitable for use. The website meets quality standards and is ready for large-scale or mass production for marketing.

## RESULTS AND DISCUSSIONS

This chapter will explain the results of the system development stages and provide an in-depth discussion of the functionality of the Tunas Harapan Jaya Community Learning Center (PKBM) website, which was created using the Laravel framework.

### Website Interface Implementation

The result of this system design is a school website that functions as a digital information and promotional medium. The homepage is designed to provide a professional first impression for prospective students, displaying the institution's profile, educational programs (Packages A, B, and C), and the latest news about PKBM activities. This interface implementation uses Laravel's Blade templating engine to ensure design consistency across all pages.

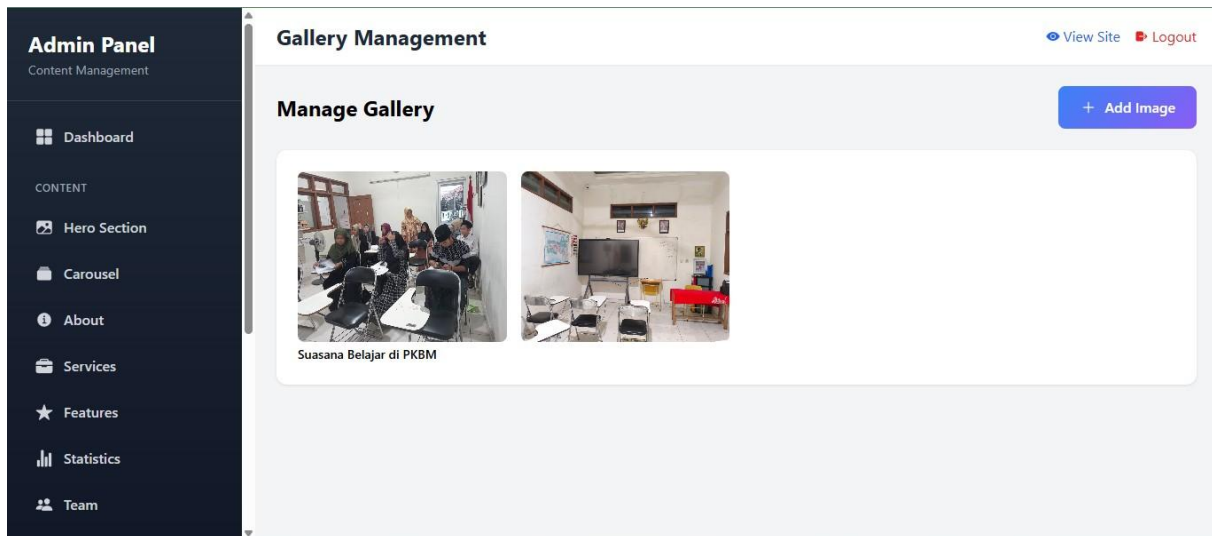


**Figure 2. Main Page View**

Source: Research documentation, result of PKBM Tunas Harapan Jaya website implementation using the Laravel framework (2025)

### Functional Testing Results (Black Box Testing)

To ensure the website operates according to the defined requirements, testing was conducted using the Black Box Testing method. This testing focuses on feature functionality without examining the internal code structure. The primary focus of the testing included the admin content management system and the accessibility of the activity gallery.



**Figure 3. Content management.**

Source: Research documentation, result of Content Management System (CMS) feature implementation on the PKBM Tunas Harapan Jaya website (2025)

Based on the test results, all key features were found to be functioning properly. This demonstrates that the use of the Laravel framework provides a reliable level of security and data validation through built-in features such as CSRF protection and Eloquent ORM.

The integration of information technology through this Laravel-based website demonstrates that digital adaptation is crucial for non-formal educational institutions to increase their credibility in the eyes of the public. This research finding aligns with the development theory of the digital era, which demands efficiency in information dissemination. Compared to legacy systems, this website offers advantages in terms of rapid data updates and broader audience reach.

## CONCLUSION

This research successfully designed and built a school website based on the Laravel framework for PKBM Tunas Harapan Jaya as a solution to the limitations of conventional promotional media. Based on the results of the development and testing, it can be concluded that: System Effectiveness: The implementation of this website technically meets the institution's functional requirements, as evidenced by Black Box testing, which showed that all key features, such as content management, activity galleries, and registration information, functioned properly and stably. Digital Transformation: The use of the Laravel framework provides advantages in terms of data security and ease of real-time information management, significantly expanding the reach of school promotions beyond the geographical limitations of previous print media. Institutional Impact: The presence of this digital platform enhances the credibility and modern image of PKBM Tunas Harapan Jaya in the eyes of the public, while providing more efficient access to information for prospective students.

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