



Web Development of SIPARDI as a Digital Archive Storage Information System at SMA Jenderal Sudirman Kalipare

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Abstract

The development of the SIPARDI Web (Digital Archive Storage Information System) aims to increase the efficiency and effectiveness of school archive management. SIPARDI was designed as a solution to provide a platform that allows schools to store, search, and manage archives efficiently. This research uses research and development methods (Research and Development, R & D). Namely, analyzing potential and problems, collecting data, designing products, product testing, design revisions, and design validation. Additionally, data was collected through two main approaches. First, literature study to support the product development process. The information and articles collected in the literature study came from various main sources, such as books, journals, internet articles and related research. Second, data was collected through observation and interviews via online Google Meet. The research subjects were teachers and staff. Through collaboration between the development team and related parties at Jenderal Sudirman High School, various features and functions required by the school have been identified and integrated into SIPARDI. SIPARDI's main features include incoming mail, outgoing mail, and disposition modules, which enable schools to record and manage all communications incoming and outgoing from the institution. In addition, the system is equipped with a powerful search feature, which allows users to easily find the required archives. The results of this research show that the level of effectiveness of the SIPARDI web is so that the implementation of the SIPARDI web can be the right solution in the transition of school archives

Keywords: Archives, letters, SIPARDI

1. Introduction

Archives have a function as a repository of data and documents that act as the center of an organization's collective memory (Farell, et al., 2018). Archives act as a provider of data and information needed for decision making within an entity or institution. In other words, archives provide access to historical information, documents, and important data needed for analysis, evaluation, and decision-making. Decisions by the organization's stakeholders. With a well-organized and managed archive, an organization can draw on a legacy of past knowledge and experience to support future planning and action.

Mail management is not only limited to physical recording, but also includes comprehensive information management (Huriyah, 2003). Apart from physically storing letters, letter management also involves the process of organizing, maintaining, and managing the information contained in the letter. This includes aspects such as recording metadata, indexing, classification, and maintaining the security and accessibility of the information contained in the letters. Mail management is more about overall information management than just the physical administration of documents. Archives and information management is

becoming an increasingly vital aspect of managing an educational institution. SMA Jendral Sudirman Kalipare realizes the importance of this, and in response, sees the need to develop a platform capable of managing digital archives efficiently and effectively. This is what underlies the development of SIPARDI Web as a solution to the Digital Archive Storage Information System in this school. Several key factors underlie the development of Web SIPARDI, ranging from the challenges faced to the potential impact that the adoption of this system can have. SMA Jendral Sudirman Kalipare has identified several problems in archive management that need to be addressed immediately, such as difficulties in searching and accessibility of information, data security risks, and limited space and resources for physical storage.

Archives that are developed and utilized electronically are referred to as digital archives. Digital archives can originate from digital archives that are "born" or from print archives that are converted to digital. In the process of monitoring digital archives sourced from media transfer from print archives. The management protocol is still as written. Therefore, the digital form must also be deleted if the printed archive is to be destroyed. Because the transfer of archive media essentially only serves to help preserve the archive (Hartono et al. 2022) Selajan with Fad'li et al. (2023) In principle, digital-based archive management has similarities with manual archive management. The difference lies in the use of technology or electronic media tools, such as computers, in managing these archives. So, in digital-based archive management, the processes carried out on static archives use electronic technology for data storage, organization and management, in contrast to manual archive management which relies more on physical processes and manual administration. Nonetheless, the basic principles of information management and the need for effective data preservation still apply in both methods. In response to this challenge, the development of SIPARDI Web plays a crucial role. Through this system, schools can improve efficiency and productivity in records management, by providing a platform that enables quick and precise information retrieval, structured digital file management, and strict data security practices. In addition, by adopting this system, schools can reduce reliance on physical storage that consumes space and resources, and support the move towards a more sustainable environment.

The development of SIPARDI Web is not just about solving internal school problems. The impact also extends to the benefits felt by various stakeholders, including students, teachers, administrative staff and parents. Students will get easier and faster access to teachers can manage learning materials and documentation more efficiently, while parents can access their children's academic and administrative information more easily. The development of Web SIPARDI is not only a technological step, but also a strategic step in improving the efficiency, affordability, and quality of education services at SMA Jendral Sudirman Kalipare.

The results of the interview show that SMA Jendral Sudirman still applies manual archive management, so that with the innovation of this digital archive management application, it is very helpful for archive management in our school (W/M/F1/100524).

Through this investment, the school demonstrates its commitment to continuous innovation to create a more modern, adaptive and highly competitive learning environment. Aiming to improve the efficiency and effectiveness of school records management. In the era of digitalization, it is important for educational institutions to utilize information technology in records management to optimize data accessibility and security. From previous research

conducted by Samsudin & Purba (2023), it was found that the implementation of a web-based digital archive information system using PHPRad and a local database was successfully carried out at BMKG (Meteorology, Climatology and Geophysics Agency) Region 1 Medan. The system built is able to overcome the problem of manual data storage and the slow process of inputting archive data which was previously done with Excel and manually. The difference between this research and research conducted by Samsudin & Purba (2023) are in this study examined in high school while the previous study examined in BMKG.

2. Method

This research uses the research and development (R&D) method with a model based on Sugiyono (2013). The research process involves several structured steps to produce a product that is effective and in accordance with user needs. The first step in this research is to analyze potential and problems to identify existing problems in the field as well as the potential that can be developed. Researchers started by conducting observations to understand the needs and constraints faced by teachers and administrative staff in using information systems. After identifying potentials and problems, the next step was to collect data. Data was collected through two main approaches. literature study to support the product development process. The information and articles collected in the literature study came from various main sources, such as books, journals, internet articles, and related research (Ridwan et al. 2021). Second, data were collected through observations and online google meet interviews on May 10, 2024 with teachers and administrative staff. The next step is to design the product based on the data that has been collected. The initial design of the product to be developed, namely the SIPARDI website, includes the structure, features, user interface that is expected to meet the identified needs. After the initial design is complete, the product is tested to evaluate its functionality and usability. This trial involved teachers and administrative staff as early users using a questionnaire instrument. Feedback from the pilot test is in the form of this questionnaire, used to identify weaknesses and areas for improvement in the product design. Based on the trial results and feedback received, the product design was then revised to correct weaknesses and improve product quality. These revisions include improvements to functionality, user interface, and additional features needed. After the revisions are made, the product is tested again to ensure that all issues have been addressed and the product meets user needs. Design validation is done by involving the same users to get the final confirmation that the product is ready to be implemented.

The research location for the implementation of the SIPARDI web at SMA Jenderal Sudirman. Kauman Kalipare Street No. 31, Kalipare, Kalipare Sub-district, Malang Regency, East Java 65166. The research subjects of SIPARDI website development are teachers and administrative staff. Although in this study there are limitations in conducting online interviews via Google Meet, due to the location of the school which is located far away in Malang district. This is not a barrier for researchers to produce products that are appropriate and effective in meeting user needs at SMA Jenderal Sudirman.

3. Results and Discussion

3.1 Result

Based on the results of the application of the SIPARDI web at SMA Jenderal Sudirman Kalipare:

A. Planning

1. Determine the theme for the website

Before creating a website for archives, the first thing to do is to create a theme for the web. Choosing a website theme serves to choose a concept that matches the theme of the website you want to create, namely archives. After discussion with the group, the theme The software used aims to help archive activities in schools to be more effective and efficient.

2. Determination of the location of the archive website implementation

In determining the location of website implementation, researchers chose a high school level school, precisely at SMA Jendral Sudirman No. 31, Kalipare Malang Regency. The reason researchers chose to implement the SIPARDI website at SMA Jendral Sudirman is because there is no electronic-based archive management system.

Designing the product

In making the SIPARDI website, researchers used the XAMPP application and also PHPRAD. The SIPARDI website itself can be used by schools to help archive activities such as incoming letters, outgoing letters, and disposition letters. The following is an overview of the SIPARDI website:

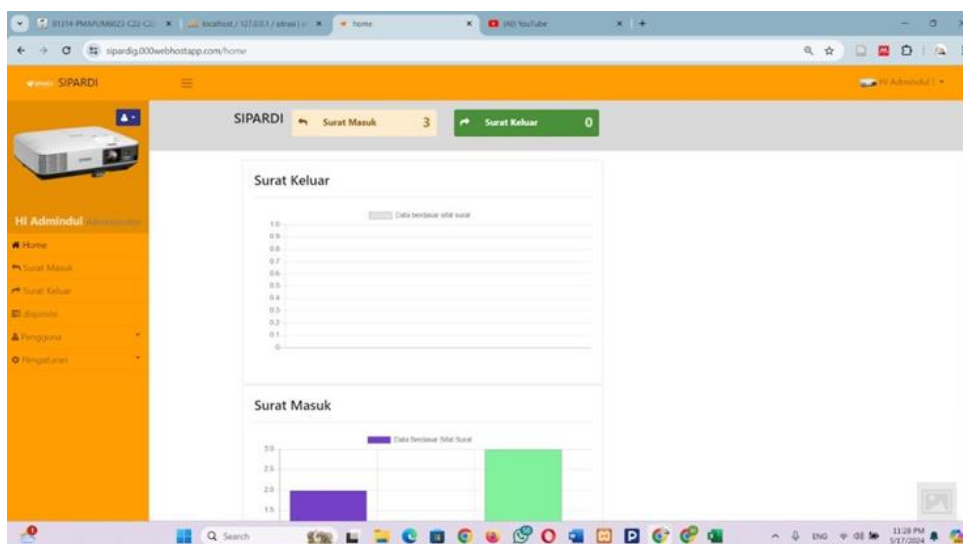


Figure 1.1 SIPARDI Dashboard Menu Display

In Figure 1.1 the dashboard menu display shows the number of incoming letters and outgoing letters that have been recorded on the website

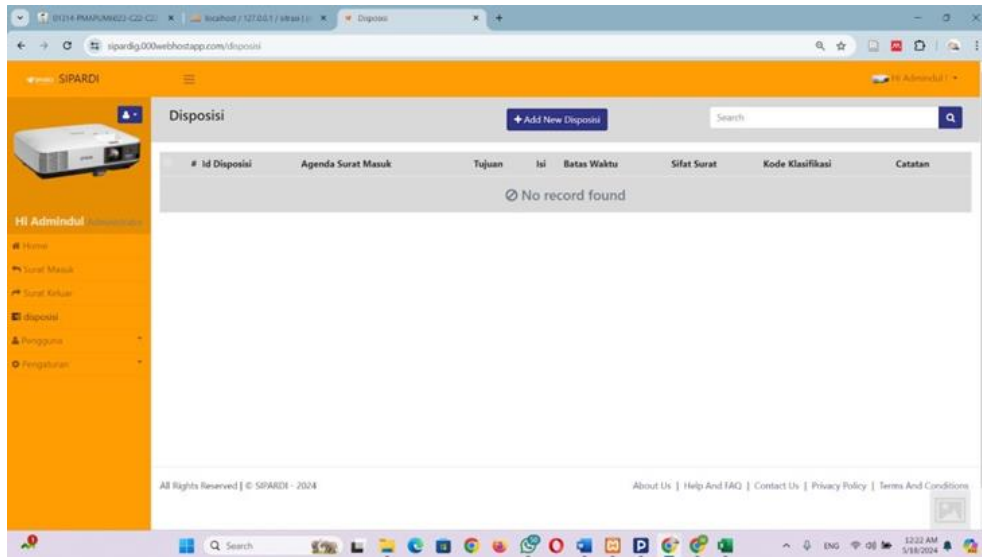


Figure 1.4 SIPARDI Disposition Letter Menu Display

In Figure 1.4 shows the appearance of the disposition letter menu can be used to add a letter that will be included in the disposition, then search for disposition letters can be done with the search feature.

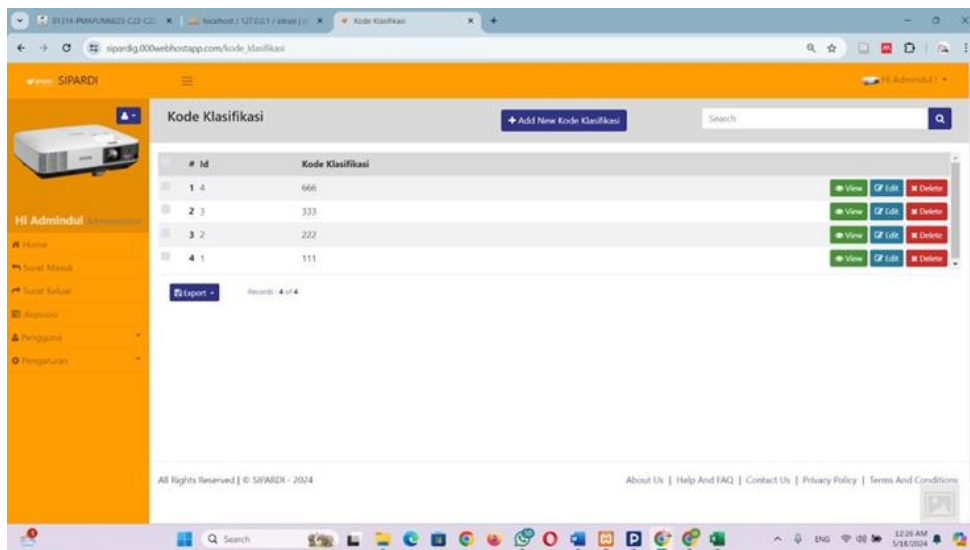


Figure 1.5 Classification Code Menu Display

In Figure 1.5 the classification code menu is used to determine the classification code on the letter.

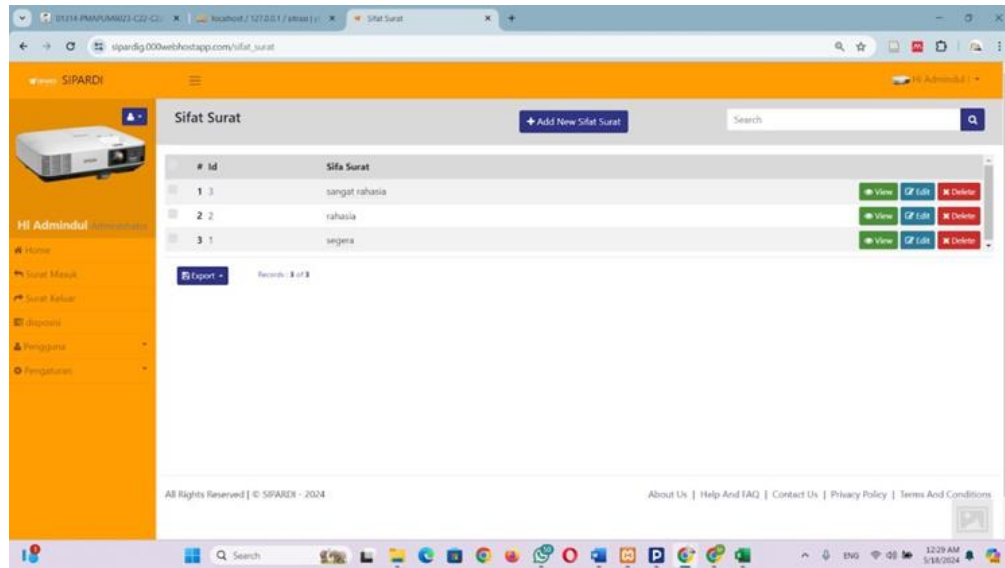


Figure 1.6 Menu View to Determine the Nature of the Letter

In Figure 1.6 the letter properties menu display is used to determine which letter properties will be used when adding incoming, outgoing, and disposition letters.

Research Process Stage

1. Potential and problem analysis
 Before creating the SIPARDI website, the researcher saw problems related to the lack of effectiveness of archive management at SMA Jenderal Sudirman which still uses manual archives. This encourages researchers to create/design a website, which can be useful for the archive system of SMA Jenderal Sudirman.
2. Collecting data
 After knowing the potential and problems, the researchers then collected data which was used as material to develop the product to be applied. In the data collection stage, the researcher conducted an interview with one of the resource persons from Jenderal Sudirman Elementary School named Mafulla. This interview aims to confirm that the archive system at Jenderal Sudirman High School is still manual or has not used digital archives.



Figure 2.1 Observation with resource persons at SDN Jenderal Sudirman

3. Designing the product

Before conducting product trials, researchers designed the product first. The product design is made in the form of an online-based website so that it can be accessed easily and more efficiently in archive management. This product design is made to design the prefix of the product that will be developed by the researcher.

4. Product trial

After designing the developed website product, the next step is product testing. The product trial was conducted with teachers and staff at Jenderal Sudirman High School. The product trial of the SIPARDI website aims to determine the suitability of the website, the usefulness, and the completeness of the SIPARDI website in helping the archive system at SMA Jenderal Sudirman. The product trial was carried out by showing the menus and how to use the SIPARDI website. Then the resource person fills in by using a questionnaire consisting of the test suitability, usefulness test, completeness test, effectiveness test, language, and feedback for the SIPARDI web.

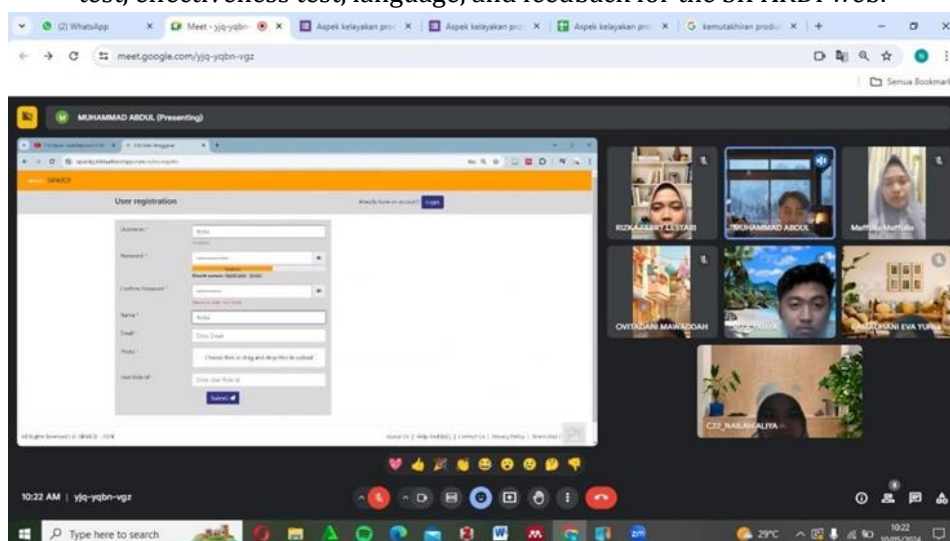


Figure 2.2 Sipardi web trial

5. Design revision

After conducting a trial with one of the teachers, a design revision was then carried out. The design revision was carried out by researchers to improve everything that was lacking on the SIPARDI website as a complement to the product being developed. At this stage, the researcher revised the product design based on the inputs given by teachers and staff of SMAJenderal Sudirman.

6. Design validation

At the design validation stage, it is carried out by assessing and validating all the results of the development and revisions that have been made previously. The results of the design revision are validated again until they get the maximum trial results in accordance with the initial criteria for making the SIPARDI website.

B. Website Analysis Results

The respondents in this study consisted of 3 people, including teachers and administrative staff. Based on the results of the questionnaires that have been distributed, the data obtained are shown in the following table.

Table 1. Website Test Results

No	Assessment Criteria	Bad	Less	Good Enough	Good	Very Good
1.	Ease of use SIPARDI website			1	2	
2.	Benefits or functionally of for SIPARDI website users			1	2	
3.	SIPARDI website display				2	1
4.	Update / suitability of SIPARDI website needs for users				2	1
5.	Clarity of language used in the SIPARDI website				2	1
6.	Harmony or connection between parts of the SIPARDI website			1	1	1
7.	Completeness of the SIPARDI website			1	1	1
8.	Effectiveness and efficiency SIPARDI website			1	1	1

Based on the results of the assessment given by respondents related to the questionnaire that has been given to the school, especially to the archive manager,

it can be concluded that the development of the SIPARDI website as a mail management application in schools has a positive impact. This is evidenced by the percentage of respondents' answers, where 20.84% stated "quite good", 58.33% stated "good", 20.83% gave the answer "very good". These components can be explained as follows.

1. Ease of use of the SIPARDI website
Overall, the SIPARDI website was rated as good. Its use is considered easy to understand by users, which contributes greatly to the management of digital archiving carried out in schools.
2. Benefits or functionality for SIPARDI website users
The SIPARDI website has considerable benefits for users, especially in replacing manual archives in schools. In addition, the SIPARDI website provides convenience in compiling, organizing and accessing school digital archives efficiently. The features provided allow users to search, categorize, and edit archives quickly and accurately. Thus, SIPARDI makes a major positive contribution in improving the effectiveness and efficiency of archive management in the school environment.
3. SIPARDI website display
The appearance of the SIPARDI website is considered good with an attractive design. The layout of the features in SIPARDI is also organized, making it easier for users to find the information they need.
4. Update / suitability of SIPARDI website needs for users
The update of the SIPARDI website is fairly good, this can help improve efficiency and productivity in archive management.
5. Clarity of language used in the SIPARDI website
The language used in the SIPARDI website is very good, because it is easy for users to understand well.
6. Harmony or connection between parts of the SIPARDI website
The harmony and interrelationship between parts of the SIPARDI website are considered good. The components between parts are quite harmonious, so that it can make it easier for users to move between pages or features without any difficulties.
7. Completeness of the SIPARDI website
The completeness of the SIPARDI website is considered quite good, with all the components needed in archiving.
8. Effectiveness and efficiency of the SIPARDI website

The SIPARDI website is considered quite effective and efficient because it is able to help the archiving process, especially in the context of searching for archives that have been classified. With the features provided, users can easily access and find the archives needed, increasing productivity and efficiency in archive management in the school environment.

3.2 Discussion

Information system is a system in an organization that functions to meet daily transaction processing needs, support managerial operations, and strategic activities of the organization, as well as provide reports required for certain external parties. (Novalia, et al., 2018). Information systems are described as a set of interconnected components, collecting or

obtaining, processing, storing and storing information. distribute information to support decision making and supervision in an organization (Harlinda, 2012). Information systems are defined as a combination of people, hardware, software, communication networks, data sources, policies and procedures that are organized to collect, process, store and distribute information in supporting the decision-making and control processes in an organization (Rusdiana, et al., 2016).

Archives are one of the sources of information in an institution that has a very important role because the information obtained is used as evidence of accountability or supporting tools in making decisions. Archival records management is the process of managing and maintaining archives which are records or documents that have historical, administrative and legal value (Anisah, et al., 2021). Therefore, the SIPARDI web was designed to make it easier for users to search, access and manage archives. It also ensures that the stored archives are safe and well maintained.

Website is an electronic publication media consisting of web pages that are interconnected through links placed on text or images. The website was first created by Tim Bamers Lee in 1990, web pages are accessed using an application called an internet browser (Kadir, 2004). The website itself is divided into 2, namely the Static website and the Dynamic website. In this research, the development of SIPARDI web in SMA Jendral Sudirman Kalipare is a strategic step to improve the efficiency and effectiveness of school archive management. Based on the results of the SIPARDI web trial, the positive results for archive management at Jendral Sudirman Kalipare High School can be seen from the results above the assessment given:

Improving the Ease of Use of the SIPARDI Website

Based on the interview results, some respondents stated that the SIPARDI website is still relatively easy to use. However, some other respondents suggested that the website navigation be made easier and the search feature be improved.

Increase Benefits or Functionality for SIPARDI Website Users

Respondents in the interviews were generally satisfied with the functionality of the SIPARDI website. However, some respondents suggested that more features for digital archive management should be added.

Improving the appearance of the SIPARDI website

Respondents in the interviews were generally satisfied with the appearance of the SIPARDI website. However, some respondents suggested that the appearance of the website be updated to make it more modern and attractive.

Improving the Update/Appropriateness of SIPARDI Website Needs for Users

Respondents in the interviews were generally satisfied with the currency of the SIPARDI website. However, some respondents suggested that the website should be updated regularly with new features that suit user needs.

Improving the Update/Appropriateness of SIPARDI Website Needs for Users

Respondents in the interviews were generally satisfied with the clarity of the language used in the SIPARDI website. However, some respondents suggested that the language used should be simpler and easily understood by all users.

Improving the Harmony or Linkage between SIPARDI Website Sections

Respondents in the interviews were generally satisfied with the harmony between sections of the SIPARDI website. However, some respondents suggested that the website structure be improved to make it easier to navigate.

Completeness of SIPARDI Website

Respondents in the interviews generally considered that the SIPARDI website is quite complete with all the components needed in archiving.

Effectiveness and Efficiency of SIPARDI Website

Respondents in the interviews generally considered that the SIPARDI website was quite effective and efficient in helping the archiving process.

The results obtained in the development of Web SIPARDI at SMA Jenderal Sudirman Kalipare are that Web SIPARDI can be a more complete and effective tool in supporting digital archive management, in general they rate the website positively. Future development of Web SIPARDI can focus on improving aspects of the web to make it more effective and efficient in supporting digital archive management in schools.

4. Conclusion

Archive and information management plays a very important role in the sustainability of an institution, including educational institutions such as SMA Jenderal Sudirman Kalipare. In this digitalization era, the existence of a digital archive storage information system becomes increasingly vital to improve efficiency, accessibility, and data security. The development of Web SIPARDI as a solution to the Digital Archive Storage Information System at the school is the right step to overcome the challenges faced in archive management. Through Web SIPARDI, schools can increase efficiency and productivity in records management, enable easier and faster access to information, and reduce dependence on physical storage that consumes space and resources. The positive impact is not only felt by internal school parties, but also by various stakeholders, including students, teachers, administrative staff and parents.

The development of SIPARDI Web at SMA Jenderal Sudirman Kalipare has proven to have a positive impact in assisting the management of digital archives at the school. This website is easy to use, useful, has an attractive appearance, is up-to-date, and uses clear language. There are still some aspects that need to be improved, such as navigation, search features, functionality, appearance, and website structure. By doing the right development. Web SIPARDI can become a more complete and effective tool in supporting digital archive management at the school by doing the right development, Web SIPARDI can become a more effective and efficient tool in assisting digital archive management at SMA Jenderal Sudirman Kalipare

References

- Anisah, Wahyuningsih, D., Helmud, E., Suwanda, T., Romadiana, P., & Irawan, D. (2021). Rancangan Bangun Sistem Informasi Manajemen Arsip Digital. *Jurnal Sisfokom (Sistem Informasi Dan Komputer)*, 10(3), 419-425. <https://doi.org/10.32736/sisfokom.v10i3.1300>
- Fad'li, G. A. (2023). *Implementasi Arsip Digital Untuk Penyimpanan Dokumen Digital*.
- Farell, G., Saputra, H. K., & NOvid, I. (2018). *Rancangan Bangun Sistem Informasi Pengarsipan Surat Menyurat (Studi Kasus Fakultas teknik UNP)*. 11(2)
- Hartono, B. & Danang Danang. (2021). Sistem Informasi Arsip Digital Kartu Catatan Siswa Berbasis Web. *Jurnal Teknologi Informasi dan Komunikasi*, 12(2), !-11. <https://doi.org/10.51903/jtikp.v12i2.281>
- Huriyah, L.(2023). *Manajemen Arsip di Lembaga Pendidikan*. Surabaya: Inoffast Publishing
- Novalia, M., & Muhadjahidin. (2018). *Analisis Kualitas Sistem Informasi Akademik Berbasis Web*. Jurnal Pilar Nusa Mandiri, 14(2), 217-222
- Ridwan, M., Am, S., Ulum, B., & Muhammad, F. (2021). Pentingnya Penerapan Literature Review pada Penelitian Ilmiah. *Jurnal Masohi*, 2(1), 42. <https://doi.org?10.36339/jmas.v2i.427>
- Rusdiana, & Moch. Romli. (2016). *Sistem Informasi Manajemen*. Jurnal Swabumi, 4(1), 1-9
- Samsudin & Pria Mitra Purba. (2023). Implementasi Sistem Informasi Arsip Digital Untuk Manajemen Data bmkg Wilayah 1 Medan. *Jurnal Informatika Teknologi dan Sains (Jinteks)*, 5(4), 588-595. <https://doi.org/10.51401/jinteks.v5i4.3481>
- Saragih, H.(2012). *Pengaruh Kualitas Sistem Informasi Terhadap Kepuasan Penguuna Sistem Informasi Akademik Daerah*, *Jurnal teknologi dan Sistem Informasi UNIVRAB*, 3(1), 32-40.