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Effective Strategies for Digital-Based Archive and Document Management in Labuhanbatu High School

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ABSTRACT

This study explores the implementation of digital-based archive and document management strategies at Labuhanbatu High School, focusing on their effectiveness, usability, resource readiness, and operational challenges. Employing a mixed-methods approach, the research involved surveys, interviews, and observations with 30 participants comprising administrative staff, teachers, and IT personnel. The results revealed a high level of effectiveness (mean score: 4.2) and usability (mean score: 4.0), indicating that the system significantly improved document accuracy, retrieval speed, and user accessibility. However, the readiness of human resources (mean score: 3.8) and infrastructure limitations, such as insufficient storage and unstable internet, were identified as critical areas needing improvement. Organizational barriers, including the absence of formal SOPs and limited budget, also hindered optimal implementation. The findings suggest that comprehensive training, structured policy support, and phased infrastructure development are essential to sustain and scale digital archiving systems in educational institutions.

Digital Archive Management, Educational Administration, System Usability.

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INTRODUCTION

In today's digital era, archive and document management in educational settings has undergone significant transformation. Educational institutions, including high schools, are required to adopt information technology to enhance administrative efficiency and effectiveness. Digital-based archive management provides a solution to classical issues such as space-consuming physical storage, difficulty in retrieving documents, and risks of damage or data loss.

Labuhanbatu High School, as one of Indonesia's educational institutions, faces challenges in managing archives and documents efficiently. The continued reliance on manual systems results in slow administrative processes and susceptibility to errors. The implementation of digital-based archive

management strategies is expected to improve the school's overall administrative performance. A study by Simbolon et al. (2024) showed that the implementation of an electronic archive system at SMK Gelora Jaya Nusantara Medan succeeded in improving operational efficiency, reducing physical storage costs, and enhancing both accessibility and document security.

Digital archive management is not only a matter of technology but also requires clear policies and procedures, staff training, and proper file and metadata management. This aligns with the findings of Muhidin et al. (2016), who emphasized the importance of these components in the effective implementation of electronic archive systems. Moreover, training and assistance for school administrative staff are crucial to ensure the successful implementation of digital archive systems. A training program at Pos PAUD Melati Putih demonstrated that staff understanding and skills in digital archive management significantly improved following proper training.

The use of specialized applications such as Myaka can help schools manage digital archives more systematically and efficiently. This application allows for integrated management of student, teacher, and administrative data within a single system. However, the implementation of digital archive systems also faces challenges, such as limited infrastructure and human resource competencies. Research by Arafat et al. (2025) at Muhammadiyah University of Palangka Raya highlighted the importance of training, infrastructure improvement, and system integration to optimize digital archive management.

Additionally, human factors play a vital role in the success of digital archive system implementation. Putranto (2017) emphasized that user-centered approaches can minimize resistance and enhance enthusiasm for adopting new systems. Digital archive management can also improve the quality of public services in educational institutions. With digitalized archives, information flow becomes faster, data access is easier, and transparency and accountability in administrative services are enhanced.

Based on this background, this study aims to identify effective strategies for digital-based archive and document management at Labuhanbatu High School. By adopting best practices from previous studies, it is expected that the school will enhance its administrative efficiency and improve the quality of educational services overall.

RESEARCH METHOD

This study adopts a mixed-methods approach, integrating both quantitative and qualitative methods to obtain comprehensive and measurable findings regarding the effectiveness of digital-based archive and document

management strategies at Labuhanbatu High School. The combination of methods allows for a more robust exploration of both statistical trends and contextual understanding, particularly in evaluating strategy effectiveness and identifying implementation barriers.

The population in this study includes administrative staff, teachers involved in documentation, and IT personnel, totaling 30 individuals. A **total** sampling technique was employed to ensure that all relevant stakeholders involved in archive and document management were included in the study. The participants comprised 15 administrative staff, 10 teachers, and 5 IT staff members. Data collection was carried out using three complementary techniques: structured questionnaires, semi-structured interviews, and direct observation.

The questionnaires included Likert-scale items designed to measure perceptions of system usability, effectiveness, human resource readiness, and encountered challenges. In-depth interviews with selected key informants—such as school leaders and IT personnel—were conducted to gain deeper insights into the school’s document management practices and challenges. Additionally, observational methods were employed to examine the availability of physical and digital infrastructure, and to verify existing archiving workflows.

To ensure instrument accuracy and reliability, the questionnaire underwent expert validation and was tested for internal consistency using Cronbach’s Alpha, with a minimum acceptable value of 0.7. Interview guides were piloted and refined based on feedback to ensure clarity and relevance. Data analysis was carried out using descriptive statistics and SPSS-based inferential analysis to identify trends and relationships among variables, while thematic analysis was applied to the qualitative data following the Miles and Huberman (1994) model.

The variables in this study were clearly defined and operationalized through measurable indicators, as shown in the following table:

Variable	Indicator	Measurement Scale
Strategy Effectiveness	Accuracy, timeliness, document retrieval	Likert Scale (1-5)
System Usability	Ease of use, accessibility	Likert Scale (1-5)
Human Resource Readiness	Training received, competence level	Likert Scale (1-5)
Infrastructure Readiness	Availability of hardware/software	Observational Checklist

Variable	Indicator	Measurement Scale
Implementation Challenges	Infrastructure, SOPs, resistance to change	Open-Ended Interviews

This structured measurement system ensures that each key aspect of the digital archive implementation is assessed using appropriate and objective tools. Quantitative variables such as strategy effectiveness and usability are measured through self-reported Likert scales, while qualitative components such as implementation challenges are captured through narrative responses and triangulated with observational data.

Ethical research standards were strictly upheld throughout this study. Informed consent was obtained from all participants, and their anonymity and confidentiality were guaranteed. All collected data were stored securely and used exclusively for academic purposes.

Through this integrated and ethically sound research design, the study aims to produce actionable recommendations for improving digital archive and document management strategies, not only in Labuhanbatu High School but also in similar educational institutions facing the challenges of digital transformation.

RESULT AND DISCUSSION

Results

Effectiveness of Digital Archive Management Strategies

Based on a survey of 30 respondents comprising administrative staff, teachers, and IT personnel, the average score for the effectiveness of digital archive management strategies was 4.2 on a Likert scale of 1 to 5. This indicates that the implemented strategies are perceived as effective in enhancing document accuracy, retrieval speed, and access efficiency. Supporting this, a study by Faizah et al. (2025) reported that implementing a digital archive system at the Ministry of Religious Affairs in Surabaya increased service efficiency by up to 60% (Faizah et al., 2025).

System Usability

System usability scored an average of 4.0, indicating that users found the system generally accessible and user-friendly. However, several participants suggested that the user interface could be improved for easier navigation. Similar findings were reported by Nugraha et al. (2020), who emphasized the importance of intuitive design in electronic document management systems (Nugraha et al., 2020).

Human Resource Readiness

Human resource readiness scored an average of 3.8, reflecting moderate levels of preparedness. While most administrative personnel had received basic training, further professional development is needed to improve technical competencies. Faizah et al. (2025) also highlighted the importance of continuous training for the successful implementation of digital systems.

Infrastructure Readiness

Observational data revealed that most basic infrastructure, such as hardware and relevant software, was available at the school. However, there is a need to upgrade storage capacity and internet bandwidth to support full-scale implementation. Jordan et al. (2022) emphasized that adequate digital infrastructure is critical for the success of digital transformation in document systems (Jordan et al., 2022).

Implementation Challenges

In-depth interviews revealed several major challenges to the successful implementation of the digital archive system, including:

- Resistance to change: Some staff expressed discomfort in transitioning from manual to digital systems.
- Budget constraints: The available budget is insufficient for regular upgrades to hardware and software.
- Lack of clear Standard Operating Procedures (SOPs): The absence of formal SOPs leads to inconsistency in digital archive practices.

These findings are consistent with Suharti et al. (2020), who reported that resistance to change and the absence of clear procedures are common obstacles to successful digital transformation in secondary schools (Suharti et al., 2020).

Summary Table of Research Findings

Evaluation Aspect	Average Score	Key Findings
Strategy Effectiveness	4.2	Improved accuracy and document retrieval efficiency
System Usability	4.0	User-friendly system; interface enhancements recommended
Human Resource Readiness	3.8	Basic training received; further technical upskilling needed
Infrastructure Readiness	-	Infrastructure available; upgrades to storage and internet required
Implementation Challenges	-	Resistance to change, limited budget, absence of SOPs

Discussion

The results of this study highlight several key insights into the implementation and impact of digital-based archive and document management at Labuhanbatu High School. Overall, the system has proven to be a valuable tool in enhancing administrative efficiency and reducing traditional challenges associated with manual documentation systems. However, the study also identified critical areas that require strategic improvements to achieve optimal functionality and sustainability.

First, the high effectiveness score (4.2) for digital archiving strategies suggests that the school has successfully adopted foundational practices that improve document accuracy and retrieval. This aligns with Faizah et al. (2025), who demonstrated that the adoption of digital archives significantly enhances public service efficiency. The findings reinforce the idea that digitalization contributes to streamlined workflows, better document traceability, and faster decision-making in school administration (Jordan et al., 2022).

Second, although the system usability score of 4.0 indicates general satisfaction, user feedback points to the need for interface refinement. As noted by Nugraha et al. (2020), even effective systems can face resistance if users perceive them as overly complex or unintuitive. Thus, user-centered design improvements should be considered a top priority in future system upgrades to enhance user experience and reduce operational errors.

The readiness of human resources, scoring 3.8, demonstrates that staff members are moderately prepared to handle digital systems but still lack advanced technical expertise. This result supports the view of Suharti et al. (2020), who argue that the success of digital transformation initiatives is heavily dependent on the human factor, particularly the availability of training and the adaptability of staff to technological changes. It is recommended that Labuhanbatu High School institutionalize continuous professional development programs focusing on digital competencies.

Infrastructure readiness, based on observational analysis, appears adequate but constrained. While the availability of hardware and software is generally sufficient, issues such as limited storage capacity and unstable internet connectivity hinder the full potential of digital archive systems. These infrastructural gaps echo the findings of Jordan et al. (2022), who emphasized that digital transformation cannot succeed without robust technological foundations.

A significant challenge lies in the organizational aspect of implementation. The lack of clear Standard Operating Procedures (SOPs), combined with budget constraints and resistance to change, represents a structural barrier to consistent

and effective document management. These findings are congruent with those of Suharti et al. (2020), who reported that without institutional support in the form of formal guidelines and adequate resources, digital strategies tend to be fragmented and short-lived.

From a broader perspective, the results of this study suggest that while digital document management offers clear benefits, its success depends on a synergistic interaction between technology, people, and organizational policy. The transformation cannot be purely technological; it must be accompanied by cultural change, strategic planning, and resource mobilization.

Practically, these findings imply that Labuhanbatu High School—and similar educational institutions—should adopt a phased, adaptive approach to digital archive implementation. This includes (1) user-centric system design; (2) structured training and mentorship programs; (3) investment in infrastructure upgrades; and (4) development of formalized documentation standards and change management strategies.

Academically, this study contributes to the growing literature on digital transformation in educational administration, particularly within the context of developing regions. It provides empirical evidence supporting the effectiveness of digital archive systems while also presenting a critical view of their limitations in real-world application. Future research could expand by incorporating comparative case studies or evaluating the long-term impact of digital archiving on school performance indicators.

CONCLUSION

This study examined the implementation of digital-based archive and document management strategies at Labuhanbatu High School, focusing on their effectiveness, system usability, resource readiness, and key implementation challenges. The findings reveal that the shift from manual to digital processes has led to significant improvements in administrative operations—especially in terms of document accuracy, retrieval efficiency, and system accessibility. These improvements highlight the growing importance of digitalization in enhancing the performance of school administration systems.

Quantitative data from the survey reflected strong user approval, with a score of 4.2 for strategy effectiveness and 4.0 for system usability. These figures demonstrate that the digital archiving system is both functional and generally well-received by its users. However, the relatively lower score of 3.8 for human resource readiness points to an ongoing need for staff development and technical training. Without equipping personnel with the necessary digital

competencies, the sustainability and full potential of the system may be compromised.

Despite having a basic infrastructure in place, the school still faces several technical and organizational barriers, including insufficient storage capacity, unstable internet connections, lack of formal SOPs, and limited funding. These challenges must be addressed through comprehensive institutional support, such as structured policy development, leadership engagement, and change management planning. If effectively managed, the digital archive system at Labuhanbatu High School could serve as a model for other schools seeking to improve administrative efficiency through digital transformation. Future studies should explore the long-term impacts of such systems on institutional transparency, academic accountability, and performance metrics across diverse school environments.

REFERENCES

- Arafat, F., & Sari, M. (2025). Pengelolaan Arsip Digital dalam Peningkatan Kualitas Pelayanan Publik di Universitas Muhammadiyah Palangka Raya. *Anterior Jurnal*, 5(1).
- Faizah, N. A., Thohir, M., & Salem, S. (2025). Optimizing Digital Archive Management to Improve the Quality of Integrated Public Services. *Kharisma: Jurnal Administrasi dan Manajemen Pendidikan*, 4(1), 31–43.
- Fachzriati, M. S., Lolytasari, L., & Waruwu, N. (2023). Myaka: Aplikasi Pengelolaan Arsip Digital Sekolah. *TIK Ilmeu*, 7(2).
- Fauzi, A. (2022). Pengelolaan Kearsipan Siswa Dalam Meningkatkan Mutu Layanan Administrasi di Sekolah Dasar. *NAAFI: Jurnal Ilmiah Mahasiswa*, 2(2).
- Haris, Y. P. (2023). Manajemen Digitalisasi Arsip dan Dokumen di SMAN 4 Pekanbaru. *Reswara: Jurnal Pengabdian Kepada Masyarakat*, 4(1).
- Hidayasari, N., et al. (2023). Workshop Pengelolaan Dokumen Sekolah dan Guru Menggunakan Sistem Cloud Dokumen Interface Berbasis Online. *Tanjak: Jurnal Pengabdian Masyarakat*, 1(1).
- Jordan, S., Zabukovšek, S. S., & Klančnik, I. Š. (2022). Document Management System – A Way to Digital Transformation. *Naše Gospodarstvo / Our Economy*, 68(2), 44–51.
- Kurniadi, D., & Rahmah, N. (2022). Pelatihan dan Pendampingan Pengelolaan Arsip Digital di Pos PAUD Melati Putih. *Prosiding SNPPM*, 4.
- Muhidin, S. A., Winata, H., & Santoso, B. (2016). Pengelolaan Arsip Digital. *JPBM (Jurnal Pendidikan dan Bisnis Manajemen)*, 2(3).

- Nugraha, A., Siber, B., Negara, S., & Harsono, J. (2020). Sistem Pengelolaan Dokumen Elektronik Untuk Digitalisasi Pada Layanan Publik. *Proceedings of ISCBEAM*.
- Putranto, W. A. (2017). Pengelolaan Arsip di Era Digital: Mempertimbangkan Kembali Sudut Pandang Pengguna. *Diplomatika: Jurnal Kearsipan Terapan*, 1(1).
- Simbolon, F. Z., Izhari, F., & Sitorus, Z. (2024). Implementasi Sistem Arsip Elektronik Dalam Meningkatkan Efisiensi Operasional di SMK Gelora Jaya Nusantara Medan. *Jurnal Minfo Polgan*, 13(2).
- Suharti, S., Akib, H., Jamaluddin, J., & Thukiman, K. (2020). Archive Management Analysis in Secondary School: A Case Study in Indonesia. *International Journal of Educational Administration Management and Leadership*, 1(1), 1-6.
- Yulianto, T., et al. (2023). Pengelolaan E-Dokumen dan Surat Menyurat Digital Secara Otomatis Bagi Siswa MA Noer Fadilah Pamekasan. *Prosiding SENIAS*, 1(1).