
Digital Transformation of School Records Management through a Web-Based E-Archive Information System: A Community Engagement Initiative in Bondowoso, Indonesia

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Abstract: *The management of school records is an essential component of effective educational administration, yet many schools continue to face challenges in organizing, storing, retrieving, and maintaining institutional documents through conventional record-keeping practices. This community engagement program aimed to strengthen school records management through the development and implementation of a web-based electronic archive (e-archive) at SMA NU 1 Bondowoso, Indonesia. The program employed a sequential approach consisting of needs analysis, system design, development, implementation, and evaluation. The needs analysis identified functional and non-functional requirements for the proposed system, which were subsequently translated into system-flow structures and database relationships. The developed e-archive was designed to provide a more structured mechanism for managing institutional records and supporting digital access to school documents. Evaluation of the developed system resulted in a validation coefficient of approximately 0.75, indicating an acceptable level of validity within the evaluation framework applied in the program. The findings demonstrate that web-based e-archive development can provide a practical technological foundation for improving the organization and management of school records. However, the results should not be interpreted as definitive evidence of long-term improvements in administrative efficiency or institutional accountability, as the program did not include longitudinal measurements of system utilization or organizational outcomes. The initiative therefore represents an initial step toward digital transformation in school records management and highlights the importance of continued user training, system maintenance, data security, and periodic evaluation to support sustainable implementation.*

Introduction

Digital transformation has increasingly changed the way educational institutions organize administrative processes, manage information, and deliver institutional services. In schools, administrative records constitute a critical information resource because they document institutional activities, support decision-making, facilitate accountability, and provide evidence of educational governance. As the volume and variety of institutional documents continue to increase, conventional paper-based recordkeeping can become increasingly difficult to manage. Electronic records management systems (ERMS) have therefore emerged as an important technological solution for organizing, storing, retrieving, and maintaining institutional records in a more systematic manner. Research has shown that ERMS can contribute to organizational

performance when system quality, information quality, service quality, and security are adequately addressed (Mukred & Yusof, 2018).

The need for digital records management is particularly relevant in educational institutions because schools generate diverse administrative documents throughout their daily operations. These include correspondence, student-related documents, institutional reports, administrative records, and other documents that must be retained and accessed when required. Inadequate records management may create difficulties in locating documents, increase the risk of document loss or damage, and reduce administrative efficiency. Research on electronic records management in schools has demonstrated that although information and communication technologies are increasingly used in school administration, the implementation of electronic records and information management remains constrained by limited knowledge, insufficient policy awareness, and inadequate institutional practices (Ab. Hamid et al., 2019).

The situation identified in the community engagement source provides a practical illustration of these challenges. The report describes the need for improving archive management at SMA NU 1 Bondowoso and identifies the development of a web-based e-archive information system as a response to weaknesses in manual archive management. The report subsequently presents stages of analysis, system design, development, implementation, and evaluation, including the formulation of system requirements and the design of data-flow and entity-relationship structures. This context demonstrates that digitalization is not merely a matter of replacing paper documents with electronic files; rather, it involves redesigning how information is organized, accessed, stored, and managed within an institution.

Electronic records management can also strengthen institutional accountability. Schools require reliable documentary evidence to demonstrate that administrative and educational processes are conducted appropriately. A conceptual model developed for Indonesian schools demonstrates that electronic records management can be linked to school accountability and should be designed in accordance with educational standards and institutional requirements (Oktarina et al., 2023). The study involved records managers and senior high schools across several regions of Indonesia and emphasized the importance of developing records management models that are relevant to the educational context. More recent evidence from Indonesian senior high schools similarly indicates that ERMS can support document availability, information quality, user satisfaction, and archivist performance (Oktarina et al., 2025).

Nevertheless, digitalization alone does not automatically guarantee effective records management. The successful implementation of an electronic records system depends on technological, organizational, individual, and environmental factors. Mukred et al. (2019), through a UTAUT-based framework, identified critical factors influencing ERMS adoption in

educational institutions and emphasized that technological adoption should be understood in relation to users and institutional environments. Similarly, Mukred et al. (2021) demonstrated that ERMS implementation is associated with the competency of educational institutions, emphasizing the importance of system characteristics and organizational readiness. These findings indicate that the development of an e-archive system should be accompanied by attention to user needs, institutional procedures, technical infrastructure, and the capacity of administrative personnel (Mahbubi et al., 2024).

The human dimension of digital records management is particularly important in school environments. A system may provide technically sophisticated functions, but its benefits can remain limited if users lack the knowledge or confidence to operate it effectively. Ab. Hamid et al. (2019) found that teachers possessed relatively good ICT skills but demonstrated only moderate knowledge and skills regarding electronic records and information management. Their study also identified limited awareness of relevant policies and guidelines. This suggests that digital transformation should be implemented through a combination of technological development, user assistance, institutional guidance, and continuous capacity building. In this regard, community engagement can provide an appropriate mechanism for connecting technological innovation with the practical needs of schools.

The transition from paper-based to electronic records management also requires consideration of organizational resistance and system acceptance. Ab Aziz et al. (2019) noted that electronic document and records management systems may not be fully utilized because of user resistance and other adoption-related factors. Likewise, Clemence et al. (2025) found that the existence of electronic records systems does not necessarily mean that institutions use them effectively. Their study of higher learning institutions identified human, organizational, technological, and regulatory factors as important influences on the effective application of electronic records systems. Therefore, the introduction of an e-archive system within a school should be understood as an organizational change process rather than simply a software installation project.

The educational context further requires records management systems to be adapted to institutional workflows. Electronic records systems should correspond to the types of documents generated, the responsibilities of administrative personnel, document classification procedures, and the processes through which records are created, stored, retrieved, and maintained. The development of electronic records management in schools has consequently been associated with the need for appropriate policies, ICT competence, continuous training, and clear implementation frameworks (Ab. Hamid et al., 2019). The experience of educational institutions in other developing contexts similarly demonstrates that successful digital transformation

requires coordination between institutional management and records management practitioners (Clemence et al., 2025).

Recent developments in Indonesia reinforce the urgency of this transformation. Research on digital archives in Indonesian educational institutions emphasizes opportunities to improve administrative efficiency, transparency, accessibility, and information security while also identifying infrastructure and implementation challenges. More broadly, digital transformation in educational administration has been associated with opportunities for improving efficiency, governance, collaboration, and data-based decision-making, although institutional readiness and digital literacy remain important concerns. In the context of Islamic secondary education, recent research has likewise highlighted the potential of digital archival systems to improve storage efficiency and administrative document management.

Against this background, the development of a web-based e-archive information system represents a practical intervention for strengthening school administrative capacity. The community engagement program underlying this article was designed to respond to the need for more systematic archive management through needs analysis, system design, development, implementation, and evaluation. The source report documents the development of system architecture, data-flow diagrams, entity-relationship diagrams, database structures, and an operational web-based archive system. The report also documents the resulting system through screenshots of its operational interface and archive-management functions.

Therefore, this article focuses on the digitalization of school records management through the development and implementation of a web-based e-archive system. Rather than treating digitalization solely as a technical intervention, the article positions it as a community engagement strategy for strengthening administrative capacity, improving access to institutional records, and supporting more systematic information management in schools. The program is particularly relevant to the January–June 2025 implementation period because it connects technological development with institutional needs and user-oriented assistance. By documenting the process of identifying archival problems, designing a system according to institutional requirements, and supporting its implementation, this article contributes practical evidence concerning how digital records management can be introduced within a secondary-school environment. The broader objective is to demonstrate that sustainable digital transformation in education requires not only appropriate technological infrastructure but also contextualized system design, user participation, institutional support, and continuous evaluation.

Method

This community engagement program employed a participatory and practice-oriented approach to strengthen school administrative capacity through the development and implementation of a web-based electronic archive (e-archive) information system. The approach was selected because the intervention was intended not only to introduce a technological product but also to respond to the actual administrative needs of the partner school. Participatory community engagement emphasizes the involvement of local stakeholders in identifying problems, determining priorities, and developing solutions that are relevant to their institutional context (Chambers, 1994; Kemmis & McTaggart, 2000). In this program, the partner institution was SMA NU 1 Bondowoso, where the existing management of institutional archives required improvement through a more systematic digital mechanism. The source report identifies the development of a web-based e-archive information system as the principal intervention and documents its analysis, design, development, implementation, and evaluation stages (Mahbubi, 2025).

The program was organized into several interconnected stages. The first stage involved preliminary observation and needs identification. This stage focused on understanding the existing archival procedures, identifying difficulties encountered by administrative personnel, and examining the types of documents managed by the school (Mahbubi, 2025). Particular attention was given to the processes of receiving, recording, classifying, storing, retrieving, and distributing institutional correspondence. The needs assessment was important because information systems should be developed according to actual organizational requirements rather than technological considerations alone (Mukred et al., 2019). The results of the preliminary analysis were subsequently used to determine the functional and technical requirements of the proposed system.

The second stage involved system analysis and design. The development process followed an analysis–design–development–implementation–evaluation sequence. System requirements were translated into functional structures, data flows, and database relationships. The report documents the use of Data Flow Diagrams (DFD), Entity Relationship Diagrams (ERD), and database design to represent the proposed e-archive system. This stage followed the principle that information-system design should provide a clear relationship between users, processes, data, and system outputs (Pressman & Maxim, 2020).

The third stage consisted of system development and implementation. A web-based e-archive platform was developed to facilitate electronic storage, organization, and retrieval of school documents. Screenshots included in the report demonstrate the operational interface and archive-management functions of the system. Implementation was accompanied by practical

assistance to enable school personnel to understand the system and integrate it into existing administrative activities. User-oriented implementation is important because technological availability does not automatically ensure effective adoption (Ab. Hamid et al., 2019).

The final stage involved system evaluation and validation. The evaluation examined whether the developed system corresponded to identified requirements and could support school archival processes. The report records a validation coefficient of 0.75, which was interpreted as indicating an acceptable level of validity. Data were analyzed descriptively by relating system development outcomes to the identified administrative needs. No experimental comparison or randomized design was employed; therefore, the findings are interpreted as evidence of implementation feasibility rather than causal evidence of improved institutional performance (Mahbubi, 2025).

Result

Development and Implementation of a Web-Based E-Archive System for School Records Management

The community engagement program resulted in the development of a web-based electronic archive (e-archive) system designed to improve the management of institutional records at SMA NU 1 Bondowoso. The intervention responded to the need for a more systematic mechanism for storing, organizing, and retrieving school documents. The program was not limited to the introduction of a digital application; it involved a sequence of needs analysis, system design, development, implementation, and evaluation. The underlying report identifies these stages as the principal framework for developing the e-archive system and documents the transition from an existing administrative arrangement toward a web-based records-management mechanism.

The first result was the identification and formulation of the school's administrative records-management requirements. The analysis stage examined the existing system and determined the requirements that needed to be accommodated by the proposed digital system. This stage was important because electronic records management is not simply a matter of converting paper documents into digital files. It requires alignment between organizational procedures, users, information structures, and technological functions. Previous studies have demonstrated that the effectiveness of electronic records-management systems depends on individual, technological, and organizational factors, including users' ability to understand and apply the system (Mukred et al., 2019). Similarly, research in educational institutions indicates that technological availability does not automatically guarantee effective records management because institutional practices, user competence, and organizational support remain influential

(Mukred et al., 2018; Mukred et al., 2021).

The needs analysis consequently became the basis for defining the functional and non-functional requirements of the e-archive. The system was designed to provide a more structured mechanism for managing school records and facilitating their retrieval. The report documents the formulation of functional and non-functional requirements as well as the development of system-flow representations. This finding is consistent with Ab. Hamid et al. (2019), who emphasize that electronic records management in schools requires not only information technology but also appropriate knowledge, skills, policies, guidelines, and continuing support. In this sense, the development of the e-archive at SMA NU 1 Bondowoso represented an effort to connect technological infrastructure with the practical requirements of school administration.

The second major result concerned the design of the system architecture. The program translated the identified requirements into a structured information system using system-flow analysis, Data Flow Diagrams (DFD), and Entity Relationship Diagrams (ERD). These components provided a representation of how information would enter the system, how it would be processed, and how records would be related within the database. The inclusion of these design components indicates that the intervention moved beyond an informal digital-storage arrangement toward a structured records-management system.

The system-design process also addressed the organization of archival data. This is particularly relevant in educational institutions because school records constitute an important source of administrative evidence. Oktarina et al. (2023) demonstrate that an electronic records-management model can be connected with educational standards and school accountability, emphasizing that archives function not merely as stored documents but also as evidence supporting institutional reporting, accreditation, and accountability. The e-archive developed through this program similarly positioned school records within a more systematic digital structure, potentially making institutional information easier to organize and retrieve.

The third result was the development of the web-based e-archive platform. Following the design stage, the system was developed and prepared for implementation. The report documents the development of the application and presents screenshots of the resulting web-based system. The availability of an operational interface represents an important transition from conceptual planning to a usable technological product. Rather than relying exclusively on conventional physical storage, the school was provided with a digital environment through which archival information could be managed more systematically.

This result corresponds with evidence from other educational settings. Hafid and Wakhid (2025), for example, found that archive digitization in an Islamic senior high school could improve storage efficiency and support faster and more secure administrative management.

Their study reported an 80% reduction in physical storage requirements following digitization, although such a quantitative effect should not be attributed to the present program because equivalent measurements were not conducted at SMA NU 1 Bondowoso. The comparison nevertheless illustrates the broader administrative relevance of digital archival transformation.

The fourth result concerned the implementation of the system as an institutional administrative-support mechanism. The program did not conceptualize the e-archive solely as software but as a tool intended to support everyday school records management. This distinction is important because research on electronic records systems shows that adoption and effective utilization are not identical. Clemence et al. (2025) found that institutions may adopt electronic records systems while continuing to rely substantially on paper-based records, demonstrating the importance of implementation practices and organizational adaptation. Thus, the implementation of the e-archive at SMA NU 1 Bondowoso should be understood as an initial institutional transformation in records management rather than simply a technical installation.

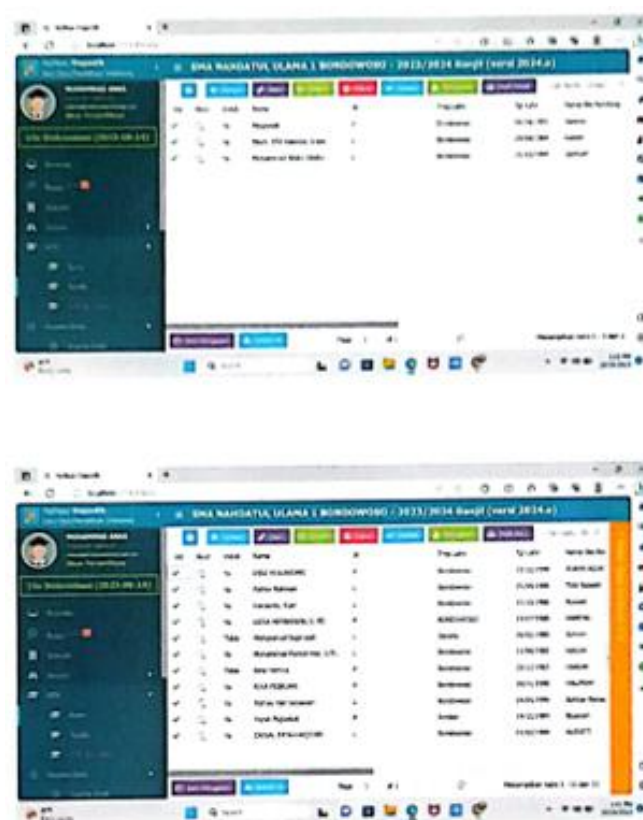


Figure 1 Web-Based Electronic Archive Interface for School Records Management at SMA NU 1 Bondowoso

The fifth result was the validation of the developed system. The report records a validation coefficient of approximately 0.75 and interprets the result as indicating that the developed e-archive achieved an acceptable level of validity. This finding provides evidence that the system was considered sufficiently aligned with the requirements established during the development

process. However, the coefficient should be interpreted cautiously. It demonstrates an aspect of system validation but does not, by itself, establish long-term effectiveness, user satisfaction, organizational efficiency, or sustained adoption.

The validation result is nevertheless meaningful because previous research emphasizes the importance of evaluating electronic records systems from multiple dimensions. Oktarina et al. (2025), for instance, found that ERMS quality, document availability, and archivist efficiency were associated with stronger accountability in Indonesian senior high schools. Their study also emphasized continuing training and periodic evaluation as important conditions for optimizing ERMS implementation. Similarly, Mukred et al. (2019) argue that successful ERMS adoption requires attention to individual, technological, and environmental factors rather than technology alone.

Overall, the results demonstrate that the community engagement program produced a structured web-based e-archive system through a sequential process of needs analysis, system design, development, implementation, and validation. The intervention established a technological foundation for more systematic school records management while also demonstrating the importance of aligning system development with institutional requirements. The results should not, however, be interpreted as evidence of statistically demonstrated improvements in administrative performance because the program did not employ a controlled pre-test/post-test design or longitudinal measurement of retrieval time, storage efficiency, user satisfaction, or accountability outcomes. Instead, the principal contribution of the program was the development and initial validation of a functional digital records-management mechanism that could serve as a foundation for subsequent institutional adoption and improvement.

Discussion

The development of a web-based electronic archive (e-archive) at SMA NU 1 Bondowoso demonstrates that digital transformation in school administration should be understood as an organizational process rather than merely a technological intervention. The program followed a sequence of needs analysis, system design, development, implementation, and evaluation, resulting in a web-based archival system that was reported to achieve a validation coefficient of approximately 0.75. These findings indicate that the intervention successfully translated identified administrative requirements into a structured digital system. More importantly, the program illustrates how community engagement can contribute to institutional digital capacity by connecting technological development with the practical needs of educational organizations.

The first significant issue emerging from the findings is the importance of needs-based system development. The intervention began by examining the existing administrative situation

and identifying functional and non-functional requirements before the system was designed. This approach is consistent with the argument that successful electronic records management depends on the compatibility between technological systems and organizational requirements. Mukred and Yusof (2018) found that system quality, information quality, service quality, and security are significantly associated with successful ERMS adoption, which subsequently contributes to organizational performance. Their findings suggest that technology becomes valuable only when its characteristics correspond with institutional requirements. In the present program, the development of the e-archive was similarly preceded by an analysis of existing conditions, indicating that the system was designed as a response to an identified administrative need rather than as technology introduced independently of institutional practice.

The second important finding concerns the transformation of records from physical administrative objects into structured institutional information. The system development process incorporated system flows, Data Flow Diagrams (DFD), and Entity Relationship Diagrams (ERD), indicating that the intervention attempted to establish a systematic structure for organizing archival information. This is important because electronic records management should not be reduced to scanning or storing documents in digital folders. Rather, effective records management requires classification, accessibility, organization, preservation, and appropriate retrieval mechanisms. Ab. Hamid et al. (2019) similarly demonstrated that electronic records management in schools involves broader organizational and human dimensions, including ICT competencies, records-management knowledge, policies, guidelines, and continuous training. Their study of 220 respondents from Malaysian public primary schools showed that teachers possessed relatively good ICT skills but had only moderate knowledge and skills related to electronic records and information management. This finding reinforces the need to integrate technological development with institutional capacity building.

The present intervention also has implications for school accountability. Educational institutions generate substantial volumes of administrative records, including correspondence, institutional documents, student-related records, and other evidence required for organizational activities. When such information is systematically managed, records can function as institutional evidence rather than merely archived materials. Oktarina et al. (2023) developed a conceptual electronic records-management model based on eight Indonesian education standards and demonstrated the relevance of ERMS to school accountability. Their work is particularly important in the Indonesian context because it positions electronic records management within the broader framework of educational governance. The e-archive developed at SMA NU 1 Bondowoso can similarly be interpreted as an infrastructural mechanism that has the potential to strengthen the availability and organization of institutional evidence, although the present

program did not directly measure changes in school accountability.

This distinction between potential contribution and demonstrated impact is important. The reported validation coefficient of 0.75 indicates that the developed system achieved an acceptable level of validation within the evaluation conducted by the program. However, system validation should not be interpreted as equivalent to evidence of improved organizational performance. Validation demonstrates that the system was considered appropriate according to the evaluation criteria used, but it does not establish that the system reduced retrieval time, increased user satisfaction, improved accountability, or enhanced administrative productivity. This methodological distinction is consistent with the broader ERMS literature, in which system effectiveness is often assessed through multiple dimensions rather than through technical validation alone.

For example, Oktarina et al. (2025) examined ERMS in Indonesian senior high schools using responses from 40 users and observations of 20 archivists. Their study found positive assessments of system reliability, information quality, service quality, user satisfaction, and net benefits. They also reported high document availability and improved efficiency and accuracy among archivists. The comparison suggests that the e-archive developed at SMA NU 1 Bondowoso represents an important first stage, while future evaluation should examine broader indicators of organizational benefit. In other words, the present intervention establishes the technological foundation, whereas subsequent institutional monitoring is needed to determine whether that foundation produces measurable improvements in administrative performance.

Another important issue is the human dimension of digital transformation. The development of an e-archive does not automatically guarantee that school personnel will use the system consistently. Mukred et al. (2019) identified multiple factors affecting ERMS adoption in educational institutions and emphasized the importance of technological, organizational, and individual conditions. Their UTAUT-based framework demonstrates that successful adoption depends on more than the availability of technological infrastructure. Similarly, Mukred et al. (2018) found that successful ERMS adoption is related to system, information, service, and security quality. These findings provide an important theoretical explanation for the community engagement approach used in the present program: technological development needs to be accompanied by assistance that helps users understand, accept, and integrate the system into their administrative routines.

This issue is further supported by research on educational institutions outside Indonesia. Clemence et al. (2025) found that adoption of electronic records systems does not necessarily mean that the systems are being used effectively. Their findings highlight the influence of human, organizational, technological, and regulatory factors on the adoption and application of electronic

records systems. Consequently, the e-archive at SMA NU 1 Bondowoso should not be viewed as a finished intervention merely because the software has been developed. Its long-term value will depend on whether school personnel incorporate it into routine records-management practices, maintain the quality of digital records, and continue to use the system consistently.

The findings also reinforce the importance of continuous training and institutional support. Ab. Hamid et al. (2019) emphasized continuous training as one of the important elements of effective electronic records and information management in schools. Likewise, Oktarina et al. (2025) recommend continuing training for archivists and periodic evaluation of system performance and user satisfaction. These findings are directly relevant to community engagement because the role of the university is not necessarily limited to developing a technological product. It can also involve strengthening the partner institution's ability to operate, evaluate, and sustain the system. Thus, mentoring becomes an essential component of digital transformation because it helps ensure that technological innovation is accompanied by organizational learning.

The development of the e-archive also has potential implications for administrative efficiency. Digital records systems can theoretically reduce dependence on physical storage and facilitate faster retrieval of information. However, the present report does not provide quantitative measurements of retrieval time, storage reduction, processing time, or administrative workload before and after implementation. Therefore, it would be methodologically inappropriate to claim that the intervention definitively improved efficiency. Instead, the result should be interpreted as establishing a technological mechanism that may facilitate more efficient records management. This cautious interpretation is particularly important because research demonstrating actual efficiency gains generally employs specific performance indicators. For example, Oktarina et al. (2025) measured archivist performance and reported that many archivists could retrieve documents in less than one minute. Such measures were not available in the present intervention and should therefore become part of future evaluation.

Another implication concerns institutional sustainability. Electronic records management requires more than initial implementation because digital systems must be maintained, updated, secured, and adapted to changing institutional requirements. Mukred et al. (2019) emphasize that organizations adopting ERMS need to consider multiple contextual factors, while Mukred et al. (2021) highlight the importance of institutional competency in managing electronic records. Consequently, the sustainability of the e-archive at SMA NU 1 Bondowoso depends on the school's ability to establish internal procedures for record classification, data entry, access control, maintenance, backup, and periodic evaluation. Without

these institutional mechanisms, the system risks becoming an isolated technological product rather than an integrated component of school administration.

The intervention is therefore best understood as a capacity-building initiative. Community engagement provided an opportunity for academic expertise in information systems and educational management to be translated into a practical institutional solution. The report identifies the development process from analysis through evaluation, while the resulting system provides a concrete technological output. This model is consistent with the broader understanding of community engagement in which academic knowledge should respond to concrete community or institutional needs and generate sustainable benefits.

Overall, the discussion demonstrates that the e-archive program contributed primarily by establishing a structured digital foundation for school records management. The reported validation coefficient of 0.75 provides evidence of system acceptability within the program's evaluation framework, but it should not be interpreted as causal evidence of improved school performance. The strongest contribution of the intervention lies in connecting needs analysis, system design, technological development, and institutional assistance. Consistent with previous ERMS research, the findings indicate that successful digital transformation requires the integration of technology, information quality, user competence, organizational support, security, and continuous evaluation (Ab. Hamid et al., 2019; Clemence et al., 2025; Mukred & Yusof, 2018; Mukred et al., 2019; Oktarina et al., 2023, 2025). Future programs should therefore move beyond system development toward longitudinal evaluation, including measures of retrieval efficiency, user satisfaction, records completeness, security, administrative workload, and institutional accountability. Such an approach would provide stronger empirical evidence regarding the long-term contribution of digital records management to educational administration.

Conclusion

The community engagement program demonstrates that the development of a web-based e-archive can provide a practical solution for strengthening school records management at SMA NU 1 Bondowoso. The program transformed identified administrative needs into a structured digital system through a process of analysis, design, development, implementation, and evaluation. The resulting system provides a more organized mechanism for managing school records and supports the transition from conventional administrative practices toward digital records management.

The program also produced a web-based e-archive that achieved a reported validation coefficient of approximately 0.75. This indicates that the system reached an acceptable level of validity within the evaluation conducted during the program. The intervention therefore

succeeded in producing not only a conceptual design but also a tangible digital system that can be utilized as part of the school's administrative activities.

However, the results should be understood within the scope of the program. The available evaluation does not provide sufficient evidence to establish long-term changes in administrative efficiency, user satisfaction, document retrieval time, or institutional accountability. Therefore, the program is best understood as an initial step toward strengthening digital records management rather than as definitive evidence of the long-term effectiveness of the system.

The sustainability of the e-archive will depend on its continued utilization, maintenance, and integration into the school's routine administrative procedures. Future development should focus on strengthening user competence, improving data security and backup mechanisms, establishing clear records-management procedures, and conducting periodic evaluations of system utilization. Continuous improvement will be necessary to ensure that the system remains relevant to the school's changing administrative needs.

Overall, the program demonstrates that community engagement between higher education institutions and schools can produce a practical and contextually relevant digital solution. The e-archive provides a foundation for more systematic, accessible, and sustainable school records management and can support the gradual development of a stronger digital administrative culture at SMA NU 1 Bondowoso.

References

- Ab Aziz, A., Yusof, Z. M., Mokhtar, U. A., & Jambari, D. I. (2019). Electronic document and records management system (EDRMS) adoption in public sector: Instrument development protocol and content validation using content validation ratio. *Jurnal Pengurusan*, 53, 119–132.
- Ab. Hamid, R. H., Mokhtar, U. A., Mohd. Yusof, M., & Warland, A. (2019). Electronic records management in schools: The case study of school examination analysis system. *Jurnal Pengurusan*, 57, 142–154. <https://doi.org/10.17576/pengurusan-2019-57-10>
- Arnawa, I. B. K. S., & Purnamayanti, I. A. G. W. (2025). Pengembangan sistem informasi manajemen sekolah terintegrasi untuk digitalisasi administrasi. *Jurnal Nasional Teknologi Informasi dan Aplikasinya*, 3(4). <https://doi.org/10.24843/JNATIA.2025.v03.i04.p25>
- Clemence, O., Luambano, I., & Mwantimwa, K. (2025). Adoption and application of electronic records systems in higher learning institutions. *Information Development*, 41(2), 333–352. <https://doi.org/10.1177/02666669231158336>

- Kemmis, S., & McTaggart, R. (2000). Participatory action research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 567–605). Sage Publications.
- Mahbubi, M. (2025). *METOPEN FOR DUMMIES: Panduan Riset Buat Kaum Rebahan, Tugas Akhir Lancar, Rebahan Tetap Jalan!*, (1st edn). Global Aksara Pers.
- Mahbubi, M., Sahrur, D. S., & Mahfudi, A. Q. (2024). Implementasi Pendidikan Karakter Melalui Program Tahlil for Kid. *Jurnal Inovasi Pendidikan Dan Sains*, 5(3), Article 3. <https://doi.org/10.51673/jips.v5i3.2299>
- Mukred, M., & Yusof, Z. M. (2018). The performance of educational institutions through the electronic records management systems: Factors influencing electronic records management system adoption. *International Journal of Information Technology Project Management*, 9(3), 34–51. <https://doi.org/10.4018/IJITPM.2018070103>
- Mukred, M., Yusof, Z. M., Al-Moallemi, W. A., Mokhtar, U. A., & Hawash, B. (2022). Electronic records management systems and the competency of educational institutions: Evidence from Yemen. *Information Development*, 38(1), 125–148. <https://doi.org/10.1177/0266666920980829>
- Mukred, M., Yusof, Z. M., Alotaibi, F. M., Mokhtar, U. A., & Fauzi, F. (2019). The key factors in adopting an electronic records management system (ERMS) in the educational sector: A UTAUT-based framework. *IEEE Access*, 7, 35963–35980. <https://doi.org/10.1109/ACCESS.2019.2904617>
- Mukred, M., Yusof, Z. M., Mokhtar, U. A., Sadiq, A. S., Hawash, B., & Ahmed, W. A. (2021). Improving the decision-making process in the higher learning institutions via electronic records management system adoption. *KSII Transactions on Internet and Information Systems*, 15(1), 90–113. <https://doi.org/10.3837/TIIS.2021.01.006>
- Oktarina, N., Murwatiningsih, Purasani, H. N., Sehabuddin, A., & Suryanto, E. (2023). Constructing a conceptual electronic record management system model based on eight Indonesian education standards to support school accountability. *Journal of Information Science Theory and Practice*, 11(3), 16–28. <https://doi.org/10.1633/JISTaP.2023.11.3.2>
- Oktarina, N., Suryanto, E., Permana, D. F., & Saeroji, A. (2025). The role of electronic records management systems in enhancing accountability in educational institutions: Evidence from Indonesian senior high schools. *Croatian and Comparative Public Administration*, 25(3), 505–528. <https://doi.org/10.31297/hkju.25.3.3>
- Sutarjo, F. N. F., Suryaman, M., & Ismaya, B. (2024). Perbandingan sistem Electronic Records

Management System (ERMS) dan Electronic Document Management Systems (EDMS) dalam manajemen dokumen di bidang pendidikan di Fakultas Hukum Universitas Buana Perjuangan Karawang. Buana Ilmu, 9(1). <https://doi.org/10.36805/bi.v9i1.8192>