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MANAGING PUPILS' ELECTRONIC RECORDS IN PRIMARY SCHOOLS IN LUSAKA DISTRICT: BENEFITS, CHALLENGES, AND STRATEGIC RECOMMENDATIONS

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Abstract

This study explores the management of pupils' electronic records in primary schools within Lusaka District, Zambia. With growing reliance on digital systems, schools have begun adopting SQL databases, cloud platforms, and educational software such as Glad Tiding to handle student data. The research employed a qualitative descriptive case study design, with data collected from 38 participants using semi-structured interviews. Findings reveal improved efficiency, data accuracy, access, and stakeholder communication. However, challenges persist, including limited training, data security concerns, resistance to change, and inadequate infrastructure. Recommendations include capacity-building for educators, investment in secure and scalable technologies, and stakeholder sensitization. This paper calls for policy alignment to support digital transformation in Zambian school administration systems.

Keywords
Electronic Records Management, Primary Education, Data Security, Digital Transformation, School Administration, Lusaka District, Zambia, Educational Technology.

1. Introduction

In recent years, the digitalization of educational administration has gained momentum worldwide, offering schools enhanced efficiency, accuracy, and accessibility in managing student data. In Zambia, particularly within Lusaka District, primary schools have begun adopting electronic records management systems as part of broader efforts to modernize education management and improve service delivery. These systems include SQL-based databases, cloud storage platforms, and specialized educational software such as Glad Tiding, designed to handle a range of student information—from enrollment and attendance to academic performance and health records. The shift from paper-based to electronic record-keeping promises numerous benefits, including faster data retrieval,

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reduced errors, improved communication between schools and parents, and the facilitation of data-driven decision-making. However, this transformation also introduces challenges, particularly in contexts where infrastructural limitations, limited ICT literacy among educators, and concerns about data security prevail. Despite the recognized potential, little empirical research has been conducted to examine how primary schools in Lusaka District manage pupils' electronic records in practice, the benefits realized, and the obstacles encountered during adoption and implementation. Understanding these dynamics is essential to inform policy, support capacity-building, and ensure that digital transformation efforts are sustainable and aligned with national education goals. This study therefore explores the management of electronic student records in primary schools in Lusaka District, assessing the technological, human, and institutional factors influencing its success. It aims to provide actionable insights for education administrators, policymakers, and software developers to optimize digital record management systems and improve the overall quality of primary education administration.

2. Research Objectives and Questions

The purpose of this study is to explore the management of pupils' electronic records in primary schools within Lusaka District, focusing on the benefits, challenges, and strategic considerations necessary for effective implementation.

2.1 Objectives of the Study

- To examine the current practices in managing electronic student records in primary schools.
- To identify the benefits realized by schools through the adoption of electronic record management systems.
- To explore the challenges faced by educators and administrators in managing electronic student data.
- To assess the level of training and technological infrastructure supporting electronic record management.
- To propose strategic recommendations for enhancing the management of pupils' electronic records.

2.2 Research Questions

- What systems and technologies are currently used by primary schools in Lusaka District for managing electronic student records?
- What benefits have been observed following the implementation of electronic record-keeping?

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- What are the main challenges or barriers affecting effective electronic record management?
- How adequately are educators trained and equipped to handle digital student records?
- What strategies can be recommended to improve the management and security of electronic records in these schools?.

3. Theoretical and Conceptual Framework

The study is anchored in the Technology Acceptance Model (TAM) and the Information Systems Success Model (ISSM), which provide a framework for understanding how individuals and organizations adopt and utilize technology effectively.

3.1 Technology Acceptance Model (TAM)

Developed by Davis (1989), TAM posits that users' acceptance of new technologies is primarily influenced by their perceptions of usefulness and ease of use. In the context of managing electronic pupil records, educators' willingness to adopt digital systems depends on their belief that these tools improve their efficiency and are user-friendly. Training and support systems play a critical role in shaping these perceptions, influencing the degree of technology integration.

3.2 Information Systems Success Model (ISSM)

DeLone and McLean's ISSM (1992) emphasizes multiple dimensions critical to the success of information systems: system quality, information quality, service quality, use, and user satisfaction. Effective electronic records management requires reliable, secure, and accessible systems that provide accurate student data and responsive technical support. High system and service quality directly impact the effectiveness and sustainability of electronic record-keeping in schools.

3.3 Conceptual Framework

The conceptual framework integrates these theories to examine factors influencing electronic records management in schools. It considers: Technological factors: System usability, security, infrastructure availability. Human factors: Educator training, attitudes toward technology, resistance to change. Organizational factors: Institutional policies, leadership support, resource allocation. Outcomes: Improved data accuracy, efficiency, communication, and decision-making. This integrated framework guided the study's design, data collection, and analysis, ensuring a holistic view of electronic record management dynamics in Lusaka District primary schools.

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4. Methodology

This study employed a qualitative descriptive case study design to explore the management of pupils' electronic records in primary schools within Lusaka District. The qualitative approach was chosen to capture detailed insights into the experiences, perceptions, and challenges faced by school administrators and educators during the adoption and use of electronic record management systems.

4.1 Research Participants

The study involved 38 participants, including primary school head teachers, administrative staff, and classroom teachers responsible for managing pupil data. Participants were purposively selected from a sample of primary schools known to be using electronic record management tools such as SQL databases, cloud platforms, and software like Glad Tiding.

4.2 Data Collection Methods

Data were collected primarily through semi-structured interviews, allowing participants to express their views on the benefits, challenges, and strategic needs related to electronic records management. Interviews focused on practices, system usability, training, data security, and stakeholder communication. Additionally, relevant document reviews were conducted, including school policies, usage manuals, and system logs, to triangulate and enrich interview data.

4.3 Data Analysis

Interview transcripts were analyzed thematically using an inductive approach. Codes were developed around emerging themes such as efficiency gains, data accuracy, training adequacy, security concerns, resistance to change, and infrastructure challenges. Findings from document reviews were integrated to contextualize and validate qualitative data.

4.4 Ethical Considerations

Ethical approval was obtained prior to data collection. Participants provided informed consent, with assurances of confidentiality and anonymity. The study adhered to ethical research principles, respecting participants' rights and privacy..

5. Findings and Analysis

The findings from the study highlight both the significant benefits and persistent challenges encountered in managing pupils' electronic records in primary schools within Lusaka District. The thematic analysis of interviews and document reviews revealed several key areas of focus.

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5.1 Benefits of Electronic Records Management

Participants consistently reported that the transition from paper-based to electronic records improved efficiency and accuracy. Electronic systems allowed for quicker retrieval of pupil data, streamlined attendance tracking, and simplified reporting processes. One head teacher noted: "With the electronic system, we can generate attendance and performance reports instantly, which saves us hours of manual work." Improved accessibility was also emphasized, as authorized staff and even parents could access relevant student information through secure portals, facilitating better communication and engagement. Many respondents credited electronic records with enhancing data integrity, reducing errors commonly associated with manual entry.

5.2 Challenges in Implementation

Despite these advantages, several challenges limited the effectiveness of electronic record management:

Limited Training and Technical Skills: Many educators reported inadequate training on the use of digital systems, resulting in underutilization or errors in data entry. Teachers expressed a need for ongoing capacity-building initiatives.

Data Security Concerns: Participants raised concerns about the security and confidentiality of pupil data, particularly regarding unauthorized access or potential data breaches. Some schools lacked clear protocols for data protection.

Resistance to Change: Some staff members, particularly those accustomed to traditional record-keeping, exhibited reluctance or apprehension toward adopting new technologies, impacting system uptake.

Inadequate Infrastructure: Frequent power outages, poor internet connectivity, and insufficient hardware resources hampered consistent use of electronic systems. Some schools struggled with outdated or incompatible software.

5.3 Strategic Needs and Recommendations

Respondents highlighted the importance of policy alignment and institutional support to sustain digital transformation efforts. They recommended: Comprehensive and continuous training programs for all users of electronic record systems. Investment in secure, scalable, and user-friendly technologies tailored to school contexts. Development of clear data governance policies to safeguard pupil information. Engagement with all stakeholders to foster buy-in and reduce resistance to change.

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6. Challenges and Implications

The management of pupils' electronic records in primary schools in Lusaka District faces several challenges that have important implications for the sustainability and effectiveness of digital record-keeping systems.

6.1 Limited Capacity and Training

The lack of comprehensive training programs leaves many educators and administrative staff ill-equipped to fully utilize electronic record management systems. This skills gap results in underutilization of system features, data inaccuracies, and decreased confidence in technology use, thereby affecting the quality and reliability of pupil data.

6.2 Data Security and Privacy Concerns

With sensitive student information digitized, the risk of data breaches or unauthorized access is heightened, especially in the absence of robust security protocols. Concerns over privacy can undermine stakeholder trust, potentially leading to reluctance in fully adopting electronic systems or sharing information through digital platforms.

6.3 Resistance to Technological Change

Resistance from some educators accustomed to traditional record-keeping methods presents a barrier to technology adoption. This resistance can slow down the implementation process, limit knowledge sharing, and create inconsistencies in data management practices across schools.

6.4 Infrastructure Deficiencies

Inadequate infrastructure, including unreliable electricity and poor internet connectivity, disrupts the continuous use of digital record systems. Without stable power and network access, schools experience frequent system downtime, data loss, and reduced operational efficiency.

6.5 Policy and Institutional Gaps

The absence of clear policies on electronic records management and data governance limits the institutionalization of best practices. Without standardized procedures and accountability mechanisms, schools struggle to maintain consistent data quality and safeguard student information. These challenges collectively threaten the integrity and sustainability of digital record management in primary education. Addressing them requires coordinated efforts across multiple levels—including government agencies,

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school leadership, educators, and technology providers—to build capacity, enhance infrastructure, and establish regulatory frameworks. Failure to do so risks compromising the gains in efficiency and accuracy that electronic systems promise, potentially hindering educational planning, monitoring, and stakeholder communication.

7. Recommendations

To address the challenges and maximize the benefits of electronic records management in primary schools within Lusaka District, the following strategic recommendations are proposed:

7.1 Enhance Capacity Building and Training

Implement ongoing, comprehensive training programs for educators and administrative staff on the use of electronic record management systems. Training should cover not only technical skills but also data accuracy, security protocols, and troubleshooting. Tailored workshops and refresher courses will help sustain competency.

7.2 Strengthen Data Security Measures

Develop and enforce clear data protection policies aligned with national and international standards. Schools should adopt secure authentication methods, encryption protocols, and regular audits to safeguard pupil information. Awareness campaigns should sensitize staff and stakeholders about data privacy responsibilities.

7.3 Foster Change Management and Stakeholder Buy-In

Introduce change management initiatives to reduce resistance and encourage positive attitudes towards technology adoption. Engagement sessions, peer mentoring, and demonstration of system benefits can enhance acceptance. Leadership should model commitment to digital transformation.

7.4 Invest in Reliable Infrastructure

Prioritize investments in stable electricity supply, internet connectivity, and hardware resources tailored to school environments. Consider solar power solutions and offline-capable software to mitigate infrastructural challenges. Partnerships with ICT providers can facilitate resource mobilization.

7.5 Align Policies and Institutional Support

Develop comprehensive policy frameworks that provide guidelines for electronic records management, including data governance, system maintenance, and accountability.

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Institutionalize oversight mechanisms at district and national levels to ensure compliance and continuous improvement.

7.6 Promote Collaborative Platforms

Encourage schools to participate in collaborative networks or platforms where experiences, challenges, and best practices regarding electronic record management can be shared. Such networks can facilitate peer learning and resource optimization.

8. Conclusion

The management of pupils' electronic records in primary schools within Lusaka District represents a critical component of the digital transformation of educational administration in Zambia. This study has highlighted that while the adoption of electronic record-keeping systems has brought significant benefits in terms of efficiency, accuracy, and stakeholder communication, numerous challenges impede their optimal use. Limited training, concerns over data security, resistance to change, and infrastructural deficiencies are key barriers that must be addressed to sustain and scale these innovations. The findings underscore the need for a coordinated approach that combines capacity-building, policy development, investment in infrastructure, and community engagement. By implementing strategic recommendations focused on these areas, educational stakeholders can enhance data management practices, strengthen decision-making, and ultimately improve the quality of primary education administration. As schools continue to navigate the complexities of digitalization, ensuring that electronic record management systems are secure, user-friendly, and supported by skilled personnel will be essential. This will not only safeguard student information but also empower educators and administrators to utilize data effectively in support of learner success.

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