

Design and Development of the LPKA (Student and Alumni Development Institute) Website to Improve Student and Alumni Services

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ABSTRACT

This study aimed to design and develop a website for the Student and Alumni Development Institute (LPKA) of Universitas Muhammadiyah Tasikmalaya as a digital service platform that integrates student and alumni activities, improves data management, and facilitates institutional communication. The project adopted the Research and Development (R&D) approach combined with the ADDIE model, consisting of analysis, design, development, implementation, and evaluation stages. The website was developed using WordPress due to its flexibility, scalability, and accessibility, supported by various plugins and custom features to meet institutional needs. Functionality testing through the Black Box method confirmed that all features—such as activity publication, scholarship announcements, report uploads, and discussion forums—operated correctly. Validation by software experts (84%), institutional staff (91.5%), and students/alumni (87.3%) demonstrated a high level of usability and system reliability. These findings indicate that the LPKA website effectively improves service efficiency, enhances transparency, and fosters stronger engagement between the university, students, and alumni. The system also serves as an example of how CMS-based development can be applied to support digital transformation in higher education. Future enhancements should include the integration of academic databases, the development of automated notification features, and the implementation of analytics tools for real-time monitoring to ensure long-term adaptability and institutional sustainability.

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1. Introduction

The rapid advancement of information technology has reshaped the higher education landscape, particularly in data management, information accessibility, and institutional communication. Institutional websites are no longer limited to static information delivery but have evolved into dynamic, integrated, and user-oriented digital service systems. An integrated website enables faster information flow and fosters active engagement between universities, students, and alumni (Mustafa, 2022). The transition toward responsive, CMS-based digital platforms has become a strategic requirement for improving service quality and accessibility (Maryam *et al.*, 2025). Within Universitas Muhammadiyah Tasikmalaya, the Student and Alumni Development Institute (LPKA) plays a key role in coordinating student organizations, publishing scholarship programs, and maintaining alumni relations. However, LPKA's operations remain largely manual, resulting in several inefficiencies such as delayed information dissemination, fragmented service delivery, data redundancy, and limited real-time accessibility. Addressing these challenges requires a web-based information system capable of integrating all LPKA services into a single accessible platform. Previous studies have demonstrated the effectiveness of web-based systems in enhancing institutional performance. Mustafa (2022) confirmed that integrated websites improve academic and student service efficiency, while Sanjaya *et al.* (2024) developed a web-

based alumni information system that streamlined communication and data management. WordPress, as an open-source content management system, has proven effective for institutional website development due to its flexibility, scalability, and ease of maintenance (Azizah *et al.*, 2025; Dewi & Putri, 2025; Maryam *et al.*, 2025). The integration of well-designed user interfaces and user experiences has also been shown to significantly influence website usability and effectiveness (Maulana & Darmanto, 2024), and optimized digital content further enhances information delivery (Nugraha, 2025). In the educational context, Agustina *et al.* (2024) demonstrated that website implementation can expand institutional visibility and improve public engagement. Despite existing academic information systems at Universitas Muhammadiyah Tasikmalaya, none specifically address LPKA's operational needs such as managing student activities, maintaining alumni forums, and disseminating scholarship information. Earlier research has largely concentrated on academic information systems or e-commerce applications (Islamiyah & Dedi, 2018; Manulang & Abdillah, 2017), indicating a gap in systems tailored for student and alumni service integration. This study therefore focuses on designing and developing an LPKA website using the WordPress platform as a practical and scalable solution to improve service efficiency, ensure real-time accessibility, and strengthen institutional relationships between students, alumni, and the university. The research applies the Research and Development (R&D) approach with the ADDIE model—comprising analysis, design, development, implementation, and evaluation—as it provides a systematic structure for iterative improvement and user-centered validation (Firdaus *et al.*, 2022; Okpatrioka & Arrahmaniyah, 2025). The outcomes are expected to contribute to enhanced institutional digital management, improved accessibility for users, and more efficient data-driven decision-making within LPKA.

2. Methodology

This study applied a Research and Development (R&D) approach integrated with the ADDIE development model, emphasizing an iterative process from problem identification to product evaluation. The R&D method was chosen because it enables researchers to produce functional outputs while verifying their effectiveness through systematic testing and refinement. As noted by Okpatrioka and Arrahmaniyah (2025), R&D involves a sequential process of analysis, design, validation, and evaluation to ensure the final product aligns with its intended objectives. This framework is particularly relevant for the development of digital systems, as it allows continuous feedback-based improvement and ensures practical applicability (Firdaus *et al.*, 2022). The ADDIE model—comprising Analysis, Design, Development, Implementation, and Evaluation—was adopted for its clear structure and adaptability. The analysis phase focused on identifying user needs and the operational challenges within LPKA's student and alumni services. The design phase outlined the website's architecture and user interface to ensure logical navigation and efficient content delivery. The development phase involved transforming the design into a functional website using the WordPress platform, supported by plugin integration and custom code adjustments to enhance usability (Ansar & Fatmasari, 2020). The use of WordPress follows the recommendation of Manulang and Abdillah (2017), who emphasized its practicality and flexibility in web-based information system development. The implementation phase consisted of controlled testing among target users—students, alumni, and institutional staff—to evaluate usability, accessibility, and performance. The evaluation phase gathered structured feedback, identifying strengths and necessary improvements before broader deployment. To ensure reliability, system functionality was tested using the Black Box Testing method, which assesses whether software features perform as intended without

examining internal code logic (Jibril, 2014). The selection of ADDIE as the core development model was appropriate for this research because it allows iterative evaluation, provides measurable deliverables, and supports user-centered design. Compared with other R&D models, ADDIE offers a more pragmatic and systematic approach suitable for WordPress-based projects aimed at enhancing digital services in higher education (Firdaus *et al.*, 2022).

3. Results

The design and development process of the LPKA website was conducted through a systematic sequence guided by the ADDIE model. The website was built using WordPress as the primary content management system (CMS) due to its flexibility, ease of maintenance, and broad plugin ecosystem that allows seamless integration of diverse functionalities. The selection of WordPress also aligned with prior studies emphasizing its efficiency for institutional web development and open-source adaptability (Ansar & Fatmasari, 2020; Manulang & Abdillah, 2017). To enhance its capability, several supporting plugins and external integrations were incorporated based on the operational needs of the Student and Alumni Development Institute (LPKA). The details of the selected tools are summarized in Table 1.

Table 1. Platform and Tools Used in Website Development

Component	Name	Main Function
Platform	WordPress	Open-source content management system offering flexibility and easy content administration.
Theme	Corporate Education	Provides a responsive interface aligned with the institution's visual identity.
Plugin	Advanced Custom Fields	Adds custom fields to adapt content structure to institutional needs.
	Code Snippets	Enables secure PHP function insertion without modifying core files.
	myStickyElement	Displays contact information (Instagram, email) persistently on the interface.
	User Role Editor	Manages user access levels (institution head, division head, administrator).
	Theme My Login	Provides integrated login and logout pages consistent with the site's theme.
	Wise Chat	Offers an interactive communication forum for students, alumni, and institutional administrators.
External Integration	Google Calendar	Displays real-time institutional schedules and events.

The website's structural design was organized to align with institutional requirements and user access patterns. The menu structure was designed to provide intuitive navigation for administrators, division heads, students, and alumni. Each section accommodates essential institutional information, reporting mechanisms, and communication tools, as summarized in Table 2.

Table 2. LPKA Website Menu Structure

Main Menu	Description
Home	Displays the LPKA profile, institutional objectives, and organizational structure.
Head of Institute	Contains institutional programs, achievements, and report upload features.
Division Head	Provides access to division-specific work programs, reporting forms, and related submenus: entrepreneurship, creativity and student talent, and career and counseling.
Questionnaire	Provides access to user satisfaction and evaluation forms.
Communication Forum	Functions as an open discussion space for students, alumni, and staff.
Login/Logout	Manages authentication and user access levels according to assigned roles.

System design was further validated through the Unified Modeling Language (UML) approach to ensure consistency between conceptual models and technical implementation. The modeling process involved several diagrams representing functional interactions between system actors and major operations. The Use Case Diagram visualized relationships among the four main actors—administrator, head of institute, division head, and student/alumni—detailing their respective privileges such as system management, report uploads, and communication forum participation. Supporting models included Activity Diagrams illustrating system workflows for login processes, report uploads, and coordination mechanisms, as shown in Figures 1–6.

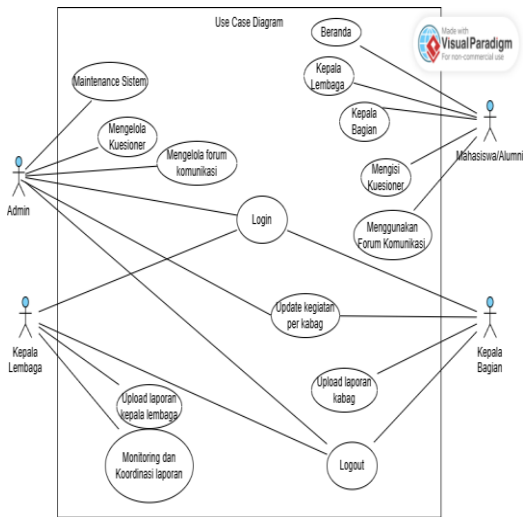


Figure 1. Use Case Diagram

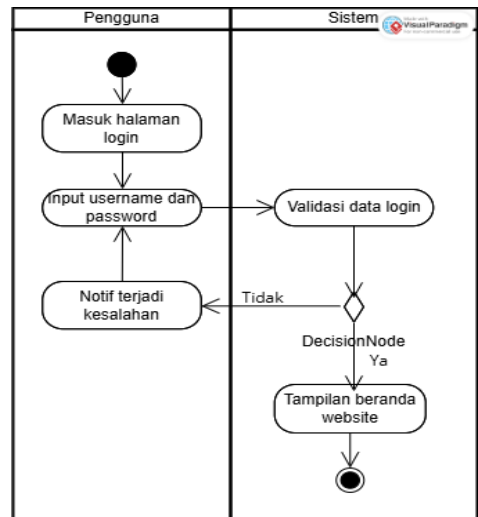


Figure 2. Activity Diagram: Login Process

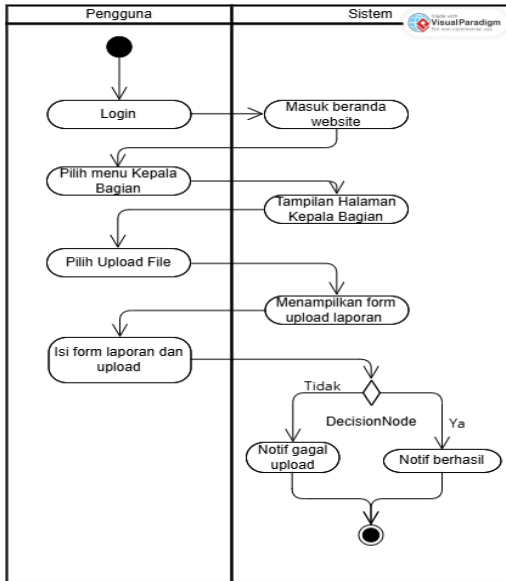


Figure 3. Activity Diagram: Report Upload by Institute Head

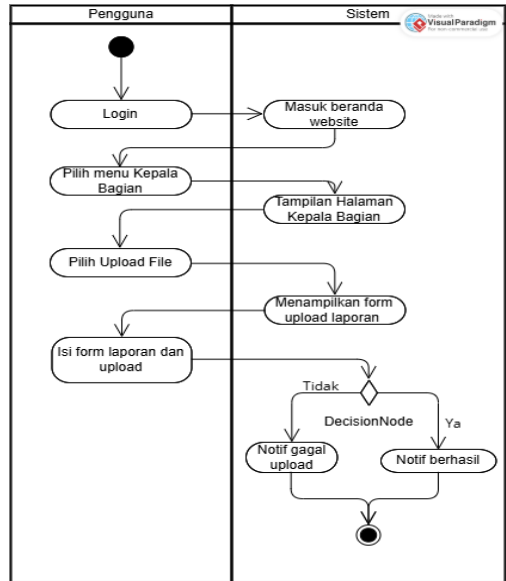


Figure 4. Activity Diagram: Report Upload by Division Head

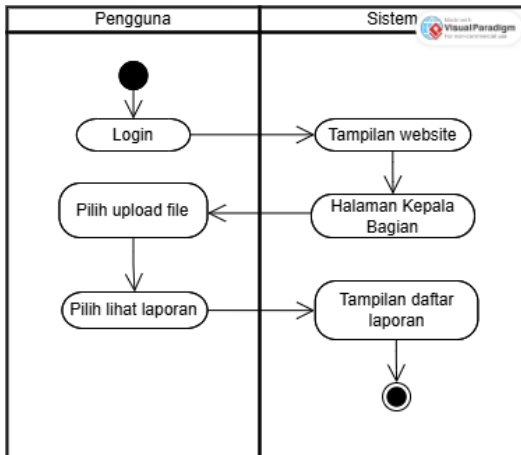


Figure 5. Activity Diagram: Monitoring and Coordination Workflow

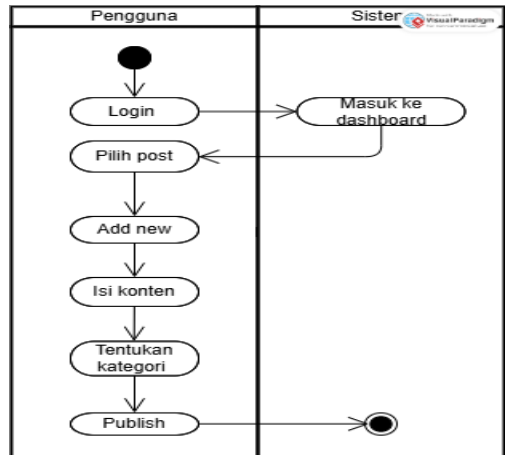


Figure 6. Activity Diagram: Division Activity Upload

After completing the design and configuration stages, the website was deployed on the official subdomain of Universitas Muhammadiyah Tasikmalaya. User role settings were implemented to distinguish access rights, ensuring secure and efficient management. Administrators were assigned system and content control, the head of institute monitored performance and reports, while division heads handled field-specific documentation. Students and alumni accessed event information, completed evaluation forms, and participated in interactive discussions. The resulting interface demonstrated responsive and accessible design characteristics, as presented in Figure 7.

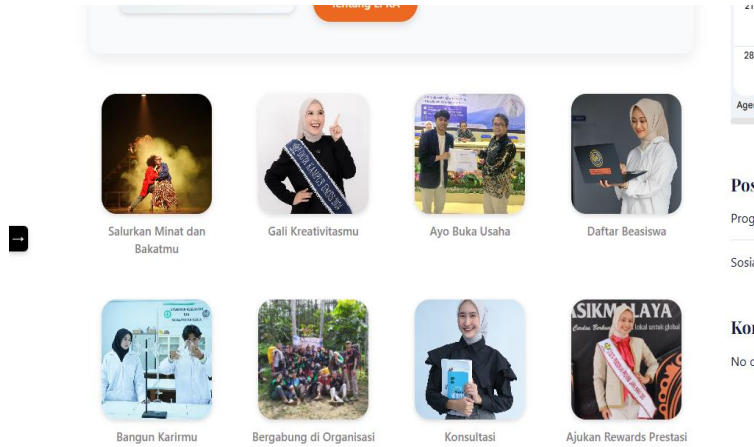


Figure 7. LPKA Website Interface

Following deployment, functionality testing was conducted using Black Box Testing, which confirmed that each feature operated as intended. The complete evaluation outcomes are presented in Table 3, indicating that all tested functions met expected results, validating the system’s operational reliability (Jibril, 2014).

Table 3. System Functionality Testing

No	Tested Feature	Testing Scenario	Expected Result	Conclusion
1	Admin Login	Enter valid username and password	Successful access to admin dashboard	Valid
2	Division Head Login	Enter valid credentials	Access to division-specific page	Valid
3	Institute Head Report Upload	Upload report (PDF/DOC)	File saved and displayed in report list	Valid
4	Division Report Upload	Upload activity report (PDF/DOC)	File categorized correctly by division	Valid
5	Communication Forum	Post new message	Message visible to other users	Valid
6	Student/Alumni Questionnaire	Access form link	Redirected to Google Form	Valid
7	Activity Information Display	Open division activity menu	Displayed per category	Valid
8	Logout Function	Click logout button	User logged out and redirected to login page	Valid

Validation was carried out by software experts, institutional staff, and end users (students and alumni). The software expert validation achieved 84%, classified as *Good* and deemed *Feasible for use*. The staff evaluation resulted in a 91.5% score, indicating a *Very Good* category, while the student/alumni assessment achieved 87.3%, rated as *Good*. Detailed validation results are presented in Tables 4–6, which demonstrate consistent system reliability and user satisfaction across all evaluation groups.

Table 4. Software Expert Validation

No	Evaluation Aspect	Items	Score Obtained	Maximum Score
1	Interface and Readability	3	13	15
2	Ease of Use	3	13	15
3	System Reliability	2	8	10
4	Access Speed	2	8	10
Total		10	42	50

$P = \frac{42}{50} \times 100\% = 84\%$ Percentage: $42/50 \times 100\% = 84\% \rightarrow$ Good and Feasible.

Table 5. LPKA Staff Evaluation

No	Evaluation Aspect	Items	Score Obtained	Maximum Score
1	Interface and Information	3	48	60
2	Ease of Use	3	54	60
3	Relevance and Usefulness	2	37	40
4	Speed and Accessibility	2	44	40
Total		10	183	200

$P = \frac{183}{200} \times 100\% = 91,5\%$ Percentage: $183/200 \times 100\% = 91.5\% \rightarrow$ Very Good and Feasible

Table 6. Student/Alumni User Evaluation

No	Evaluation Aspect	Items	Score Obtained	Maximum Score
1	Interface and Information	3	200	225
2	Ease of Use	3	189	225
3	Relevance and Usefulness	2	128	150
4	Speed and Accessibility	2	138	150
Total		10	655	750

$P = \frac{655}{750} \times 100\% = 87,3\%$ Percentage: $655/750 \times 100\% = 87.3\% \rightarrow$ Good and Feasible

Based on these findings, the LPKA website successfully meets the institution’s operational needs by providing integrated digital services for students and alumni. The system enhances efficiency in service management, ensures rapid dissemination of information, and facilitates interactive engagement between the university, students, and alumni. Overall, the website demonstrates technical feasibility, functional stability, and high levels of user satisfaction, confirming its readiness for official institutional deployment.

4. Discussion

The study successfully designed and developed the LPKA website as a digital platform intended to improve student and alumni services at Universitas Muhammadiyah Tasikmalaya. Developed using the WordPress content management system (CMS), the website offers data management, scholarship announcements, activity publication, discussion forums, and report submission features accessible across multiple devices. The positive validation results—84% from software experts, 91.5% from institutional staff, and 87.3% from student and alumni users—demonstrate that the system operates reliably and meets institutional needs, confirming both functional and technical feasibility (Jibril, 2014). These findings align

with prior studies emphasizing the role of responsive and CMS-based websites in enhancing information delivery and service accessibility within educational institutions (Maryam *et al.*, 2025; Mustafa, 2022). The high usability ratings suggest that WordPress remains a practical and scalable platform for institutional website development due to its flexibility and open-source nature, as also evidenced by Manulang and Abdillah (2017), Dewi and Putri (2025), and Azizah *et al.* (2025). Moreover, the integration of interactive communication features such as forums and feedback forms supports the development of collaborative engagement between the institution and its stakeholders, consistent with the findings of Sanjaya *et al.* (2024) and Agustina *et al.* (2024).

From a design perspective, the incorporation of user interface (UI) and user experience (UX) principles ensured accessibility and intuitiveness, reflecting the recommendations of Maulana and Darmanto (2024). The website's ability to streamline reporting and real-time communication further illustrates the relevance of applying structured development models such as ADDIE, which has proven effective for web-based product development in educational contexts (Firdaus *et al.*, 2022; Okpatrioka & Arrahmaniyah, 2025). The website's use of integrated plugins and automated tools for report submission and content updates also resonates with findings by Ansar and Fatmasari (2020), who highlighted the significance of modular web development in ensuring system stability and user adaptability. Additionally, the website demonstrates how local-level digital transformation can strengthen institutional branding and transparency, echoing the observations of Nugraha (2025) regarding digital content optimization and the use of creative tools to enhance user engagement. In comparison to previous web-based service systems, this project contributes by focusing on the integration of student and alumni data under a single institutional framework.

While earlier works have addressed academic information systems and online commerce (Islamiyah & Dedi, 2018; Manulang & Abdillah, 2017), few have developed specialized platforms for student development and alumni networking in higher education settings. The successful application of WordPress and the ADDIE model in this context supports the argument that systematic design thinking and user-centered development can lead to effective and sustainable institutional websites (Agustina *et al.*, 2024; Maryam *et al.*, 2025). Nonetheless, several aspects warrant further enhancement. These include optimizing system performance speed, developing automated notification features, and integrating the website with broader academic databases to ensure seamless data exchange—improvements similarly recommended in prior web-based educational system studies (Mustafa, 2022; Maryam *et al.*, 2025). Overall, this study confirms that the LPKA website is technically sound, functionally relevant, and capable of advancing digital service delivery in higher education institutions, while also serving as a foundation for continued innovation and integration within university digital ecosystems.

5. Conclusion and Recommendations

This study successfully designed and developed the LPKA website for Universitas Muhammadiyah Tasikmalaya as a digital service platform facilitating information dissemination, student program management, and communication between students, alumni, and the institution. Built on the WordPress content management system, the website integrates essential features such as activity publications, scholarship announcements, interactive forums, and contact services accessible across multiple devices. Evaluation outcomes indicate a high level of feasibility, with validation results of 84% from IT experts, 91.5% from institutional staff, and 87.3% from students and alumni. These results confirm that the website is functionally reliable, technically

stable, and aligns with institutional service objectives. To maximize its long-term impact, the website should be officially implemented as part of the university's digital infrastructure, accompanied by consistent content management and periodic updates. Active participation from students and alumni is encouraged to ensure the platform functions effectively as a primary source of institutional information and engagement. Future research and development efforts could enhance the system by incorporating personalized user logins, integration with academic and administrative databases, automated notification systems, and advanced analytics for monitoring engagement trends. These improvements would further strengthen the LPKA website's role as an adaptive and sustainable digital service supporting transparency, accessibility, and continuous institutional development.

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