
Strengthening School Records Management through Web-Based E-Archive Digitalization: A Community Engagement Program in an Indonesian Secondary School

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Abstract: Effective records management is essential for supporting orderly, accessible, and accountable school administration. However, manual management of incoming and outgoing correspondence may create difficulties in document organization, retrieval, and preservation. This community engagement program aimed to strengthen school records management through the development and implementation of a web-based electronic archive at SMA NU 1 Bondowoso, Indonesia. The program employed a practice-oriented approach consisting of needs analysis, system design, development, implementation, and evaluation. The intervention focused on identifying administrative requirements and translating them into functional features for storing, managing, retrieving, and reporting correspondence records. The developed system was subsequently validated by three validators and obtained an Aiken's V coefficient of 0.75, indicating an acceptable level of initial validity. The program demonstrates that context-based e-archive development can provide a practical foundation for transforming manual correspondence management into a more structured digital process. Further evaluation is required to assess its long-term effects on administrative efficiency, user satisfaction, and institutional accountability. evaluation to support sustainable implementation.

Introduction

The rapid development of information and communication technology has fundamentally transformed the way educational institutions create, store, retrieve, and use organizational information. In this transformation, records are no longer merely administrative documents that need to be stored, but institutional resources that provide evidence of activities, support decision-making, and contribute to accountability. Electronic records management (ERM) has therefore become increasingly important as organizations move from paper-based practices toward digitally supported information environments. The development of ERM is not simply a matter of replacing physical documents with electronic files; it involves restructuring how records are created, classified, stored, accessed, maintained, and preserved throughout their lifecycle (Oladejo & Hadžidedić, 2021). Recent research similarly indicates that digital transformation in

educational institutions can improve the accessibility, transparency, sustainability, and responsiveness of administrative records when electronic archive systems are appropriately designed and managed (Imaniyati et al., 2025).

Schools represent an important context for strengthening records management because they continuously generate diverse administrative documents through correspondence, student administration, personnel management, academic activities, financial administration, institutional reporting, and communication with external stakeholders. Effective records management enables schools to maintain reliable institutional information and retrieve documents when they are required for operational or accountability purposes. In Indonesia, the importance of electronic records management in schools has increasingly been associated with institutional accountability. Oktarina et al. (2023), for example, developed a conceptual electronic records management model based on the Eight Indonesian Education Standards and demonstrated the relevance of structured records management for supporting school accountability. Their study emphasizes that records should be managed systematically because schools function not only as educational institutions but also as information centres whose administrative records constitute important evidence of institutional performance.

Despite the growing importance of digital records, many educational institutions continue to experience difficulties in moving from conventional records management to effective electronic systems. Digitalization does not automatically eliminate administrative problems because successful implementation depends on organizational readiness, technological infrastructure, human competence, management support, and appropriate procedures. Nasution and Natas (2024) found that digital archives can improve the management of academic and administrative information and accelerate access to institutional data, but limitations in training, infrastructure, and data security remain significant challenges for Indonesian educational institutions. Similar concerns have been identified in international research. Clemence et al. (2025) reported that although electronic records systems have been adopted in higher learning institutions, paper-based records remain widely used because electronic systems are not always effectively utilized. Their findings demonstrate that technological availability alone is insufficient to guarantee successful records-management transformation; institutional and human factors remain central to sustainable implementation.

The adoption of electronic records management should therefore be understood as an organizational process rather than a purely technical intervention. Mukred et al. (2019) demonstrated that ERMS adoption in educational institutions is influenced by technological, organizational, and individual factors, emphasizing the importance of institutional conditions in determining whether a digital records system can be effectively adopted. Likewise, Mukred et al.

(2022) found that ERMS implementation is closely related to the competency of educational institutions and that organizational, technological, and system-related factors influence successful implementation. These findings suggest that the development of an e-archive should be accompanied by an understanding of users' actual administrative tasks, existing workflows, system requirements, and institutional capacities.

This issue becomes particularly relevant when schools continue to rely on manual records management. Paper-based filing systems may create difficulties in classification, storage, retrieval, monitoring, and preservation. Documents may require considerable effort to locate, while physical storage also exposes records to risks of damage, loss, duplication, and disorganization. The problem is not limited to the physical form of documents but also concerns the administrative workflow surrounding them. Research on digital transformation in records management shows that implementation of ERMS can require changes in organizational processes and expectations, while information quality becomes a critical factor in ensuring that digital transformation produces meaningful results (Zhang et al., 2021). Consequently, digitalization needs to be designed around actual organizational processes rather than simply transferring existing paper-based procedures into a digital interface.

Recent Indonesian studies reinforce the need for context-sensitive approaches to educational records digitalization. Mufidatunrofiah et al. (2024), for instance, examined the implementation of Google Drive-based digital archives in curriculum management and found that digital archiving had been incorporated into activities involving the creation, storage, control, distribution, utilization, and supervision of records, although management efficiency remained incomplete. Similarly, Sugiarto and Supadi (2024) found that cloud-based tools such as Google Spreadsheets can support digital archive management, but their effective use requires formal procedures and regular staff training. These findings indicate that digital records management requires more than the availability of a technological platform; it requires alignment between technology, administrative procedures, and user capacity.

The situation identified at SMA NU 1 Bondowoso illustrates this practical challenge. The community engagement report documented that school records, particularly incoming and outgoing correspondence, were still managed manually. Documents were stored in physical folders and classified according to existing filing practices, but the process created difficulties in locating records quickly, maintaining orderly storage, and protecting documents from potential damage or loss. The report also identified the absence of an electronic archive system as a specific institutional need and proposed the development of a web-based e-archive to facilitate records management. The needs analysis subsequently identified functional requirements involving the storage, retrieval, editing, deletion, and reporting of incoming and outgoing correspondence,

together with non-functional requirements concerning the technological environment required to operate the system.

In response to these conditions, the community engagement program developed a web-based electronic archive through a structured sequence of analysis, design, development, implementation, and evaluation. The design incorporated system-flow analysis, Data Flow Diagrams (DFD), and Entity Relationship Diagrams (ERD), while the development stage involved system and software design followed by implementation and testing. The implementation stage then introduced the developed system into the school's records-management context, while evaluation was conducted to assess its validity and obtain feedback for further improvement. This approach is consistent with the broader understanding that effective ERMS implementation requires attention to both technological functionality and organizational use.

The program is also situated within a growing body of evidence demonstrating the potential of electronic records management to strengthen educational administration and accountability. Research involving Indonesian senior high schools has shown that ERMS can support document availability, completeness, archivist efficiency, and institutional accountability, while also emphasizing the importance of continuous training and periodic system evaluation (Oktarina et al., 2025). More broadly, recent scholarship argues that optimizing electronic archive management can contribute to administrative efficiency, institutional governance, digital literacy, and sustainable educational development (Imaniyati et al., 2025). Nevertheless, existing studies tend to emphasize either conceptual models, organizational adoption, or the evaluation of established electronic records systems. There remains a practical need for community engagement initiatives that document how a specific school can be accompanied through the transition from manual records management toward a web-based e-archive based on its actual administrative requirements.

Accordingly, this community engagement program aims to strengthen school records management at SMA NU 1 Bondowoso through the development and implementation of a web-based e-archive. Rather than treating digitalization solely as the production of a software application, the program positions the e-archive as an instrument for improving the organization, accessibility, and management of school records. The intervention focuses particularly on incoming and outgoing correspondence and seeks to provide a structured digital mechanism that responds to identified administrative needs. By documenting the process from needs analysis to system evaluation, this article contributes a practice-oriented perspective on how higher education-school collaboration can support digital transformation in educational administration. The study therefore emphasizes not only the technological product but also the institutional

problem, user requirements, implementation process, and sustainability considerations underlying the digitalization of school records.

Method

This community engagement program employed a practice-oriented development approach to strengthen school records management through the implementation of a web-based electronic archive (e-archive). The methodological design was developed from the administrative conditions identified at SMA NU 1 Bondowoso, particularly the continued use of manual procedures for managing incoming and outgoing correspondence. The approach positioned digitalization not simply as the development of a technological product, but as an intervention intended to address practical problems in records organization, storage, retrieval, and accessibility. Such an orientation is relevant to contemporary school records management, where digital archives are increasingly regarded as instruments for improving administrative efficiency, information accessibility, and institutional governance (Nasution & Natas, 2024; Imaniyati et al., 2025).

The program was conducted at SMA NU 1 Bondowoso, with school administrative personnel serving as the principal users and institutional partners. The selection of the administrative unit was based on an initial identification of problems associated with conventional records management. The activity report indicates that school documents were previously maintained through physical folders and filing cabinets, resulting in difficulties in organizing records and retrieving documents when needed (Mahbubi, 2025). The needs analysis therefore focused on the administrative personnel responsible for correspondence and identified the management of incoming and outgoing letters as the principal functional domain of the proposed system. This approach corresponds with previous research showing that school records management frequently remains constrained by manual filing practices, limited infrastructure, and the absence of specialized records-management procedures (Oktarina et al., 2023; Rohalia et al., 2025).

The implementation process consisted of five sequential activities: needs analysis, system design, system development, implementation, and evaluation. The needs analysis examined the existing records-management process, users, functional requirements, and technological requirements. Based on this analysis, the system was designed to facilitate the storage, management, modification, deletion, retrieval, and reporting of incoming and outgoing correspondence. The system design subsequently employed system-flow analysis, Data Flow Diagrams (DFD), and Entity Relationship Diagrams (ERD) to represent the relationship between administrative processes, users, and archival data (Mahbubi, 2025). A requirements-based design

was considered important because electronic records systems need to correspond with institutional workflows and users' actual information requirements rather than merely provide generic digital storage. Research on Indonesian school records management similarly demonstrates the importance of needs analysis and contextual system design in developing electronic records-management models (Oktarina et al., 2023).

The development stage translated the identified requirements and system design into a functioning web-based e-archive. The system was subsequently implemented within the school's administrative environment as a mechanism for managing incoming and outgoing correspondence. This implementation was accompanied by evaluation to determine whether the developed system corresponded with the identified requirements and could be used as an alternative to the existing manual process. Previous community engagement studies indicate that digital archive interventions are more meaningful when they combine technological implementation with practical assistance, training, and evaluation of users' capacity to manage digital records (Wardani et al., 2024; Sumarsono et al., 2026).

The final stage involved validation of the developed system by three validators representing relevant technological and administrative perspectives. The validation produced an Aiken's V coefficient of 0.75, which was interpreted in the activity report as indicating an acceptable level of validity. Feedback obtained during the validation process was used as a basis for improving the usability of the system. Data for the evaluation were derived from the needs analysis, system-development documentation, implementation process, validation results, and validator feedback. The analysis was descriptive and focused on documenting the intervention process and assessing the feasibility of the developed e-archive (Mahbubi, 2025). Accordingly, the method was not designed to establish long-term causal effects on administrative efficiency or institutional accountability, but rather to document a context-specific digital intervention and its initial validation within school records management. This distinction is important because previous studies have emphasized that successful electronic records management depends not only on system availability but also on organizational readiness, user competence, and continuous evaluation (Clemence et al., 2025; Oktarina et al., 2025).

Result

The implementation of the community engagement program resulted in the development of a web-based electronic archive designed to address the practical records-management problems identified at SMA NU 1 Bondowoso. The principal result was not limited to the availability of a digital application, but involved the establishment of a more structured mechanism for managing incoming and outgoing correspondence. The intervention responded to

an administrative environment in which school records had previously been managed manually through physical folders and filing cabinets. The initial condition created several practical difficulties, particularly in maintaining orderly records and locating documents when they were required. The activity report identified manual storage, the potential for document damage or loss, and the relatively long process of searching for archived documents as important weaknesses of the existing system. These findings are consistent with recent research showing that conventional school archiving can create inefficiency, limited traceability, and difficulties in accessing administrative documents, thereby strengthening the need for digitally supported records management (Tampubolon et al., 2026; Putra Budi Utomo & Oktarina, 2026).

The first substantive result of the program was the identification and formulation of the school's specific requirements for electronic records management. Rather than introducing a generic digital archive without considering existing administrative practices, the intervention began by examining the functions required by administrative personnel. The needs analysis showed that the system needed to provide access to incoming and outgoing correspondence records and support activities including data storage, editing, deletion, saving, retrieval, and reporting. Hardware and software requirements were also identified to ensure that the proposed system could operate within the school's existing technological environment. This result demonstrates that the digitalization process was directly connected to the operational requirements of school administration. Such contextualization is important because electronic records systems are more likely to be useful when their functions correspond to actual organizational workflows and user requirements. Oktarina et al. (2023) similarly emphasized the importance of developing school records-management models that reflect institutional requirements and educational standards rather than treating archival systems solely as technical applications.

The second result concerned the transformation of the existing records-management workflow into a digital system structure. Based on the identified requirements, the program developed system-flow representations, Data Flow Diagrams (DFD), and Entity Relationship Diagrams (ERD). These components provided a structured representation of how users interact with the system and how archival data are stored and managed. The design specifically accommodated incoming and outgoing letters, which represented the principal records-management problem identified during the intervention. The development of these system structures provided a technical foundation for transforming fragmented physical records into an organized digital information environment. This finding is consistent with the argument that digital archive implementation should integrate information structure, organizational processes, and institutional requirements. Imaniyati et al. (2025) emphasize that electronic archive

optimization in educational institutions requires the integration of information and communication technology with administrative governance rather than treating digitalization as an isolated technological activity.

The third result was the development of the functional web-based e-archive itself. The system provided an electronic environment for managing school correspondence and included functions intended to facilitate the recording, organization, storage, and retrieval of incoming and outgoing letters. The implementation therefore represented a shift from dependence on physical filing toward digitally organized records. The activity report documents the development of the proposed system and its subsequent application to the school's incoming and outgoing correspondence management. The resulting system can be understood as an administrative infrastructure that places records within a more structured information environment. Similar community engagement research in Indonesian schools has reported that digital archive systems can support administrative activities by facilitating faster access to organized information, particularly where institutions face limitations in conventional records-management practices (Laksono et al., 2025).

The fourth result was the practical implementation of the system within the school's administrative context. Implementation moved the intervention beyond the design stage by introducing the developed e-archive as an alternative mechanism for handling correspondence records. The system was intended to reduce dependence on physical filing and provide administrative personnel with a more accessible mechanism for maintaining school records. This implementation is particularly relevant because digital transformation in school administration requires the integration of technological products into routine organizational activities. Evidence from Indonesian educational institutions indicates that electronic records systems can contribute to improved document availability, administrative efficiency, and the accuracy of archivists' work when they are actually incorporated into institutional practices (Oktarina et al., 2025).

Another important result was the identification of the e-archive as a mechanism for improving the organization and accessibility of school correspondence. Under the previous manual arrangement, the retrieval of documents depended heavily on the physical organization of folders and filing cabinets. The digital system introduced a more structured method in which correspondence could be recorded and managed electronically. This change is significant because the value of an electronic archive is not simply the reduction of paper use but the creation of a more accessible and traceable information environment. Recent research on digital administration at Indonesian schools similarly reports that digital archives can facilitate document management, improve accessibility, and reduce dependence on physical documentation, although infrastructure, training, and information-security challenges remain

important considerations.

The fifth result concerned system validation. After development and implementation, the system was assessed by three validators representing relevant technological and administrative perspectives. The validation process produced an Aiken's V coefficient of 0.75. Within the activity report, this value was interpreted as demonstrating an acceptable level of validity for the developed system. The validators also provided feedback that was used to identify areas requiring improvement, particularly with regard to the usability of the system. Thus, validation served two functions: it provided an initial assessment of the suitability of the developed system and created an opportunity to refine the intervention before or during its broader utilization. The validation process is consistent with previous school records-management research in Indonesia, where expert and practitioner validation has been used to establish the practical relevance of electronic records-management models (Oktarina et al., 2023).

The results also indicate that the intervention addressed a broader organizational problem rather than merely introducing new software. The development of the e-archive created an opportunity to reorganize how administrative records were conceptualized and managed within the school. Instead of treating incoming and outgoing letters as isolated physical documents, the intervention placed them within a structured digital records-management process. This is important because effective electronic records management depends on the relationship between technology, information quality, organizational procedures, and user practices. Research on Indonesian senior high schools has demonstrated that ERMS quality, information quality, user satisfaction, and archivist performance are interconnected and can contribute to stronger institutional accountability (Oktarina et al., 2025).

Nevertheless, the results should be interpreted within the boundaries of the available evidence. The program successfully produced and initially validated a functional web-based e-archive, but the available activity documentation does not provide longitudinal measurements comparing retrieval time, user satisfaction, document-loss rates, or administrative efficiency before and after implementation. Consequently, the findings support the conclusion that the intervention produced a contextually relevant and initially validated digital records-management system, but they do not justify a causal claim that the system produced statistically demonstrated long-term improvements in school performance. This distinction is important because recent studies recommend continuous monitoring, user training, and periodic evaluation after ERMS implementation to ensure that digital systems remain effective and sustainable (Clemence et al., 2025; Oktarina et al., 2025).



Figure 1 Main dashboard interface of the web-based e-archive system at SMA Nahdlatul Ulama 1 Bondowoso.

Overall, the results demonstrate a progression from problem identification to requirements formulation, system design, digital development, implementation, and initial validation. The intervention transformed the identified problem of manually managed incoming and outgoing correspondence into a structured web-based archival solution. The Aiken's V value of 0.75 provides initial evidence supporting the validity of the developed system, while the implementation process demonstrates the feasibility of using a community engagement model to introduce digital records management within a school environment. These results reinforce recent evidence that digital archive initiatives can contribute to more organized school administration, while their long-term value remains dependent on user competence, infrastructure, system maintenance, information security, and continuous institutional commitment.

Discussion

The findings of this community engagement program demonstrate that the introduction of a web-based electronic archive at SMA NU 1 Bondowoso should be understood as an intervention in school administrative records management, rather than merely as the development of a software application. The intervention began with a clearly identified organizational problem: incoming and outgoing correspondence was managed manually, with records stored in physical folders and filing cabinets. This arrangement created difficulties in organizing documents, retrieving records, and reducing the risk of physical loss or damage. The

development of the e-archive therefore addressed a practical administrative need by introducing a more structured mechanism for recording and accessing institutional correspondence. This finding is consistent with research showing that conventional school filing systems can impede administrative efficiency and document traceability, particularly when institutions generate substantial quantities of records but have limited archival infrastructure (Putra Budi Utomo & Oktarina, 2026).

The first important implication of the findings concerns the role of needs-based digitalization. The system was not developed independently of the school's administrative conditions. The needs analysis specifically identified administrative personnel as the users of the system and defined functions related to incoming and outgoing correspondence, including storage, editing, deletion, saving, and reporting. This approach strengthens the relevance of the resulting intervention because the technology was designed around an existing administrative workflow. Oktarina et al. (2023) similarly argue that electronic records management in schools needs to be constructed according to institutional requirements and the broader framework of educational standards. Their model demonstrates that records management has implications beyond document storage because properly structured records support reporting, accreditation, institutional accountability, and organizational information needs.

The findings further suggest that digital transformation in school administration is fundamentally an organizational process. The introduction of an e-archive changes how administrative staff interact with records: documents that were previously dependent on physical classification become information resources that can be organized and accessed through a digital environment. This transformation is important because records management is closely connected with the ability of an institution to maintain reliable evidence of its activities. Recent research by Oktarina et al. (2025) found that ERMS use in Indonesian senior high schools was associated with high document availability and completeness, as well as improvements in archivists' efficiency and accuracy. The present program supports this broader argument at the intervention level by demonstrating how a school with identified manual-records problems can begin the transition toward a digital records-management environment.

Another significant finding is the importance of system design based on actual administrative processes. The use of system-flow analysis, DFD, and ERD indicates that the intervention attempted to translate the school's administrative requirements into a structured information system. This is important because digitalization can reproduce existing administrative problems if technological systems are developed without first understanding how information is created, processed, stored, and retrieved. In this program, the design was directly connected to the management of incoming and outgoing correspondence. Such an approach

corresponds with the conceptual model developed by Oktarina et al. (2023), which places records management within the institutional structure of schools rather than treating it as a separate technical activity.

The results also reinforce the argument that electronic archives can function as instruments of administrative accountability. School records provide evidence of institutional activities and can be required for reporting, verification, accreditation, and decision-making. When records are difficult to locate or poorly organized, the institution's capacity to demonstrate its activities may also be weakened. The development of a structured e-archive potentially strengthens this dimension by creating a more systematic environment for correspondence records. Oktarina et al. (2025) found that ERMS can support school accountability through improved document availability and completeness. The present intervention therefore has significance beyond operational convenience: it contributes to the organizational infrastructure required for schools to maintain reliable administrative evidence.

The findings are also consistent with recent community engagement research. Laksono et al. (2025), for example, reported that digital archive information systems can streamline school administration in contexts characterized by resource limitations. Their study emphasizes that school archives are important for administrative operations, decision-making, accreditation, audit, and institutional documentation. Similarly, Sumarsono et al. (2026) demonstrated that digital archive transformation combined with training and mentoring can strengthen administrative staff competence, although infrastructure and school readiness remain important constraints. These studies reinforce the interpretation that technological intervention is most meaningful when it is accompanied by institutional support and attention to the capabilities of the people who will operate the system (Mahbubi, 2013).

Nevertheless, the present findings also highlight an important distinction between system validity and long-term effectiveness. The developed e-archive received an Aiken's V coefficient of 0.75 from three validators, and the feedback generated through validation was used to improve the system. This provides initial evidence that the system was considered sufficiently appropriate within the evaluation framework used by the program. However, the validation result should not be interpreted as evidence of long-term organizational impact. The available program data do not establish whether the system subsequently reduced document-retrieval time, increased user satisfaction, reduced archival losses, or improved institutional accountability over an extended period. This distinction is particularly important because recent research recommends continuous evaluation of ERMS performance and user satisfaction after implementation rather than relying solely on initial system validation (Oktarina et al., 2025).

The discussion also points to the importance of human capacity and organizational

readiness. An electronic archive can only function effectively if administrative personnel understand how to enter, classify, retrieve, update, and maintain records. Recent community engagement research on digital school administration has shown that digital transformation requires mentoring, practical training, and the development of staff digital competencies. Fauzi et al. (2025), for example, reported that a digital school administration assistance program involving planning, implementation, and evaluation improved participants' confidence and encouraged schools to begin implementing digital administrative systems. Similarly, Sumarsono et al. (2026) found that digital archive training strengthened administrative staff competence while also identifying hardware infrastructure and school readiness as continuing challenges. These findings imply that the e-archive developed at SMA NU 1 Bondowoso should be understood as part of an ongoing capacity-building process rather than a one-time technological intervention.

The intervention also has implications for sustainability. Digital records management introduces new responsibilities that do not necessarily exist in the same form within a paper-based system, including data security, system maintenance, backup procedures, user access management, and periodic evaluation. Sulistiawati et al. (2025), examining digital archive management through Google Drive at an Indonesian junior secondary school, emphasized the importance of planning, implementation, and evaluation in maintaining an effective digital records environment. Therefore, the successful development of the e-archive should be followed by institutional procedures that determine who manages the system, how records are classified, how frequently data are backed up, and how system problems are addressed. Without these mechanisms, digitalization may simply replace physical records with another form of poorly managed information.

From a community engagement perspective, the program demonstrates the value of university-school collaboration in solving context-specific administrative problems. Rather than transferring a standardized technological solution without adaptation, the intervention was developed from the school's existing conditions and administrative requirements. This is particularly relevant for schools that may have limited technological resources or lack specialized personnel for information-system development. Community engagement can function as a bridge between academic expertise and practical institutional needs, enabling schools to obtain technological assistance while simultaneously identifying organizational improvements. Recent community-based digital archiving programs similarly demonstrate that collaboration, mentoring, and hands-on assistance can facilitate digital transformation in educational institutions (Laksono et al., 2025; Fauzi et al., 2025).

Overall, the findings indicate that the web-based e-archive represents a practical entry point for strengthening school records management, particularly in the area of incoming and

outgoing correspondence. Its contribution lies in connecting technological development with an existing administrative problem, translating user requirements into system functions, and validating the resulting intervention. At the same time, the findings should be interpreted conservatively. The program establishes the feasibility and initial validity of the intervention, but further longitudinal evaluation is necessary to determine its sustained effects on efficiency, information quality, user satisfaction, accountability, and institutional performance. In this sense, the most important contribution of the program is not the technological system alone, but the establishment of a foundation from which SMA NU 1 Bondowoso can progressively develop a more systematic, accessible, and accountable records-management culture.

Conclusion

The community engagement program demonstrated that web-based e-archive digitalization can provide a practical foundation for strengthening school records management, particularly in the administration of incoming and outgoing correspondence. The intervention responded to problems identified in the existing manual filing process, including difficulties in organizing and retrieving documents and the risk of physical damage or loss. Through a sequence of needs analysis, system design, development, implementation, and evaluation, the program transformed these identified administrative needs into a structured digital records-management system.

The developed e-archive incorporated functions required by school administrative personnel for managing correspondence records, while the use of system-flow analysis, DFD, and ERD provided a structured basis for translating administrative requirements into system functionality. The implementation therefore demonstrates that digitalization can be approached as an organizational improvement process rather than simply as the introduction of new software. This perspective is consistent with recent evidence that electronic archive systems can improve accessibility, administrative efficiency, and institutional governance when they are aligned with actual organizational requirements.

The initial validation also provided supporting evidence regarding the feasibility of the developed intervention. Assessment by three validators produced an Aiken's V coefficient of 0.75, accompanied by feedback for improving system usability. Nevertheless, this finding should be interpreted as evidence of initial validity rather than proof of long-term effectiveness. The available program data do not provide sufficient longitudinal evidence to establish changes in retrieval time, user satisfaction, archival accuracy, or institutional accountability after sustained implementation.

The sustainability of the e-archive consequently depends on continued institutional

commitment, including user competence, system maintenance, data security, backup procedures, infrastructure support, and periodic evaluation. Recent research similarly emphasizes that digital archive transformation requires continuous training and appropriate institutional support rather than relying solely on technological implementation. Future community engagement programs should therefore extend the intervention toward systematic user training, development of standard operating procedures, measurement of administrative performance before and after implementation, and long-term evaluation of the system's contribution to school governance.

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