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Construct A Conceptual Electronic Record Management System Model Base on *Eight Indonesian Education Standards* to Support School Accountability

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ABSTRACT

Record Management, especially in schools as an institution's information centres, needs serious attention from government agencies. Under Record Management's policy, there needs to be practical guidance on Record Management specific to schools. This paper aims to construct a Record Management model based on the Eight Indonesian Education Standards to support school accountability in Indonesia. The urgency of this paper to fill the gap in the Electronic Record Management System (ERMS) role is primarily to support school accountability. It is important to include educational laws and regulations in Indonesia to be a foundation in archive management, including preparing the Electronic Record Management System (ERMS). This research uses the RnD methodology by applying three stages of field study, model design development, and final model. A total of 30 records managers were selected for the interviews. Furthermore, the trial was carried out in 30 Senior High Schools. The research sampling consisted of representatives of archive managers at selected schools from five islands in Indonesia (Kalimantan, Java, Papua, Sumatra, and Sulawesi). Our research findings show that conceptual models meet valid criteria and significantly impact archivist performance in better schools. The practical implication is that the archival management model based on national education standards policies contributes to practical archives and records management to support school accountability.

Keywords: School Accountability, Digital Record, Record Management System (ERMS), Eight Indonesian Education Standards.

1. INTRODUCTION

Accountability, legitimacy, and trust in an institution are exciting topics that should be studied further. The ease of information flow is both a gift and a curse of a large-scale system. All the benefits and opportunities brought by the information revolution will align with the challenges that arise when information is misused. This is one of the consequences that should be considered to maintain the confidentiality of the information itself. However, transparency and openness of information have become unmistakable signs of accountability. The need for information by the public requires institutions or institutions to provide transparent data and facts to increase public trust.

Accountability has become a key determinant of policy by education managers. Adequate standards of transparency and good administrative Governance will undoubtedly encourage accountability, yet most policies have been selected based on archival evidence in the past. However, there should be clear boundaries that accountability is the primary means by which the public can address issues of transparency and information disclosure. When the information has been used, it should be possible to determine what happened and its improper use. There is no denying that the rapid pace of research and technology has driven today's society so that each country's economic and social well-being depends on its ability to employ its human resources; Nevertheless, the growth of science and technology is also determined by a sound education system(Chisita & Tsabedze, 2020).

Accountability has even become part of the accreditation assessment set by accrediting agencies. It is understood that an accountable institution can then provide evidence of the performance that has been carried out in the assessment period. Furthermore, how the linkage of accountability and accreditation has been clearly described by Macheridis & Paulsson, (2021) argue that accountability emerges as a reinforced requirement, especially in two areas of education, first on a quality assurance system inspired by the new public management, particularly evaluation, and accreditation; second on performance measurement, including financial evaluation and appraisal. Carey, (2007)

argues that the way accountability is managed for example, external accreditation as a source of accountability can be very close to self-accountability because it is a process of learning and reviewing from internal and external. Accountability involves the fundamental assumption that the quality of accreditation assurance provides room for accreditation bodies to impose their standards and agendas, encouraging the improvement of the quality of education at certain ranks. It should be underlined that applying accountability and accreditation will provide more excellent value and better innovation capabilities to meet global challenges (Hoffman, 2013). Therefore, accountability will always be closely attached to educational institutions' accreditation because the accreditation assessment process will require various information and evidence to measure the availability of information (accountability) assessed by accrediting agencies. Cochran-Smith, (2021) state accountability has been considered a powerful policy tool for improving education, including accreditation requirements.

Based on the National Accreditation Board of Schools / Madrasas (NAB S/M), 1,239 private Senior High Schools and Madrasah Aliyah based on the five largest islands in Indonesia showed that 559 private Senior High Schools and Madrasah Aliyah levels were accredited B, which no better than A. It shows that school managers need more ability to provide accreditation documents as an instrument used in accreditation assessment. In this context, one measure of school accreditation is school accountability. The school's accountability still needs to improve because one measure of the accreditation assessment is the completeness of the school's documents. It is because the direct support for school accountability assessments can be seen from the completeness of the documents during the Accreditation assessment.

Various organizations, particularly educational institutions, face the challenge of incorporating technology into administrative or administrative tasks. Even new technologies have driven mass digitization to improve access to records management (Procter, 2017). Currently, digital archives are overgrowing, and their emergence has become the demand of the times (Rahman, 2020). School accountability, in this case, can be interpreted as an effort to account for all school activities to internal and external parties (Rosjidi, 2011). Following these efforts, schools should prove that they have stored a collection of documents owned as knowledge assets and can be accounted for through a designated archive management infrastructure (Cheng, 2018).

According to Mojapelo, (2022), archives produced and received by institutions should be well managed to ensure accountability and transparency for good Governance and effective planning. Ibara, (2010) affirms that without archives, there would be no accountability because it is almost difficult to account for the different activities that have been carried out. In this case, the management of school archives should be genuinely accountable to the community, meet legal and policy requirements, and be used for school development (Cheng, 2018). Schools are responsible for community members; therefore, archives as current, authentic, and objective evidence are essential in guiding school administration and other stakeholders in good planning and decision-making.

Educational archives are required to be effective institutions and transparent and accountable. Schools as a public service require good and effective administration and leadership to carry out their duties, as evidenced by the existence of archives. The management and storage of archives could be more effective. In that case, the school will lose its transparency function because it does not have valid evidence of the various materials produced. Managing school documents is tantamount to protecting the interests of school leaders, teachers, students, parents, and other stakeholders (Malone, 2017).

In essence, archive management is essential for various reasons. According to Cheng, (2018), an organization generates information, leading to more archives in paper and electronic form. Therefore, organizations should manage these archives well to be accounted for by the public and grow sustainably. Due to technological advances, organizations can now develop online databases that handle large volumes of data. According to Muchaonyerwa & Khayundi, (2014), an electronic archival system controlled by providing adequate infrastructure is needed.

Another thing that is emphasized in electronic archives is that monitoring the level of readiness is an essential step in reducing implementation failures and user rejection of electronic archives (Nusantara et al., 2018). In addition, if the established policies and infrastructure are supported by skilled and experienced archival and archival personnel and excellent and structured training, the management of traditional archives and electronic archives in the company will succeed (Asogwa, 2013). Furthermore, it is essential to evaluate and pay attention to the various crucial and fundamental challenges related to the security of its archives (Xiao et al., 2021).

However, archive management at the education unit level, such as in schools, has received less attention, including archive management and the development of standardized information systems to help manage school archives. Research by Oktarina et al., (2019) found that archival administration in schools still relies on a manual system for archiving archives. Manual archiving techniques cannot accommodate speed and precision when archiving is needed. Netshakhuma, (2021) state that most educational institutions using manual file systems will only provide access to archive management.

The problem in this research is that accountability is one of the problems faced by almost all educational institutions, including schools, which consequently impacts school accreditation (Hoffman, 2013). The main problem is that schools should provide the documents accrediting agencies need at the assessment time. Such as Hasyim & Wijaya, (2019) argue that the main problem in the accreditation process for educational institutions is the weak supporting capacity of the required documents; for example, documents are not available (loss documents), documents are found for a long time, documents submitted do not match the criteria, other problems are document management carried out centrally, making it difficult to find documents when needed. The problem in preparing for accreditation is that supporting data and information required to complete accreditation forms must be well documented (Ardiada et al., 2022). So good document management is needed to facilitate the preparation of forms and the preparation of accreditation supporting documents (Hasyim & Wijaya, 2019).

Another problem that often occurs is the awareness of documenting reports by educational actors. Management of accreditation documentation filing is essential because eighty percent of organizational failures are caused by a need for better administrative management support (Widiantoro & Yodi, 2020). The high incidence of conveying the availability of information originating from poor records at schools during accreditation assessments by accrediting

agencies is a crucial factor in the emphasis on implementing an Electronic Record Management System (ERMS). Most archivists in schools manage records manually. Technological developments such as the electronic record management system (ERMS) have exceeded the professional capabilities of archive management and archivists. The digital era demands the role of archivists and record managers related to record management to switch to electronic record management systems (ERMS) (Netshakhuma, 2019). Indonesia has its standards (typical) in the implementation of education according to the National Standards of Education policy in Indonesia. However, only a few researchers or practitioners realize that this standard can be adopted in the Record Management model, which is then promoted as an Electronic Record Management System (ERM). If record managers follow the change process correctly, they may accept new initiatives to improve recordkeeping practices (Shonhe & Grand, 2020). Therefore, this study departs from a considerable research effort by offering a change in Record Management in the education sector. Our alternative is to design a system oriented towards information accountability and proper use, rather than information security and access restrictions, which we call the Electronic Record Management System (ERMS) based on eight national education standards in Indonesia to support school accountability. This research aims to develop an Electronic Record Management System (ERMS) model based on the National Standards of Education in Indonesia and its implementation in supporting school accountability. In addition, the research results are intended to recommend change management strategies that can be adopted when implementing ERMS under the National Standards of Education in Indonesia.

2. LITERATURE REVIEW

2.1. Accountability

Accountability is the ability to provide evidence to higher authorities for actions against the broader community in an organization (Rasul, 2012). According to Turner and Hulme, (1997), responsibility is defined as follows:

Accountability is a complex notion that is more difficult to implement than corruption eradication. Responsibility is required for public sector entities to prioritize horizontal (social) accountability over vertical accountability (higher authority).

Accountability is the ability of public sector organizations to respond to parties with interest in the organization (Wicaksono, 2015). Accountability is a type of responsibility from an entity to the obligations obtained, particularly in managing the finances of an entity or organization. It is commonly employed by users of the entity's financial information originating from sources other than the entity (Sari et al., 2018). Accountability is also a measure of the success of a specific entity's or organization's aims and objectives. According to Dee and Dizon-Ross, (2019), the potential impact of the public accountability system stems not only from external pressure but also from the support and intervention provided to districts and schools. Proper archives management is critical for achieving efficiency, transparency, accountability, and school service improvement (Mojapelo, 2022). According to Aman et al., (2013), the dimensions of accountability include transparency, responsibility, control, responsibility, and responsiveness. Meanwhile, (Rasul, 2012) proposes five dimensions of accountability: 1) legal and honest (probability and legality accountability), 2) managerial, 3) program, 4) policy, and 5) financial.

The existence of archives management allows principals and other stakeholders to plan effectively by having information to direct planning efforts to decision-making. With archives, sound planning is merely wishful thinking, and it will be possible to attain because archives are required to make policy decisions.

2.2 Indonesian National Education Standards

Indonesia has a minimum standard of criteria regarding the education system that applies throughout the country. These criteria are answered in Law No. 20 of 2003 concerning the National Education System. The function of this standard is a basis for management in the process of achieving quality education. Meanwhile, the goal is to ensure national education quality within the context of teaching the nation's life and creating the character and civilization of a dignified nation.

Furthermore, the elaboration of the eight national education standards is: (1) content standards are material components and levels of competence to achieve graduate competence at certain levels and types of education. (2) process standards related to the implementation of learning in each academic unit. (3) Graduate Competency Standards (GSC) are criteria or qualifications concerning the ability of graduates, which are divided into attitudes, knowledge, and skills. (4) Standards of Education and Education Personnel are educational criteria for eligibility for education in positions. (5) The standard of facilities and infrastructure includes the minimum criteria for facilities and media that support learning. (6) Management requirements include effectively and efficiently planning, implementing, and overseeing educational activities at education units, districts/cities, provinces, and national management. (7) Financing standards specify the components and quantity of operating expenditures for educational units that are effective for one year. (8) Assessment standards are linked to various systems, procedures, and assessment instruments to establish student learning outcomes.

2.3 Electronic Archive

Regulation No. 6 of 2021 of the National Archives of the Republic of Indonesia Concerning the Management of Electronic Archives clause 1 paragraph 2 defines Electronic Archives as archives created, specifically archives created and received in electronic format or archives resulting from media transmission. According to Sugiarto and Wahyono, (2015), digital archives are essentially the same as traditional ones. There are, however, distinctions in the cabinet's shape, particularly between a virtual cabinet and a virtual map. Furthermore, according to Duranti, (2010), the fundamental difference between electronic and traditional archives is that electronic archive components can be in many areas of the media or even systems and may only exist physically if purposely constructed. This indicates that a complete archive is one whose components are inextricably and immutably associated with one another and have been made explicit by translating them into a form element, such as specifying archive bindings in a categorization

code. According to Priansa and Garnida, (2013) argue digital archives are a combination and preparation of archives using technology, specifically manual archives turned into digital data via a scanner procedure.

Digital archives include three components: virtual cabinets, virtual folders, and archive sheets in the form of files and (Sugiarto and Wahyono, 2015). A virtual cabinet is a database that resembles the shape of an authentic cabinet used in conventional filing systems; the difference is that the ability to accommodate data in a virtual cabinet is limited, whereas this virtual cabinet is not; the limit is the physical capacity of the hard drive to store digital data. A virtual folder is a database with the same attributes as a physical folder in a traditional archiving system. However, unlike traditional folders with restricted document storage capacities, this virtual folder has unlimited storage possibilities. Archive sheets in virtual folders can be either document files or graphics. Document files are files made by Microsoft Word, Excel, and PowerPoint, among other programs, while the image file is a file in the form of an image as a result of a scanner or bitmap import from other media.

3. METHOD

The research design and development (R&D) approach was applied in this study. The research steps for the digital archive system model based on 8 SNP Borg and Gall (1983) have been simplified through three stages. The first stage is a preliminary study on the management of school records that have been carried out so far. The second stage is the Final Model Electronic Record Management System Model based on the Eight Indonesian Education Standards. The following stage involves creating a hypothetical model; the final stage is the final model.

3.1 Participants

Following a qualitative approach, we interviewed at least 30 managers selected from five islands in Indonesia (Kalimantan, Java, Papua, Sumatra, and Sulawesi). The demographic characteristics of the 30 participants are provided in Table 1.

Table 1. Demographic Characteristics Participants

Demographics	Description	N (30)
Age groups	18-27	10
	28-37	17
	38-47	3
	>47	0
Employment status	civil servant	5
	honorary employee	25
Education level	Less than high school degree	2
	High school graduate	25
	Bachelor's degree	3

This study's subjects or key informants were human data sources (key informants). Informants were determined as data sources using purposive sampling techniques or with specific considerations, school accreditation status, knowledge of archives, and involvement in school archive management.

3.2 Data Collection and Analysis

Data collection techniques in this study were at least carried out using two techniques, namely interviews and open questionnaires. Research data was obtained by using interviews and open questionnaires. We interviewed 30 school records managers and then collected information using questionnaires. Our research presents some interview results that represent informative answers considering relatively the same answers. Furthermore, we distributed questionnaires to facilitate the process of collecting complementary data through a needs analysis from the presence of ERM. Data analysis was carried out using the analytical model initiated by Miles and Huberman (1984) through three stages: data reduction stage, data display, and conclusion or verification. The data in this study have also gone through a triangulation process to increase the credibility and validity of research findings. Triangulation is intended to reduce, eliminate, or compensate for the lack of a single strategy, thereby increasing the ability to interpret findings (Thurmond, 2001).

4. RESULTS AND DISCUSSION

4.1 Preliminary Studies Stage

This stage describes various phenomena relevant to managing records in schools already running. We conducted open interviews with some of the informants we selected. We use interview guidelines based on phenomena that occur in the field. We present the data from the interviews as follows.

We asked about the implementation of record management in schools. One informant stated:

"...so far, we are still using manual storage. We store all school documents using the owner by providing the subject of our archives. We arrange each owner neatly in a wooden cupboard. When we need archives, we have to look for these owners. We need more funds to adopt technology in records management at our school. We only have one officer who concurrently has other duties because there is no special officer...."

The second informant stated:

"... in our school, there is no special filing officer. Archive storage at our school is still done manually. We have several filing cabinets to store archives—usually, we borrow archives manually by looking for a one-by-one defiling cabinet. We have not found the right system to store archives digitally. Besides, we need training to manage archives digitally because this is something new for us...."

The third informant stated:

"...we still manage the various archives manually. Because so far, we have yet to get the right software or application to manage school records. Managing archives manually requires much space; moreover, the procedural retention of archives means we have not destroyed some. We know that digital archives make school administration activities easier, but we have not been able to provide software or application facilities that suit our needs...."

The fourth informant stated:

"...most of the archives at our school are stored manually, and some are stored on a laptop on local disk C. We have not used electronic or digital archives because there has been no training effort. Even though nowadays it is important to back up archival data digitally so that it is easy to distribute when needed by various parties...."

The fifth informant stated:

"...actually, we want to use archives electronically or digitally. However, various providers have offered software or applications that do not suit our needs. Our example requires the storage of archives relating to the administration of the education sector, such as curriculum archives, performance archives, evaluation results archives, and others. Usually, applications or software are offered to use incoming and outgoing files that are more appropriate for companies. We have not found the right archive app for our school...."

Disclosures based on interviews conducted with the five informants show that they carry out record management traditionally and are guided by traditions from the previous system. Of course, this is ineffective because the more archives, the more difficult it is to retrieve. Archive management that has been carried out so far, overall archive administration is adequate, but archive recovery still requires a long time. The maximum archive recovery time is usually one minute. In addition, the archive management of 30 high schools in the five largest islands in Indonesia is based on something other than archive management, according to Law no. 43 of 2009. No special officer handles school archives, and the school still needs a standard operating procedure (SOP) for record management. In addition, the management system is still manual. Administrative officers oversee school records in addition to other administrative responsibilities.

Elements of parties related to managing school records indicate that the parties involved in managing school records still need to have a solid commitment to managing school records. The non-implementation of the SOP for archive management for storage and lending shreds of evidence. They were borrowing archives without following the SOP, making archives unknown and uncontrollable. This is why archives sometimes need to be found. Furthermore, based on the views of administrative officials who handle archives, this differs from the established archive storage system. The archive factor in supporting school accountability shows that the current management of school records needs to be revised. There is no agreed archive storage mechanism, and no SOP has been made. In addition, the parties committed to implementing school management still need to be higher.

Fig. 1 Factual Model of School Record Management so far

To get more information in the information system needs analysis, we do it by distributing questionnaires. Based on the questionnaire we distributed, we found that the mean value of the three questions we asked indicated the level of need is "very needed" This means that record managers in schools need an electronic record management system base on the characteristics of work in the field of education.

Table 2. Participant Response Needs Analysis

No	Question	Mean (n=30)	Description
1.	Do you need an application (ERM) to help with your filing work at school?	3,60	Very Needed
2.	If you need an application (ERM), do you need the classification of the documents you are working on according to Indonesian educational standards?	3,47	Very Needed
3.	Your primary need is an application (ERM) with classification according to national education standards.	3,73	Very Needed

No	Question	Mean (n=30)	Description
	Average	3,60	Very Needed

4.2 Model Design Development Stage

The development of this system is to answer the phenomenon of various problems and the current weaknesses in managing school records. Inadequate management of school records results in reduced documentation support to support school accountability. When an archive is urgently needed and cannot be found in less than a minute, the archive is saved or lost. As a result, they supported documentation for school reports, information, and accreditation that needed to be recovered. In Indonesia, the digital archive system model is based on 8 National Education Standards, including considerations related to school accountability to internal or external school parties, accreditation, and reports. Thus, the storage system is 8 SNP based on the problem or subject system (*Subjectical Filing System*). In Indonesia The *Subjectical Filing System* here is a *Subjectical* based archival storage system where documents are grouped into an index list to determine *Subjectical* that generally occur. We use the existing eight educational standards as the main Subjectical Classification in the Filing System, and then documents can be stored following the main Subjectical given. As for the main Subjectical in the ERMS that we have compiled, we describe it in the following table:

Table 3. Types of archives stored based on *Subjectical Filing System*

No	*Subjectical Filing System*	Example Archives Stored
1	Standard of Management	Documents for determining the school's vision and mission, the medium-term work plan, the annual work plan, school activity, and budget plans, the school revenue and expenditure budget plan, student administration documents, student statistics data, etc.
2	Standard of Content	Curriculum documents, curriculum development documents (including local content curriculum), curriculum development decrees, collection of references/references/regulations, etc.
3	Standard of Process	Teacher administration (syllabus, annual program, semester program, details of effective week/day, learning implementation plan, teaching schedule, assessment documents, attitude assessment sheets, remedial and enrichment programs and implementation, assessment analysis, absorption, teacher agenda, etc.);
4	Standard of Graduate competency	Student assignments, student achievements, national examination, school standing orders, etc.
5	Standard of Teacher and Staff	Files of educators and education personnel, employee handbook, collection of decision letters on the division of tasks and job descriptions, teacher and staff presence and their recapitulation, minutes of meetings, programs and reports on the implementation of library management, programs and information on the performance of laboratory management, teacher and staff participation documents in a scientific forum.
6	Standard of Educational Assessment	Assessment planning, assessment implementation, evaluation, etc.
7	Standard of facilities	Legality, reports, textbooks and etc.
8	Standard of Financing	Facilities and infrastructure investment, finance, guidelines for financial management, etc.

Next Step, we developed a model designed to address the various difficulties faced by school staff. We conducted focus group discussions (FGD) to get assessments and responses from staff at the school. Some of the input they provide is in the form of the following:

Expert informant 1 stated that:

> The preparation of an electronic records management model should adapt to the context and characteristics of the archives produced by the educational institutions to include them in the guidebook when developing a system. This is necessary so that users are clear when classifying archives.

Expert informant 2 stated that:

> "The purpose of developing the model is to overcome problems in the field and create an impact or contribution from the results of implementing the intended model so that various parties can easily understand it.

Expert informant 3 stated that:

"There are many archives in the field of education. It is necessary to clarify the specifics of the model developed regarding archives that can be stored following the standards developed."

Practitioner informant 1 stated that:

"We need an archive storage container that is under the educational context. We have archives of various educational activities and sections. We hope that contextually the difference between the model developed and what we have been doing so far will show a significant difference."

Practitioner Informant 2 stated that:

"The administration that we do is very complex. The preparation of the model should also adapt to the complexity of administrative activities that are generally carried out at school."

Next, we evaluate and refine the model from the input provided by experts and practitioners. We strive to promote the Eight Indonesian Education Standards as the strength of our model. Records are created and generated following the activities and events of the institution so that we consider the various records produced by the school. Then we adopt and classify them according to the Eight Indonesian Education Standards. The final model that we compiled is as follows:
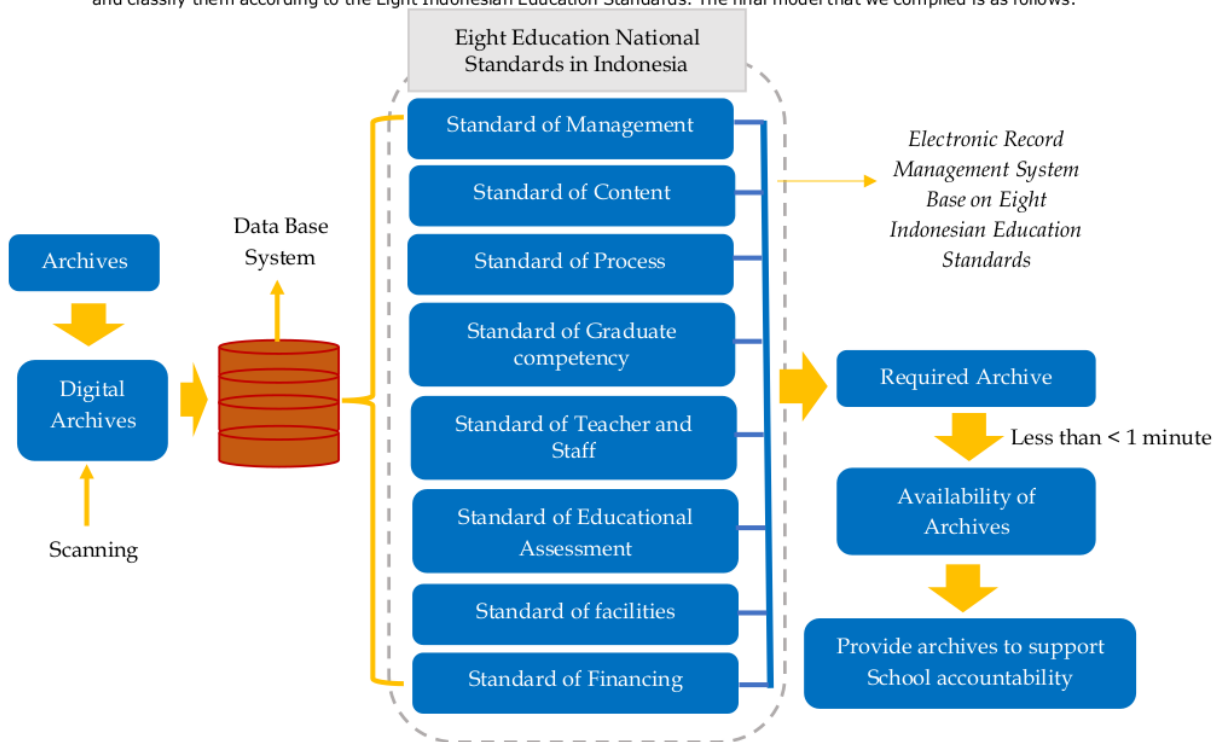

Fig 2. Final Model Electronic Record Management System Base on *Eight Indonesian Education Standards*

Archives received or produced by the school will initially undergo a "media transfer" or scanning process. Furthermore, it is included in a database in which eight standard classifications follow national education standards. The main problem in the field is that there needs to be a firm commitment to switch to digital-based record management for various reasons. We provide alternative models and application descriptions that we simplify according to the needs of the staff at the school. Figure 2 illustrates the Electronic Record Management System (ERMS) model we compiled. Various letters will be stored in one database.

Furthermore, if you need an archive, you only need to enter a "keyword" or "Achieved Code" that is less than 1 < minute will be found. Requirements for timely, complete, and correct supporting materials for reports and information. To overcome these problems, one solution is to develop an archive digitization system. Authentic archives are scanned using scanning technology and stored in an electronically based system. To overcome the problem of the weak supporting

capacity of school accountability documents, a digital filing system model was developed based on eight national education standards. Next, we describe the Electronic Record Management System (ERMS) software we are developing, as shown in Figure 3.
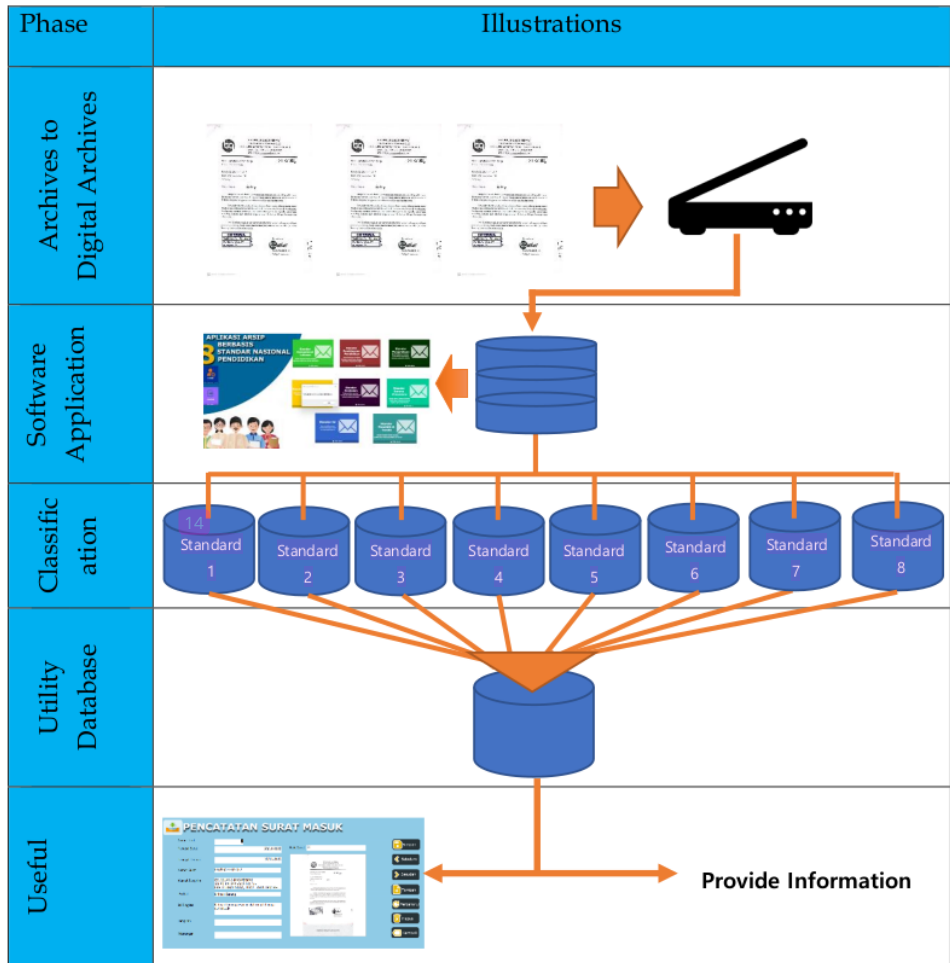

Fig 3. Illustration Record Management System Model Base on *Eight Indonesian Education Standards*

The development of a digital archive system model based on eight SNPs is an extension of the Indonesian National Education Standards, which include eight standards: content standards, process standards, graduate competency standards, educator standards, academic staff standards, facilities, and infrastructure standards, management standards, financial standards, and educational assessment standards. The availability of information in a database will facilitate record management in schools. All forms of information can be stored according to a predefined classification. If, for example, it is needed, it is unlikely that the archive will not be found or even lost. Because the use of technology can be backed up as needed.

This research aims to develop an Electronic Record Management System (ERMS) model based on the National Standards of Education in Indonesia and its implementation in supporting school accountability. Accountability goes hand in hand with the availability of information external parties need. Archives, in this case, we agree as a center of information to be the key of evidence that can be used as a measuring tool in accountability. Excellent and proper records management will undoubtedly affect how information is provided as a measure of accountability. For example, in assessing school accreditation, you always need complete information on various activities and aspects of school assessment. Accreditation is carried out within a certain period, while records always accumulate at any time. Therefore the school's ability to carry out proper record management is critical in supporting school accountability.

Accountability is a component of good Governance. (Kumah and Brazys, 2016) Mentioned that there is a link between the legislation reviewed and accountability. Access to information is vital for good Governance. Access to information is also a key variable for achieving reasonable governance goals (Netshakhuma, 2019). Freedom of access to

information is recognized as a fundamental aspect of the objectives of accountability, transparency, and openness (Thurston, 2015). This is because records provide evidence to support the investigative phase of the accountability process. With reliable recording activities, accountability can be proven (Netshakhuma, 2019).

Archives are the most important source of knowledge and experience for any institution. Good records management will provide institutional accountability and access to timely information in the context of developing countries, but obstacles in the field of improper records management are the main obstacles (Ain, 2019). Currently, many public services, including schools, must switch to electronic systems to be more efficient in producing documents, the number continually increasing from time to time. The traditional method requires a lot of space or inefficient places, and there is a high probability that the archive will be tucked in or lost. However, apart from the benefits of technological advances, most organizations need to pay more attention to records management (Dikopoulou & Mihiotis, 2012). Records management must still be prioritized in developing countries (Asogwa, 2012). The design of electronic record management is urgently needed to help work units find documents quickly and takes little time to periodically search and store (Astari et al., 2020). Since records are the product of action, it is crucial to provide an information system model based on function so that actionable records remain intact and reliable and that records are reliable (Mukred and Yusof, 2015).

Many studies have focused on examining how ERMS can improve school performance, such as Mukred et al. (2018) in their finding that organizations are determinants of intention to adopt ERMS. The findings also explain that the dimensions of top management support, financial management, training, and policy are essential to realizing this intention. Ismael and Okumus (2017) that implementing electronic document management can improve document discovery more quickly and efficiently. However, there still needs to be more studies on preparing the ERMS based on the inherent characteristics of the organization, such as the educational standards in Indonesia that we studied. Therefore, paying attention to the Electronic Record Management System according to specific characteristics is essential. The characteristics in question are compatible with various stored documents that must be adjusted to the device used. ERMS is the electronic management of electronic and no records contained in IT systems using computer equipment and software per accepted records management principles and practices (Sprehe, 2004).

The alternative we produced from this research is a system design oriented towards information accountability and proper use, rather than information security and access restrictions, which we call the Electronic Record Management System (ERMS) based on eight national education standards in Indonesia to support school accountability. The study's results recommend a change management strategy that can be adopted when implementing the ERMS following the Indonesian National Education Standards. The change management strategy systematically adjusts ERMS tools in school archival activities to support accountability. Without an appropriate management strategy, ERMS can contain inauthentic and unreliable information that lacks integrity, so it cannot be used (Mukred and Yusof, 2017). Our change strategy is structured in four steps which we present in figure 4.
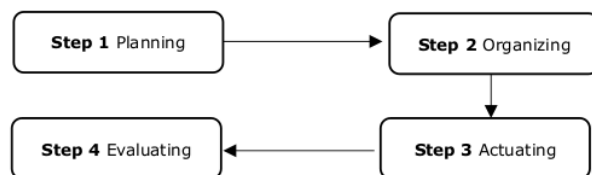

Figure 4. ERMS Change Management Strategy

Planning is an activity related to a series of rational sequences in preparing plans with decision-making for using ERMS in the long term and short term. In this case, starting from determining a strategy such as a needs analysis, a clear framework with the goals to be achieved. Furthermore, the preparation of policies by the school principal. The method is in the form of preparing standard operating procedures (SOP). Finally, the costs must be prepared to achieve the goal.

Organizing determines activities and responsibilities to the people, or staff experts needed to achieve goals. In this study, ERM responsibilities must be clearly described because it relates to the legal basis and job descriptions in carrying out work. Establishing authority and responsibility will make it easier to identify when problems occur in archiving activities.

Actuating is an ERMS implementation activity and archival work to achieve the goals that have been set. For the goals to be achieved, it requires the commitment and compliance of the staff involved so that they can work according to work guidelines.

Evaluation is a series of activities or activities that aim to be able to measure the level the successful use of ERMS in achieving the goals that have been set.

Undeniably, the traditional way of record keeping has been radically pushed to switch to ERMS, considered a panacea for records management (Zinner Henriksen & Viborg Andersen, 2008). Advances in technology have brought dramatic changes to records management since the availability of various systems that can be used in records management (Shibambu & Marutha, 2021). Mukred et al. (2021) found that the safety factor was the predictor with the most significant contribution to the intention of educational institutions to use ERMS as an alternative to records management. As Ismael and Okumus (2017) state that the general considerations for educational institutions to switch to using ERMS include educational institutions that will increase the effectiveness of actions taken by reducing task completion time, reducing costs, increasing control, increasing the level of data integration, increasing service quality, increasing internal and external communication of school organizations, and increasing the number of documents appropriately processed. The presence of ERMS will benefit the academic community so that, as much as possible, continually update

data on accreditation supporting documents so that there are no difficulties in finding and submitting data during the field assessment process (Hasyim & Wijaya, 2019).

Our alternative is to design a system oriented towards information accountability and proper use, rather than information security and access restrictions, which we call the Electronic Record Management System (ERMS) based on eight national education standards in Indonesia to support school accountability. The research results recommend a change management strategy that can be adopted when implementing the ERMS following Indonesia's National Standards of Education.

5. CONCLUSION

The findings of this research describe the shortcomings of the implementation of record management in schools in providing the information needed to support accountability. Our findings are that there is no exceptional staff who become archivists at school, there are limited facilities and infrastructure, and commitment from school members to implement electronic-based archives still needs to be higher. We offer an Electronic Record Management System Model Base on Eight Indonesian Education Standards to Support School Accountability. We consider various educational standards that we adjust to the needs of the field so that the resulting model can be applied and contributed empirically. However, we acknowledge that further research is needed regarding implementing this model. This research is still limited to model development, not to the implementation or execution of the model. In the future, we will conduct further research on implementing the model we developed in this paper.

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