Jurnal Mantik, 7 (3) (2023), ISSN 2685-4236 (Online)

Published by:Institute of Computer Science (IOCS)

Jurnal Mantik

Journal homepage: www.iocscience.org/ejournal/index.php/mantik

Responsive website for TK Aisyiyah VI Candi based on content management system wordpress

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A R T I C L E I N F O

Article history:

Received Oct 24, 2023
Revised Nov 03, 2023
Accepted Nov 11, 2023

Keywords:

Management System;
Responsive Website;
TK Aisyiyah;
WDLC Method;
Wordpress.

ABSTRACT

In the era of Industry 4.0, all data and information are readily accessible to the public online. People increasingly rely on websites to obtain information, making websites a crucial asset for companies and institutions. At TK Aisyiyah VI Candi, information about the school is currently disseminated through banners, brochures, and social media platforms such as WhatsApp. Consequently, comprehensive information about the school, especially regarding the enrollment of new students, is not widely available. The objective of this research is to create a website to facilitate the school in delivering information to the public online. This study employs the Web Development Life Cycle Method (WDLC), consisting of several phases: 1) Feasibility, 2) Analysis Requirement, 3) Design, 4) Coding, and 5) Implementation and Maintenance. The website development utilizes the Content Management System (CMS) WordPress. The outcome of this research is a school website designed using the WDLC approach. The conclusion drawn from this study is that the Website Development life Cyle Method (WDLC) proves highly effective in developing a school website, particularly concerning the creation of school profiles, announcements, agendas, and pages dedicated to the enrollment of new students.

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1. INTRODUCTION

A website is a collection of pages that provide information based on the type of web accessed by the public (Alghamdi et al., 2023). The purpose of a website is to serve as a digital information provider accessible through the internet (Fauziyyah, 2023). According to a survey conducted by We Are Social in January 2023, the number of internet users in Indonesia reached 213 million people. This figure represents 77% of the total population in Indonesia, which is 276.4 million people. The number of internet users has increased from 202 million people in 2022. On average, Indonesians spend 7 hours and 42 minutes online daily. 57.8% of the population uses the internet to seek information. The majority of users, 98.3%, access the internet through mobile phones (Wearesocial, 2023). In this modern era, individuals seek information predominantly through website (Mulyati et al., 2022).

In the current context, creating a website has become remarkably straightforward, requiring no profound programming knowledge (Haan, 2022). This ease is facilitated by user-friendly applications known as content management systems (CMS) (Dutonde, 2022). These applications assist users in creating, modifying, and organizing the content within a website without necessitating extensive programming skills (Emmanuel et al., 2023). One of the user-friendly and free content management systems available is WordPress. This application offers numerous features for creating and managing websites, including the availability of attractive and responsive templates. Consequently, websites developed using WordPress appear visually appealing, well-organized, and informative on various devices such as smartphones, tablets, TVs, personal computers, and laptops (Par et al., 2022).

Kindergarten (TK) represent the initial step in shaping a child's character, underscoring the importance for parents to possess comprehensive information about schools, including their profiles, available programs, facilities, competent teaching staff, implemented curriculum, extracurricular activities, event photos, and more (Tekege, 2023). Through this information, parents gain a deeper understanding of the school, cultivating their interest in enrolling their children in that particular educational institution (Atikah et al., 2023). TK Aisyiyah VI Candi, founded in 2013, is situated in the village of Durungbedug, Candi District, Sidoarjo Regency, East Java Province. Despite being relatively new, the school has garnered significant trust and confidence from the local community. This trust is evident in the consistently increasing number of students enrolling each year.

In TK Aisyiyah VI Candi, information dissemination about the school still relies on traditional methods such as banners and brochures, which are distributed on social media platforms like WhatsApp and Facebook. Consequently, the distribution of information remains uneven, reaching only specific individuals within the community (Windha Mega, 2019). This limited reach implies that the information is accessible to a select few, rather than being widely available to the entire audience, creating a gap in communication and awareness. Based on the aforementioned background, the objective of this study is to develop a responsive school website (Livia Sangeorzan et al., 2019). This website aims to disseminate information regarding the school's profile, announcements, events, school-related news, gallery showcasing various activities, as well as testimonials from parents. Hence, the school can effectively convey the necessary data and information to the wider community swiftly, easily, and accurately.

As demonstrated in the research conducted by Suwah Yudianto, the development of the web portal for the Communication and Informatics Department of Bengkayang Regency utilized the web development life cycle method. This approach was employed to ensure the rapid and secure dissemination of information to the public about the Communication and Informatics Department of Bengkayang Regency (Yudianto & Sulistyo, 2022). Similarly, in the research conducted by Gia Septiana Wulandari, the development of the website for the integrated Islamic kindergarten information media, Luqman Hakim in Bandung, employed Laravel. This framework was utilized to create a website that supports seamless online learning, ensuring accessibility for parents and students alike. The implementation of Laravel facilitated the development of an easily accessible online platform for parents, fostering a conducive environment for remote learning in the context of integrated Islamic kindergarten education (Wulandari et al., 2022).

2. RESEARCH METHOD

The website development process involves several stages, following the methodology outlined in the Web Development Life Cycle (WDLC). This method is specifically designed for the development of web-based applications (Aziz Hamzah et al., 2021). The Web Development Life Cycle is a hybrid approach, integrating aspects of two existing methods, namely the System Development Life Cycle and Prototyping methodologies (Sharma et al.,

2022). The Web Development Life Cycle combines elements from these two methods to create a new approach that reduces website development time and actively involves users in the process. This hybrid methodology integrates the structured nature of traditional development cycles with the iterative and user-centered aspects of Prototyping, leading to a more efficient and user-friendly website creation process. The stages of the Web Development Life Cycle are illustrated in Figure 1 (Amadi et al., 2022).

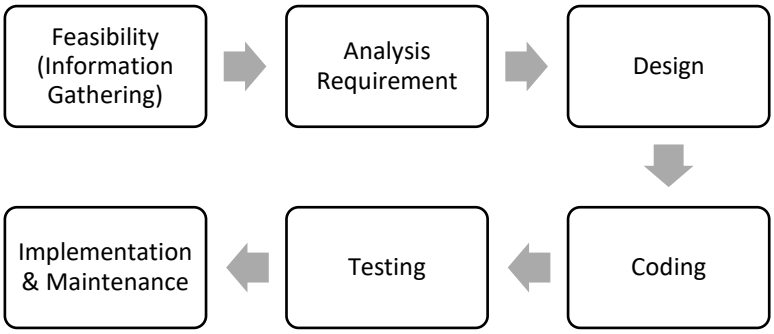

Figure 1. The step of Web Development Life Cycle

a) Feasibility (Information Gathering) Phase
The initial phase in the WDLC methodology is planning, a very starting point in website development. Effective planning is crucial as it sets the foundation for a website. Flawed planning can result in a website that does not meet user expectations. During this phase, essential information required for the website is collected. This gathered data facilitates web designers in creating the layout and navigation menu of the website, ensuring its alignment with user needs and expectations. In this stage, several aspects need to be planned, including website objectives, end-user profiles, web technologies, and the types of content to be displayed on the website. The collection of data and information involves utilizing methods such as interviews, observations, and literature method (Muttaqin et al., 2023).
b) Analysis Requirement Phase
The subsequent phase involves website needs analysis. During this stage, the functional requirements of the website are identified, encompassing the information to be disseminated to the public. This includes gathering input requirements from various sources and determining the output information to be displayed on the website. Additionally, user expectations, such as response times, are analyzed during this phase (Mahmudah, 2023).
c) Design & Coding Phase
In this phase, website design takes place, involving the creation of data models, process models, and website interface designs (Ardiansyah & Pratama, 2022). Additionally, the website is developed (coded) using programming languages or Content Management System (CMS) applications tailored to user requirements. Such as school profiles, vision and mission statements, teacher profiles, school facilities, etc.
d) Website Testing Phase
Once the website is completed, the next step involves website testing. During this phase, a comparison is made between the actual functionalities and the expected functionalities of the website. If there are no disparities, the website can be considered ready for use (published). Testing is conducted on web pages, content, functionalities, and user suitability, including responsive design, website speed, and access across various devices (Helmina, 2023).
e) Implementation & Maintenance Phase
During this phase, the website is published on hosting, allowing users to input data and enabling access by the public. Maintenance of the website is carried out regularly

to ensure its optimal performance. Additionally, authentication and website tracking procedures are implemented to enhance security and monitor its usage (Faisal et al., 2023).

3. RESULTS AND DISCUSSIONS

In this section, the phases of website development based on the Website Development Life Cycle method will be discussed and explained.

a) Feasibility (Information Gathering) Phase
   In this research, information gathering employed three methods:
   1. Observation method
      The first step taken is to conduct on-site observations with the aim of gaining a clear understanding and gathering information about the kindergarten, thereby deriving solutions that are genuinely needed. From these observations, it was found that the dissemination of information to the public is still carried out manually. This involves distributing brochures via Facebook, WhatsApp and displaying banners in various locations along the roadside, close to the kindergarten.
   2. Interviews method
      Conducting interviews with the headmaster and teachers of the kindergarten regarding the data and information to be displayed on the website as well as its ease of management. They expressed the need for a well-designed, engaging, and responsive website that is compatible with all devices used by the community and parents.
   3. Literature method
      Searching for books, scholarly articles, and tutorials related to creating websites using the WordPress content management system.

b) Analysis Requirement Phase
   In this phase, the researcher conducts an analysis of the website requirements, which are divided into four sections:
   1. Header: Displays the school logo and name.
   2. Menu: Home, Profile, Learning, Facilities, Documents, Contact, Admission (PPDB).
   3. Profile Menu: History, Principal's Message, Vision and Mission, Organizational Structure
   4. Facilities Menu: Indoor, Outdoor, Buildings
   5. Content: Education, Teaching Staff, Collaborations, About the School, Announcements, Agenda, Our Classes, Our Teachers, Parent Testimonials, Gallery.
   6. School Program Content: Featured Programs and Extracurricular Activities
   7. Our Classes Content: the classes in TK Aisyiyah VI Candi.
   8. The website footer includes the school's location map, contact information, email, and complete address.

c) Design & Coding Phase
   In this phase, website design takes place, involving the creation proses model using Unified Modeling Language (UML) such as Use case to illustrate the interconnected interactions between users and the created website (Molina-Ríos & Pedreira-Souto, 2020). In this research, the use case of the website as illustrated in Figure 2.

Figure 2. Use case Website TK Aisyiyah VI Candi

The website is constructed using the WordPress Content Management System (CMS), which is widely recognized as one of the most utilized platforms for developing engaging, interactive, and responsive websites. WordPress is highly user-friendly and offers a plethora of up-to-date and innovative templates tailored to the advancements in digital technology (Wordpress, 2023). The appearance of the website's main page is illustrated in Figure 3.

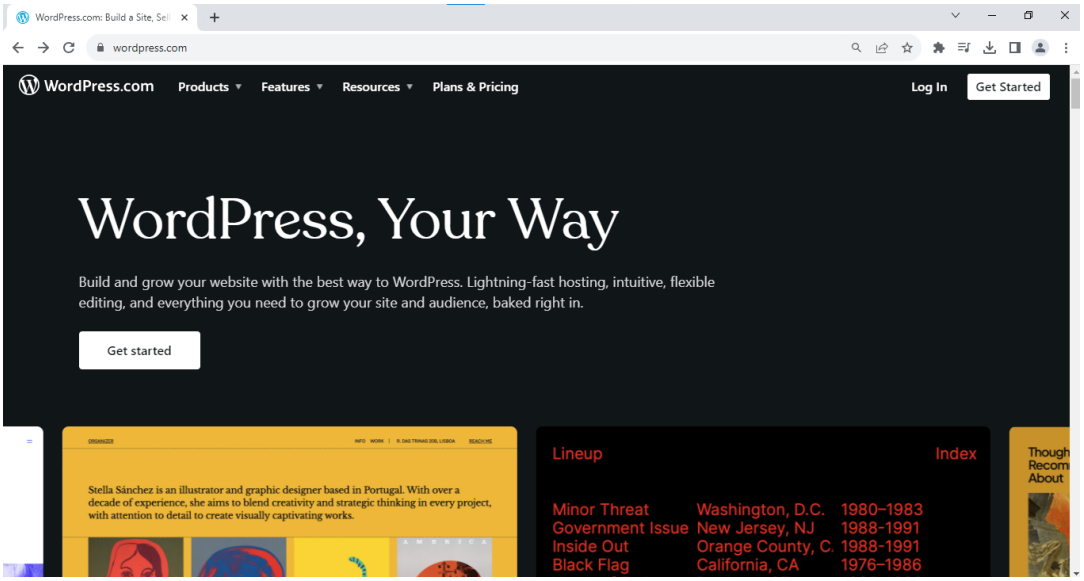

Figure 3. Homepage Wordpress

A total of 43% of websites are built using WordPress (Anugrah Nur Rahmanto et al., 2023). Many small businesses, bloggers, Fortune 500 companies, as well as schools and government agencies opt for WordPress to build their websites compared to the overall number of sites using other CMS platforms (He & Huang, 2023). The TK Aisyiyah VI website

is constructed using a template provided by WordPress. The selected template is specifically designed for kindergarten education.

d) Website Testing Phase

Once the website is completed, the next step involves website testing. In this research, two types of testing methodologies were employed: black box testing was utilized to assess the functionality of the website, while responsive testing was conducted to determine the compatibility of the website across various browsers and devices (Praniffa et al., 2023). The results of the blackbox testing for user can be observed in Table 1.

Table 1. The Result of Black Box Testing for Users

The Module Under Examination	The Testing Procedure	The Expected Output	The Results
Accessing the website's URL	Opening the website using a web browser.	Displaying the website's main homepage	Success
Opening the profile and sub profil menu	Click on the school profile and sub profile menu	Displaying the school profile page, history page, Principal's Message page, Vision and Missionpage	Success
Opening the facilities Menu	Click on the facilities menu	Display information Indoor, Outdoor, Buildings	Success
Opening School Program Content Menu	Click on the School Program Content	Dsiplay Featured Programs and Extracurricular Activities	Success
Opening Our Classes Content Menu	Click Opening Our Classes Content Menu	Display the classes in TK Aisyiyah VI Candi	Success
Opening PPDB Menu	Click PPDB Menu	Display information for Registration of new students	Success
Accessing the sitemap in the footer	Click the sitemap and viewing school contact	Displaying the school's location on Google Maps	Success

After conducting testing on the website accessed by users, the next step is to perform testing for administrators. The website for administrators is distinct from the user interface because administrators have privileged access rights to manage the website, such as entering, updating, or deleting information. The results of the blackbox testing for administrator can be observed in Table 2.

Table 2. The Result of Black Box Testing for Admin

The Module Under Examination	The Testing Procedure	The Expected Output	The Results
Accessing the admin login page	Entering the username and password	Displaying the website's homepage for admin	Success
Accessing the post page	Add, update and delete news or announcements	The web administrator can add, update, and delete news articles or announcements.	Success

Accessing the event page	Add, update and delete event	Events can be added, updated, or removed.	Success
Opening personnel menu	Click on the personnel menu, then proceed to add, update, and delete teachers data.	Displaying personnel page and added or updated teachers data	Success

e) Implementation & Maintenance Phase

After testing phase the next step is publishing website on hosting (Elbahri et al., 2019). The TK Aisyiyah website has been successfully published the homepage is visible as illustrated in Figure 4.

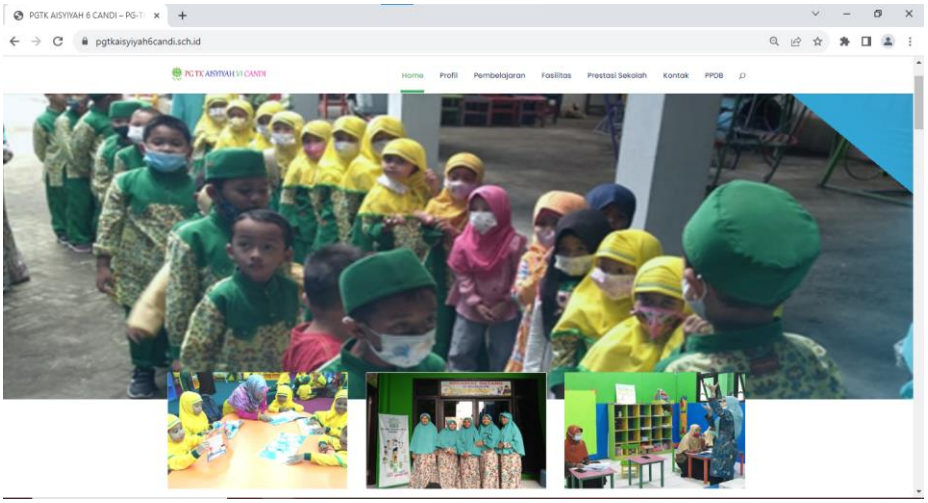

Figure 4. The main page of TK Aisyiyah VI Candi website

On the website's main page, there is also information available about the school's history, school facilities, educational levels, announcements, and the latest news, as illustrated in Figure 5.

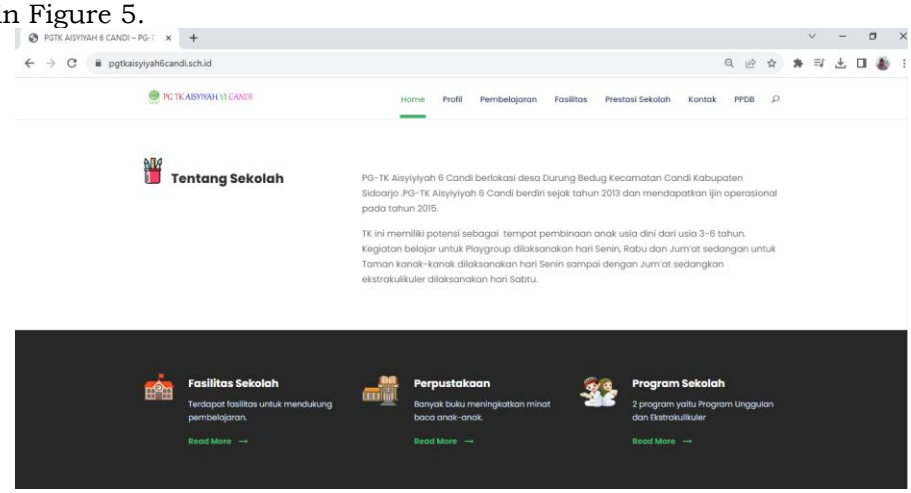

Figure 5. The webpage dedicated to the history and facilities of TK Aiysiyah VI Candi

On the other hand, for administrators to access the main administrator page, they must log in first. Only after that can they design the website, input data, or provide information about the school, which will later be visible to the general public, as illustrated in Figure 6.

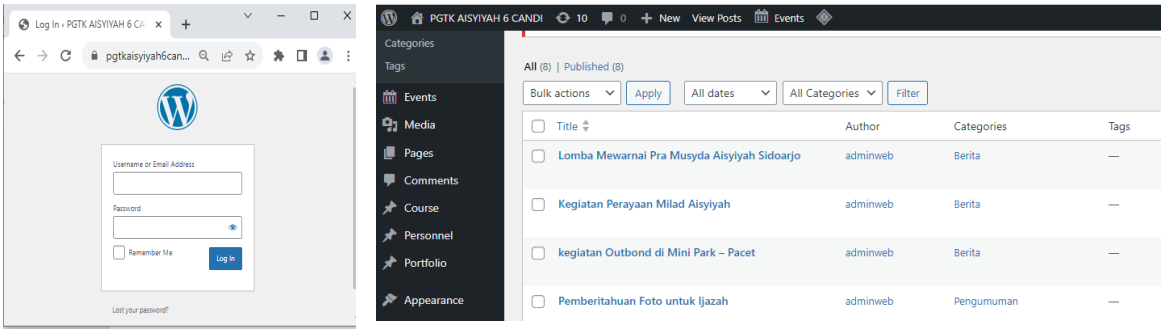

Figure 6. Login page and The main page of Admin website

4. CONCLUSION

In this research, to assess the functionality of the website and determine whether it operates effectively and aligns with user preferences, testing was conducted using the black box testing method. Based on the results of the conducted tests, the website functions properly and is accessible to the general public. The conclusion drawn from this study is that the Website Design Method (WSDM) proves highly effective in developing a school website, particularly concerning the creation of school profiles, announcements, agendas, and pages dedicated to the enrollment of new. The next step involves enhancing the website's appearance by incorporating the latest WordPress features and ensuring regular and consistent information updates. This approach ensures that the website consistently displays the most recent information required by the community. The existence of a website for schools is crucial, especially for disseminating various information from the school to parents and the wider community, such as announcements, school activities, and regularly updated news. Furthermore, a website can serve as a promotional platform for the school and a tool for educational purposes. Sharing information and promoting a school through a website is highly effective due to its extensive reach without constraints of time and space, as it can be accessed anytime and anywhere. WordPress content management system is highly suitable for building school websites as it is user-friendly, particularly for school staff managing information on the website. It offers numerous plugins to optimize the website, making it more engaging and interactive. WordPress also supports responsive web design, ensuring that the website adapts to the device used by the audience. In this study, there are still limitations, especially regarding the enrolment of new students, which is limited to information about registration without the ability to complete the registration process online. Therefore, for future research, an integrated system for new student registration could be developed, seamlessly connected with the school website.

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