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DESENVOLVIMENTO DA QUALIDADE DA ESCOLA POR MEIO DO USO DO APLICATIVO SIMA (SISTEMA DE INFORMAÇÕES DE ADMINISTRAÇÃO ESCOLAR)
SCHOOL QUALITY DEVELOPMENT THROUGH THE USE OF THE SCHOOL ADMINISTRATION INFORMATION SYSTEM (SIMA) APPLICATION
DESARROLLO DE LA CALIDAD ESCOLAR MEDIANTE EL USO DE LA APLICACIÓN DEL SISTEMA DE INFORMACIÓN SOBRE LA ADMINISTRACIÓN ESCOLAR (SIMA)

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RESUMO

Introdução: No processo de gestão de arquivos, muitas escolas públicas do ensino básico na Indonésia, especialmente na região de Bekasi, ainda têm problemas no sistema de gestão.

Objetivo: Identificar o modelo de gestão de arquivos de base digital no sistema de garantia da qualidade nas escolas públicas do ensino básico da região de Bekasi e avaliar a sua eficácia.

Método: A abordagem de investigação utilizada é a investigação e desenvolvimento (I&D) com o Modelo de Aproximação Sucessiva (SAM) e uma abordagem de método misto. A recolha de dados foi efectuada através de instrumentos, notas de campo e entrevistas com uma população constituída por todas as escolas primárias públicas do distrito de Bekasi. As técnicas de análise de dados incluem teste de validade, teste de praticidade e teste de eficácia.

Resultados: Os resultados mostraram uma diferença significativa na compreensão da gestão de arquivos entre o grupo experimental e o grupo de controlo (sig. (2-tailed) = 0,001 < 0,05), o que indica que o sítio Web SIMA é eficaz na melhoria da compreensão da gestão de arquivos por parte dos utilizadores.

Conclusão: Os resultados sugerem que a aplicação desenvolvida pode ser uma das referências alternativas para as escolas na gestão de arquivos.

Palavras-chave: gerenciamento de registros; sistema de garantia de qualidade; digital; aplicativo SIMA

ABSTRACT

Introduction: In the archive management process, many public elementary schools in Indonesia, especially in Bekasi Regency, still have problems with the management system.

Objective: Identify the digital-based archive management model in the quality assurance system in public elementary schools in Bekasi Regency and evaluate its effectiveness.

Method: The research approach used is research and development (R&D) with the Successive Approximation Model (SAM) and a mixed method approach. Data collection was conducted through instruments, field notes, and interviews with a population consisting of all public primary schools in the Bekasi District. Data analysis techniques include validity test, practicality test, and effectiveness test.

Result: The results showed a significant difference in the understanding of archival management between the experimental group and the control group (sig. (2-tailed) = 0.001 < 0.05), which indicates that the SIMA website is effective in improving user understanding of archival management.

Conclusion: The findings suggest that the developed application can be one of the alternative references for schools in archives management.

Keywords: records management; quality assurance system; digital; SIMA application

RESUMEN

Introducción: En el proceso de gestión de archivos, muchas escuelas primarias públicas de Indonesia, especialmente la Regencia de Bekasi, siguen teniendo problemas en el sistema de gestión.

Objetivo: Identificar el modelo de gestión de archivos basado en la tecnología digital en el sistema de garantía de calidad en las escuelas primarias públicas en Bekasi Regency y evaluar su eficacia.

Método: El enfoque de investigación utilizado es la investigación y el desarrollo (I+D) con el Modelo de Aproximación Sucesiva (SAM) y un enfoque de método mixto. La recogida de datos se llevó a cabo mediante instrumentos, notas de campo y entrevistas con una población formada por todas las escuelas primarias públicas de la Regencia de Bekasi. Las técnicas de análisis de datos incluyen pruebas de validez, viabilidad y eficacia.

Resultados: Los resultados mostraron una diferencia significativa en la comprensión de la gestión de archivos entre el grupo experimental y el grupo de control (sig. (2 colas) = 0,001 < 0,05), lo que indica que el sitio web SIMA es eficaz para mejorar la comprensión de la gestión de archivos por parte de los usuarios.

Conclusiones: Los resultados sugieren que la aplicación desarrollada puede ser una de las referencias alternativas para las escuelas en la gestión de archivos**.**

Palabras clave: gestión de archivos; sistema de garantía de calidad; digital; aplicación SIMA

INTRODUCTION

One important source of information that can support the smooth running of administrative processes is archives or records (Wijaya et al., 2018). Archives play a central role as a conduit of memory in various activities, as humans cannot possibly remember all documents and records, especially those that are highly complex (Yudha Pratama & Nuryasin, 2022). This concept aligns with Liang Gie's (2011: p.116) statement, "People forget, records remember." As a recorder of information from all organizational activities, archives serve as a memory center, a tool for decision-making, and evidence of an organization's existence for the benefit of other organizations.

As daily archive activities increase, the administrative system often becomes unstructured. Files are frequently found misplaced, causing difficulties in retrieval. Therefore, archives need to be managed properly and in an organized manner so that searching and organizing them can be done more easily and efficiently (Amalia & Panduwinata, 2022). This has led to the emergence of tools that facilitate the management of large volumes of archives, known as electronic archives.

The emergence of electronic archives is a result of advancements in information technology, responding to the importance of archive management. In various types of organizations, including government agencies, educational institutions, libraries, and companies, electronic archives have become essential. However, managing electronic archives requires technology capable of storing information, which can be accessed via computers and managed using software (Kuswantoro & Ashari, 2018).

In Indonesia, the development of information technology during the Industry 4.0 and Society 5.0 eras has had a significant impact on education (Hoesny & Darmayanti, 2021). These technological advances have created important effects that need attention, such as increased efficiency and effectiveness in educational management. Information technology has simplified educational management tasks, including student data management, assessment, and general administration (Pan et al., 2021). With today's technological advancements, there is a greater opportunity for better-organized educational management, making processes more efficient and effective by reducing the time and costs required for administrative tasks. Schools, as formal educational institutions, have an important responsibility in managing archives, especially in safeguarding the security and confidentiality of data (Harisanty, 2022; Tray et al., 2020). Structured and organized archive management is highly significant to ensure that information is easily accessible and supports better decision-making (Bose, 2020). However, many schools face challenges in maintaining complete and up-to-date data, which often hinders the school quality assurance process (Novita & Solihin, 2020). This is due to a lack of understanding of archive management, with around 73% of elementary schools in Bandung City unaware of its importance (Herlina et al., 2022). This situation is exacerbated by the limited resources, facilities, and skills of administrative staff (Afriansyah et al., 2021; Harisanty, 2022), which result in archive management in many elementary schools in Indonesia still being done manually and in an unorganized manner.

Public elementary schools in Bekasi Regency generally do not have specialized administrative staff due to the lack of formal appointments by the government as civil servants. Some schools have administrative staff, but their status is still temporary. The selection process is also not optimal, and low remuneration leads classroom teachers to also perform administrative duties. Additionally, the absence of a vice principal position hinders archive management. Observations indicate that archive management issues include the lack of specialized storage facilities, limited use of physical/manual management systems, inadequate facilities and infrastructure, minimal use of online archive facilities, inappropriate academic qualifications of administrative staff, and the absence of additional operational costs.

Observations and interviews with the Principal of SDN Wanajaya 02, Mr. Hamdani, and administrative staff, Mr. Ari Yanto Sukma, show that archive management in elementary schools in Bekasi Regency is not optimal, without the use of digital applications. This aligns with research by Sutrisno et al., which revealed difficulties in archive management at SDN Sukaresmi 04 due to a lack of understanding among educators about the importance of document management. Similar research by Adriansyah et al. (2016) noted that SD Negeri Harapan Baru Bekasi still uses manual methods in managing student data, and Hidayat & Riana found that Madrasah Ibtidaiyah 52 Bekasi does not have a digital academic information system. Unlike other areas, such as those researched by Amanliah et al. (2021) and Purwanto & Ramadhan, who developed archive management applications at SDN Benua Anyar 10 and an archiving system in Yogyakarta, research in Bekasi is still lacking in this regard. These applications have proven to increase the effectiveness and ease of school administration management.

Based on observations, interviews, and a literature review, it was concluded that public elementary schools in Bekasi Regency have not yet fully implemented an electronic archive management system. Therefore, a digital archive management model needs to be designed to assist school principals, teachers, and administrative staff in validating and storing documents. This research aims to create a website that provides a document storage and validation system that is easily accessible to school stakeholders.

1. METHODS

The research was conducted to develop a digital archive management model known as the School Administration Information System (SIMA). The main objective of the research is to design and test the effectiveness of this model so that it can be used by school principals, teachers, and administrative staff at public elementary schools in the Bekasi Regency. This study adopts a

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3

Research and Development (R&D) approach using the Successive Approximation Model (SAM), which allows for flexibility and collaboration between developers and users.

The research was carried out in several public elementary schools in Bekasi Regency, with the subjects being school principals, teachers, and administrative staff. This study involved both qualitative and quantitative data collection to design a model that fits the users' needs, and then tested its validity and effectiveness through small and large group trials. The results of this research are expected to provide an efficient digital solution for school archive management.

2. RESULTS

2.1 Model Development Results | Preparation Stage

Needs Analysis

In an effort to support government programs related to service quality, Public Elementary Schools need an archive management system that can be used by school operators, teachers, and principals to improve service quality. Currently, the archive management system is only done manually, and archives are stored in storage cabinets in an unstructured manner, as well as various other problems, so that a digital-based archive management model is needed in State Elementary Schools.

Public Elementary Schools in Bekasi Regency, as education providers, still experience obstacles in the archive management process. Constraints that occur, such as (1) lack of human resources who have educational qualifications that are not in accordance with the task, (2) the process of administrative activities that interfere with time because most school operators are class teachers, (3) documents that are stored are not organized, causing a long process in searching, especially when needed during accreditation. Based on the results of the analysis conducted by conducting a pre-research survey in 100 public elementary.

The average score for each statement is above 3, indicating that respondents are quite satisfied with the school administration process. Based on the problems that have been found, it is necessary to recommend and formulate a digital-based archive management application to improve the efficiency and effectiveness of school administration.

Savvy Start

This initial savvy start stage involves discussions with the supervisor regarding the concept or content that will be used as material for the archive management model. Then evaluate school needs and identify appropriate technology solutions. Furthermore, potential solution ideas will be generated and realized in the form of prototypes. The next stage is a discussion with IT experts, related to the appearance design, layout, and workflow of the archive management model application to be developed. From this savvy start activity, it is expected that a comprehensive perspective on the needs and challenges faced can be obtained. Research will be conducted to understand the current state of records management, evaluate the school's needs, and identify appropriate technology solutions. These steps aim to reduce risks and increase the chances of successful implementation of the proposed digital-based records management model. Based on the results of discussions by IT experts, at this stage an initial draft was prepared, which can be seen in the figure below:
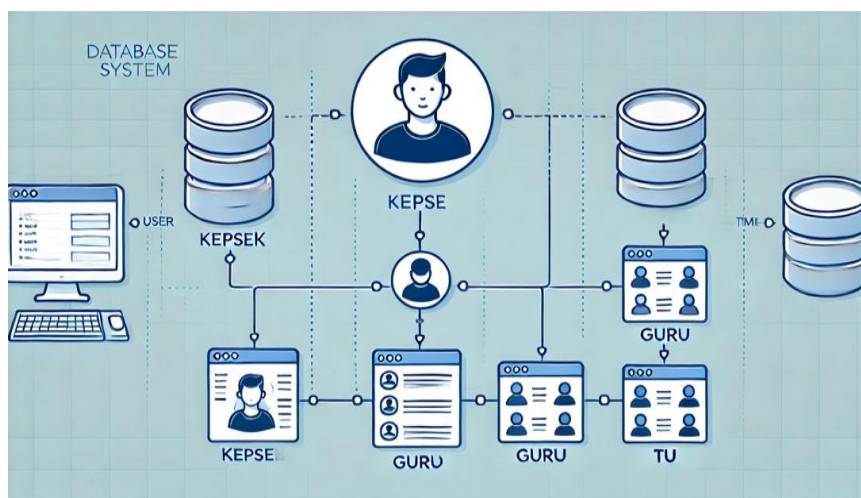

Figure 1 - Initial Draft of Records Management Model

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4

2.2 Iterative Design Stage
Evaluation

The evaluation process is carried out in discussion with the IT team and the supervisor. The evaluation is carried out in the form of content display, dashboard, layout, color nuances, and logo. The selection of content or content of this archive management application is adjusted to the eight National Education Standards, namely Graduate Competency Standards, Content Standards, Process Standards, Educational Assessment Standards, Educator and Education Personnel Standards, Facilities and Infrastructure Standards, Management Standards, and Financing Standards.

Design

From the results of the needs analysis and needs evaluation that have been carried out, an initial design is made in the form of a website at figma.com
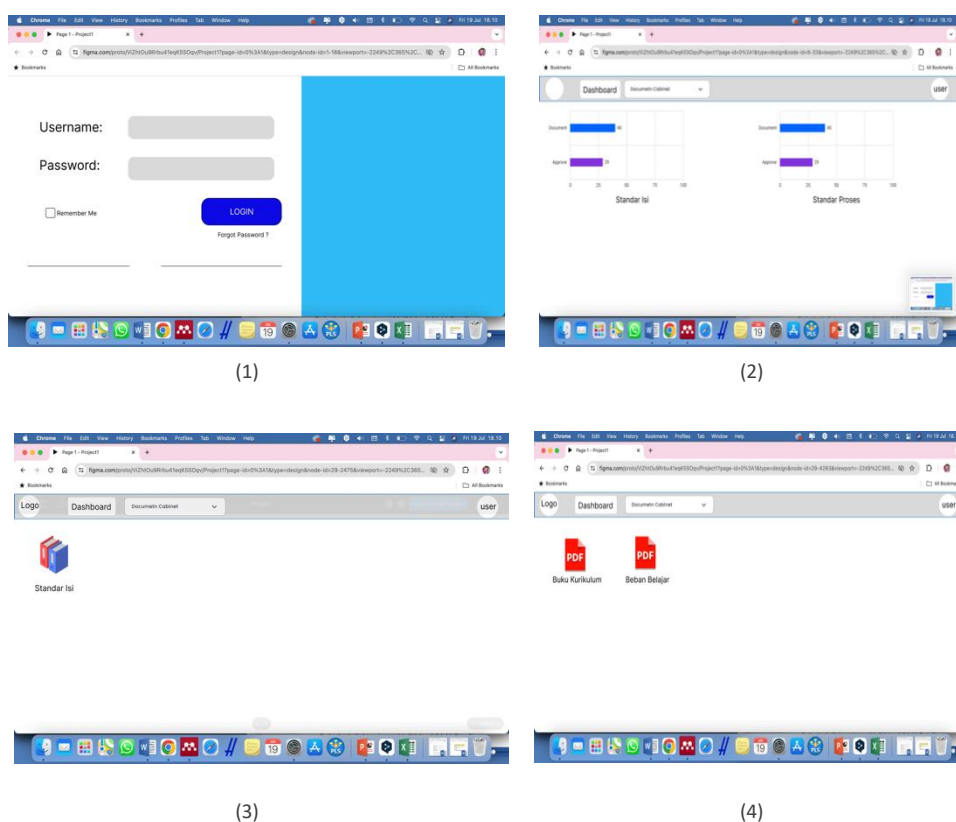

(1)

(2)

(3)

(4)

Figure 2 -Initial Design of Archive Management Model Application

Prototype Making

Application refinement is done by making prototypes by arranging content layout, colors, fonts, images, and other elements. At this stage, the following will be produced: (a) Application of School Administration Information System (SIMA) version 1.0 in the form of a website; (b) Application Usage Video; (c) Guidebook/Instructions for using the application; (d) Product instruments and questionnaire for understanding archive management. Based on the results of the validation that has been carried out, the application and questionnaire instruments are good and suitable for small group and large group trials. However, there are several things that are noted for revision in this model application, related to the nuances and flow of archive management.

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5

2.3 Iterative Development Stage
Development
The development stage is carried out as a refinement of the products produced at the iterative design stage, referring to the evaluation of the expert test results. At this stage, editing of web layouts, images, dashboards, management flow, and instructional videos was also carried out. The development of this application also included an improvement in the name, which was originally SIRPRIM to SIMA (School Administration Information System), with the website: https://sirprim.my.id/login.
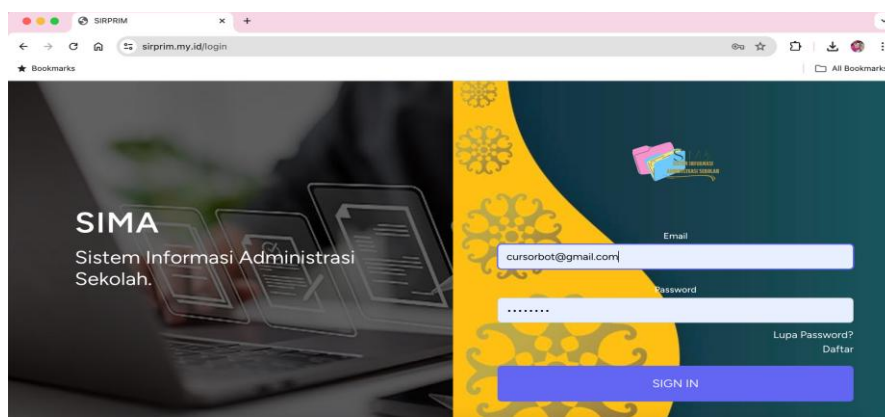

Figure 3 - Display of Archive Management Model Application

Implementation
At this stage, the implementation of the application development is carried out by conducting small group trials. The small group trial was conducted at SDN Wanajaya 02. There were 40 participants as respondents, consisting of the principal, 3 school operators, and 46 teachers. After revisions were made from the results of the small group trial, a large group trial was then conducted involving 750 respondents from 250 public elementary schools in Bekasi Regency, consisting of 250 principals, 250 school operators, and 250 teachers.

2.4 Evaluation
Evaluation of the Small Group Trial
After conducting a small group trial, the results of the evaluation of the use of the SIMA application were obtained. Based on the results of the small group trial, it can be concluded that all archive management activities in the SIMA application are feasible, although there are several model items that need to be revised to provide easier and more detailed instructions and menu choices. After the revision, the next step is to conduct a large group trial, namely by testing this application in Public Elementary Schools in Bekasi Regency.

Evaluation of the Large Group Trial
Based on the suggestions and input on the field notes obtained during the large group trial, there were revisions that did not change the structure in the SIMA application, but added a data security system that had been set up by researchers. The data security system was controlled by the school operator account and the super admin.

Model Effectiveness
The design of the effectiveness test in the research used is a pretest-posttest control group design, where there is a control group and an experimental group. The control and experimental groups involved 100 participants, where each group consisted of 50 people taken from 100 schools. This effectiveness test was carried out at the GTK Bara-Bere Webinar activity, facilitated by the Bekasi Regency Education Office, and the Webinar was held at SDN Wanasari 12. Each was given a different treatment, where the experimental group was given the use of the developed SIMA application, while the control group was educated about archive management.

Descriptive Statistical Analysis
Based on the data obtained from the results of the prestest and posttest in each group can be seen in the following table:

Table 1 - Control Group Pretest and Posttest Results Data

Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Sum Statistic	Mean Statistic	Mean Std. Error	Std. Deviation Statistic	Variance Statistic
Pretest_Kontrol	50	8.00	5.00	13.00	411.00	8.2200	.28613	2.02323	4.093
Posttest_Kontrol	50	8.00	5.00	13.00	428.00	8.5600	.26978	1.90766	3.639
Valid N (listwise)	50								

Based on Table 1, it can be described that in the pretest session of the control group, the minimum score for the results of respondents' understanding of archive management was 5, the maximum score was 13, the average was 8.22, and the standard deviation was 2.02. While in the posttest session, the minimum score was 5, the maximum score was 13, the average score was 8.56, and the standard deviation was 1.90.

Table 2 - Experimental Group Pretest and Posttest Result Data

Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Sum Statistic	Mean Statistic	Mean Std. Error	Std. Deviation Statistic	Variance Statistic
Prestest_eksperimen	50	10.00	3.00	13.00	454.00	9.0800	.34504	2.43981	5.953
Posttest_eksperimen	50	10.00	5.00	15.00	514.00	10.2800	.34528	2.44148	5.961
Valid N (listwise)	50								

Based on the results of Table 2, it can be seen that the pretest score in the experimental group has a minimum score of 3, a maximum score of 13, an average of 9.08, and a standard deviation of 2.43. The posttest score has a minimum score of 5, a maximum score of 15, an average of 10.28, and a standard deviation of 2.44. Based on Tables 1 and 2, there is an increase in the average score in each group.

2.5 Analysis Prerequisite Testing
Data Normality Test
Based on the results of data processing and analysis that have been carried out using the SPSS version 27 program using the One-Sample Kolmogorov-Smirnov Test analysis, the following results are obtained:

Table 3 - Data on Normality Test Results for Experimental Group

One–Sample Kolmogorov–Smirnov Test

			Unstandardized Residual
N			50
Normal Parameters[a,b]	Mean		.0000000
	Std. Deviation		2.26512035
Most Extreme Differences	Absolute		.084
	Positive		.048
	Negative		−.084
Test Statistic			.084
Asymp. Sig. (2–tailed)[c]			.200[d]
Monte Carlo Sig. (2–tailed)[e]	Sig.		.492
	99% Confidence Interval	Lower Bound	.479
		Upper Bound	.504

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.
e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 112562564.

Based on the results of normality testing using one-sample Kolmogorov-Smirnov in Table 3, it is known that the Asymp.Sig value. (2-tailed) at 0.200> 0.05, which means that the data is normally distributed.

Table 4 - Control Group Normality Test Result Data

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		50
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	2.13545273
Most Extreme Differences	Absolute	.088
	Positive	.073
	Negative	−.088
Test Statistic		.088
Asymp. Sig. (2-tailed)[c]		.200[d]
Monte Carlo Sig. (2-tailed)[e]	Sig.	.425
	99% Confidence Interval	Lower Bound	.412
		Upper Bound	.437

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.
e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 1993510611.

Based on the results of normality testing using one-sample Kolmogorov-Smirnov in Table 4, it is known that the Asymp.Sig value. (2-tailed) at 0.200> 0.05, which means that the data is normally distributed.

Data Homogeneity Test
The following are the results of the two variance homogeneity tests, which can be seen in the following table:

Table 5 - Experimental Group Homogeneity Test Result Data

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Kontrol dan Eksperimen	Based on Mean	.856	1	98	.357
	Based on Median	.882	1	98	.350
	Based on Median and with adjusted df	.882	1	97.760	.350
	Based on trimmed mean	.887	1	98	.349

Based on the analysis results shown in Table 5, it is obtained that the significance value of understanding the asip management model is 0.349> 0.05, meaning that the data on the results of understanding archive management in the experimental group have the same variance or are homogeneous.

Table 6: Control Group Homogeneity Test Result Data

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Pemahaman Model Manajemen Arsip Kelas Kontrol	Based on Mean	.021	1	98	.884
	Based on Median	.005	1	98	.942
	Based on Median and with adjusted df	.005	1	96.351	.942
	Based on trimmed mean	.007	1	98	.933

Based on the analysis results shown in Table 6, it is obtained that the significance value of understanding the asip management model is 0.933> 0.05, meaning that the data on the results of understanding archive management in the experimental group have the same variance or are homogeneous.

Hypothesis Test

To determine the effectiveness of this digital-based archive management model, a hypothesis test is carried out by conducting a t-test on the experimental group and the control group.

Table 7 - Data of Paired Sample T-Test Results: Experimental Group

Paired Samples Test

					95% Confidence Interval of the Difference				
			Paired Differences						
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2–tailed)
Pair 1	Prestest_eksperimen – Posttest_eksperimen	-1.56000	3.82345	.54072	-2.64661	-.47339	-2.885	49	.006

Based on the analysis results shown in Table 7, it can be seen that there is a difference in the mean value between the pretest and posttest scores of -1.56 with a t score of -2.885 with df = 49 and a p-value or sig. (2-tailed) = 0.006 <0.05. This means that there is a difference in the results of understanding archive management on the pretest and posttest in the experimental group after being given treatment in the form of the SIMA application.

Table 8 - Control Group Paired T-Test Result Data

Paired Samples Test

					95% Confidence Interval of the Difference				
			Paired Differences						
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2–tailed)
Pair 1	Pretest_Kontrol – Posttest_Kontrol	-1.08000	2.65607	.37562	-1.83485	-.32515	-2.875	49	.006

Based on the results of the analysis shown in Table 8 above, it can be seen that there is a difference in the mean value between the pretest and posttest scores of -1.08, with a t-count score = -2.875, with df = 49, and a p-value or sig. (2-tailed) = 0.006 <0.05. This means that there is a difference in the results of understanding archive management on the pretest and posttest in the control group after being given treatment in the form of a manual model.

Table 9 - Independent Sample T-Test Result Data of Experiment Group and Control Group

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2–tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Kontrol dan Eksperimen	Equal variances assumed	.856	.357	-3.376	98	.001	-1.56000	.46212	-2.47705	-.64295
	Equal variances not assumed			-3.376	96.721	.001	-1.56000	.46212	-2.47721	-.64279

Based on the results of the independent sample t-test analysis shown in Table 9, it can be seen that the F value = 0.856 with a p-value score or Sig. = 0.357 > 0.05, which means they have the same variance or are homogeneous. Therefore, significance testing can be seen in the Equal variances assumed column and the t-test for Equality of Means. Based on the results in the column, it can be seen that the t score = -3.376, de = 98, and the p-value score or sig. (2-tailed) = 0.001 <0.05. This means that there are differences in the results of the archive management understanding test between the experimental group and the control group,

where the results of the skills test in the experimental group are better than those of the control group, with a Mean Difference score of -1.56.

Based on the results of the description that has been presented, it can be concluded that the archive management model developed has a greater influence than the conventional method. This can also be used as reinforcement that the archive management model is very effective in increasing respondents' understanding of archive management.

4. DISCUSSION

This research is a research and development (R&D) with the Successive Approximation Model (SAM), where there are 3 major steps carried out during the research process. The product produced in this research is a records management model named "School Administration Information System (SIMA)". Based on the results of the research, it can be concluded that this digital-based archive management model is effective. This is evidenced by the results of the effectiveness test of the developed model compared to the conventional model. Where the test comparison is carried out by testing the hypothesis between the pretest and posttest data and testing the average difference between the final test in the experimental group and the control group which results in a significant difference from the test results of understanding archive management, so that the digital-based archive management model is better than using conventional models.

The lack of manual archive management compared to the model studied is that the process is still done manually without understanding the concepts in archive management, so that the files are stored unstructured. Therefore, the products from the results of this study provide an important role for ease of structured archive management in each activity that is classified based on the type of grouping. The resulting product has also been tested at each stage, so that the results are better.

In education management, there are four general management functions, namely the functions of planning (planning), organizing (organizing), implementing (actuating), and controlling (controlling) (Bimaruci et al., 2021; Sumadi & Ma'ruf, 2020). The planning function is an activity of thinking about what will be done related to the resources owned. While organizing is the process of gathering human resources, capital, and equipment, it is the most effective way to achieve goals. The implementation function is the process of mobilizing resources in activities to achieve goals in order to achieve process efficiency and effectiveness of work results. The control function is a form of performance assessment activity according to predetermined standards and then changes or improvements are made.

To carry out the function of archive management, this research has developed a digital-based application called "School Administration Information System (SIMA)" with content tailored to the National Education Standards needed for school quality assurance systems, both internally and externally. The developed application contains content in archive management, such as a document upload menu, document validation, document search, document download/backup, as well as videos and user manuals. The archive management carried out in this SIMA application is made simple with the hope that users can easily carry out the archive management process.

Good records management has a significant positive impact in several important aspects, such as storing and retrieving records quickly and precisely, helping to minimize search time, and ensuring data or information can be accessed easily when needed (Barigye et al., 2022; Chaputula, 2022). In addition, well-managed archives provide accurate and relevant data for use by leaders in the decision-making process, allowing decisions to be made based on valid and reliable information (Fanelli et al., 2023; Szukits, 2022). An efficient filing system also allows agencies to reduce the number of records that must be stored, avoid duplication, and minimize the storage space required, thereby contributing to savings in operational costs associated with the physical storage of records (Ergüzen & ünver, 2018). Good records management ensures information security, protecting important records from damage, loss, or unauthorized access, which is critical to the continuity and security of the organization(Creemers, 2022; Villegas-Ch & García-Ortiz, 2023).

Research conducted at public elementary schools in the Bekasi district found that this archive digitization system significantly improves efficiency in document management, facilitates access, and speeds up the process of searching and using the required documents. In addition, the use of a digital system also reduces human error in archiving and data management, and reduces the risk of losing or damaging physical documents thanks to digital backup. However, from field notes taken during the pilot, some schools faced challenges in terms of technological infrastructure, including hardware limitations and unstable internet connections, as well as the need for further training for school staff in the use of digital records management software.

This research shows that the implementation of a digital-based archive management model in public primary schools in the Bekasi district is effective in improving the efficiency of document management. The digital-based School Administration Information System (SIMA) developed in this study facilitates the storage, search, and management of records in a structured and easily accessible manner. The effectiveness test results show that the digital model is better than the conventional model, with significant improvements in school administration efficiency and productivity. However, several challenges, such as limited technological infrastructure and the need for intensive training for staff, remain to be addressed to ensure the sustainability of the implementation.

10

This research introduces a digital-based records management model using the Successive Approximation Model (SAM) approach, which has not been widely applied in primary school settings. The developed SIMA application not only provides basic records management features but also includes tools such as videos and user manuals, designed to ease adaptation and improve users' technological skills. The study also received technical support from the local government, which is an innovative step in facilitating technology adoption in the education sector. The findings make a significant contribution to the literature on digital records management and demonstrate that records digitization in primary schools can improve the efficiency, transparency, and security of administrative data.

CONCLUSION

The need for a digital-based archive management model based on the needs analysis found that respondents were quite satisfied with the school administration process so far. Modeling of archive management was done by developing a digital-based archive management model in the form of an application named "School Administration Information System (SIMA)" developed with the Successive Approximation Model (SAM) model. The validity of the archive management model, as conducted by expert tests, showed results in the "feasible" category. The evaluation system of the digital-based archive management model was carried out through effectiveness testing and user acceptance. The evaluation includes an assessment of ease of use, efficiency of the archive management process, document search speed, and data security and integrity. Feedback from users such as principals, teachers, and school operators was used to improve and refine the SIMA application. The effectiveness test results show that the sig. (2-tailed) = 0.001 < 0.05. This means that there is a difference in the results of the archive management understanding test between the experimental group and the control group. Due to the researcher's limited understanding of archive management, some sub-document data has not been inputted in its entirety. This model is still under development, so the security system still needs to be improved and enhanced, although currently, the security system is available. The use of this application platform certainly requires school principals, teachers, and school operators to always be able to have a quota or internet access in managing archives in this SIMA application.

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AUTHORS' CONTRIBUTION

Conceptualization, S.N., N.K. and R.R.; data curation, S.N.; formal analysis, S.N.; funding acquisition, S.N.; investigation, S.N.; methodology, S.N.; project administration, S.N.; resources, S.N.; software, S.N.; supervision, S.N.; validation, N.K. and R.R.; visualization, S.N.; writing-original draft, S.N.; writing-review and editing, S.N.

CONFLICT OF INTERESTS

The authors declare no conflict of interest.

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11

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