

The Use of Tablets in Enhancing Academic Records Management Practices: A Case of Selected Public Secondary Schools in Singida Municipality

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Abstract

This study examined the use of tablets to enhance academic records management in four public secondary schools in Singida Municipality. It assessed the extent of tablet use and the factors that hinder their effective use. Using a case study design, data were collected from 16 school records custodians through semi-structured interviews and non-participant observation, and were analysed thematically. Findings showed that tablets were commonly used to record students' marks, store assessment records, monitor attendance, prepare reports, and retrieve academic information. Despite these benefits, schools continued to rely on both digital and paper-based systems because specialised academic records management systems were unavailable. Respondents perceived tablets as easy to use and valuable for improving the efficiency, accuracy, and accessibility of academic records. However, effective utilisation was hindered by inadequate internet connectivity, limited technical support and maintenance, insufficient storage capacity, resistance to technological change, and technical malfunctions. The study concluded that tablets have positively contributed to academic records management, although their full potential is constrained by infrastructural and technical challenges. It recommends strengthening ICT infrastructure, conducting regular follow-up to ensure tablets are used for their intended purposes, establishing technical support mechanisms, and developing integrated digital records management systems.

Keywords: Tablet, Academic Records, Records Management Practices, Academic Records Custodian, Public Secondary Schools

1.0 Introduction

Teaching has long been regarded as a respected and vital profession because teachers serve as custodians of knowledge and play a central role in transmitting it to learners (Macha, Lwaitama, & Rugambwa, 2021). Throughout the teaching and learning process, schools generate various academic records, including admission records, attendance registers, lesson plans, assessment reports, examination results, and students' progress records. These records are essential for effective teaching, learning, and school administration (Mnzava, 2019).

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Academic records provide evidence of educational activities, support informed decision-making, and serve as institutional memory for schools (Jonas, 2025; Thegu, Oyieko, & Mbengo, 2021). Proper management of these records enables schools to monitor students' academic progress, track performance trends, and support administrative functions (Bing & Farhana, 2024). Consequently, the effectiveness of educational systems depends on efficient records management, while poor records management can negatively affect teaching and learning processes (Odoh & Nwoku, 2024).

To improve records management, many education systems have adopted digital technologies. The digitalisation of education has transformed records management practices in countries such as the United States, the United Kingdom, Finland, and Australia. Schools increasingly use digital platforms, including Student Information Systems, to manage student enrolment, attendance, grades, and academic progress. These systems are often accessible through mobile devices such as tablets, enabling real-time storage, updating, and retrieval of information (OECD, 2023).

Tablets have become important tools in educational administration because they can connect to cloud-based school management systems that store grades, assignments, attendance records, and students' performance data. This allows users to access, update, and retrieve academic information efficiently (Hynes & Youn, 2017). When integrated with school management systems, tablets facilitate seamless access to educational data and support effective records management.

The integration of Information and Communication Technology (ICT) into academic records management improves data accuracy, accessibility, security, and long-term preservation (Thegu, Oyieko, & Mbengo, 2021). ICT-based systems facilitate efficient storage and retrieval of records, automate administrative processes, improve transparency, and support evidence-based decision-making in schools (Yidana & Akuna, 2022). Despite these advantages, studies indicate that many teachers in public secondary schools have not fully embraced technology in teaching and record management (Pima, 2019; Manyengo, 2021; Sydorenko et al., 2020). As a result, manual systems continue to dominate records management practices, limiting opportunities to improve efficiency through technological innovations (Odoh & Nwoku, 2024).

In Tanzania, the government has implemented several initiatives to promote the integration of ICT into education. These include rural electrification programmes through the Rural Energy Agency (REA), expansion of the national fibre-optic network, establishment of ICT departments in public institutions, creation of the e-Government Authority (e-GA), and provision of ICT training for teachers through seminars and workshops (Ministry of Education, Science and Technology [MoEST], 2024). These efforts aim to create a supportive environment for technology adoption in educational institutions. Furthermore, the Government of Tanzania introduced the National Digital Education Strategy 2024–2030, which aims to establish a digitally enabled education system by integrating ICT at all levels of education. The strategy promotes the use of digital technologies, including tablets, computers, smartphones, smart classrooms, internet services, and Artificial Intelligence (AI), to enhance teaching, learning, and educational administration (MoEST, 2024).

A recent ICT initiative involved distributing 293,400 tablets that had been used during the 2022 National Population and Housing Census. These tablets were distributed to teachers, quality assurance officers, and college tutors to support educational activities. Of these, 89,805 tablets were distributed to secondary school teachers (Daily News, November 6, 2022; United Republic of Tanzania [URT], 2024). The initiative was expected to strengthen educational processes, including the management of academic records. However, despite this substantial investment, little is known about how these tablets are utilised by academic records custodians such as academic masters, discipline masters, and second masters in managing academic records in public secondary schools.

Previous studies have examined academic records management (Migabo, 2026; Mnzava, 2019), ICT integration in records management (Aganda & Eze, 2023), ICT usage in secondary schools (Nzilano, 2025), students' readiness toward cloud-based academic records systems (Jonas, 2025), the use of tablets in teaching and learning (Stephen & Mtae, 2025; Alihaji et al., 2024; Prosper & Nderego, 2024; Manyengo, 2021; Pima, 2019), and tablet use in school administration (Nchimbi & Nihuka, 2025; Shekaoneka & Arthur, 2025). Although these studies provide valuable insights, limited attention has been given to the specific role of tablets in academic records management. Consequently, there is insufficient understanding of the ease and extent of tablet use by records custodians, as well as the challenges they encounter in managing academic records.

This study sought to address this gap by pursuing two specific objectives. First, it explored the extent to which tablets are used and the ease of using them to manage academic records in selected public secondary schools. Second, it examined the challenges faced by custodians of academic records in using tablets for academic records management. Understanding these issues is important because ineffective management of academic records may compromise teaching and learning processes through poor record-keeping and make it difficult to retrieve information when needed.

2.0 Literature Review

2.1 Theoretical Framework

The study was guided by the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Viswanath Venkatesh et al. (2003), which explains technology acceptance and use through four key constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions. The theory is recognised for its strong predictive power and careful consideration of technological, organisational, social, and individual factors. It has been criticised for its complexity and limited emphasis on personal attitudes toward technology.

The theory relates to the study in that academic records custodians are more likely to use tablets when they perceive them as improving their work performance (performance expectancy), easy to learn and operate (effort expectancy), supported by colleagues and school management (social influence), and backed by adequate infrastructure, training, and technical support (facilitating conditions). Conversely, the absence of components such

as performance expectancy, effort expectancy, social influence, and facilitating conditions may hinder the effective use of tablets for managing academic records in public secondary schools. Henceforth, the theory provided a foundation for examining tablet usage, organisational and technical support, and barriers to its effective utilisation in managing academic records in selected public secondary schools.

2.2 Empirical Review

2.2.1 Tablets in Managing Academic Records

The advancement of technology has revolutionised many aspects of education, including the management of academic records. The storage and management of academic records in secondary schools have evolved through different stages, each characterised by distinct methods and technologies. In developed countries, the adoption of mobile technologies, particularly tablets, has expanded rapidly. Tablets are mobile and multifunctional devices that support the storage, organisation, and retrieval of information (Kim, Choi, & Lee, 2019). Nchimbi & Nihuka (2025) posit that tablets can serve as effective data management tools, enabling teachers to generate, store, organise, and access academic records, thereby improving the accuracy, accessibility, and timeliness of records management.

Evidence from developed countries indicates that tablets are widely used alongside digital school platforms to support both classroom instruction and administrative functions. Teachers use tablets to record assessment results, monitor student performance, and maintain academic records efficiently (Tay, 2016). Similarly, OECD (2019) reported that more than 90% of schools in countries such as Finland, the United States, Norway, Australia, Sweden, the United Kingdom, and Denmark have access to tablets and digital school portals. The widespread adoption of these technologies has strengthened digital records management practices in schools.

A study conducted in Belgium by Montrux et al. (2015) found that tablets were used in secondary schools to record attendance, plan lessons, and document students' activities. The information generated by these activities was included in students' academic records and stored digitally for future reference. Although the study did not specifically focus on academic records management, it demonstrated the potential of tablets in generating and maintaining students' records electronically.

In contrast, many African countries continue to experience challenges in adopting digital technologies for academic records management. In Nigeria, academic records were reported to be stored mainly in obsolete cupboards, open shelves, and drawers, with most teachers relying on manual methods while only a few utilised computerised systems (Odoh & Nwokuwu, 2024). Similarly, secondary schools in Cameroon continue to rely heavily on paper-based systems for managing academic records (Atuh, 2023).

A comparable situation exists in Uganda, where limited ICT adoption has led to the continued dominance of manual record-keeping processes (Muhammad, Barigayomwe, Zulaika, & Daphine, 2022). In Kenya, the use of ICT in academic records management remains limited, with many secondary schools relying on manual and semi-automated systems that limit accuracy, efficiency, and timely access to student records (Thegu, Oyieke, & Mbenge, 2021).

Studies conducted in Tanzania by Nkata & Dida (2019), Nkata (2020), and Migabo (2026) indicate that, despite ongoing efforts to promote educational digitalisation, manual record-keeping practices continue to dominate in many secondary schools, limiting efficiency and effectiveness. Likewise, delays in the retrieval, reporting, and sharing of students' academic records remain common challenges (Jonas, 2025; Mnzava, 2019; Nkata & Dida, 2019; Mchallo, 2018). These findings suggest a need to increase the adoption of technologies to improve academic records management practices in Tanzanian secondary schools.

2.3 Constraints Towards the Use of Tablets

Effective use of tablets for academic records management in secondary schools is constrained by multiple interrelated factors. Studies in South Africa and East Africa (Naaz, 2025; Zou et al., 2025; Kamugisha & Ssembatya, 2024) report that hardware limitations, unreliable internet connectivity, inadequate investment, and weak infrastructure hinder ICT integration despite a willingness to adopt technology. Similarly, Mwangi et al. (2022) note that unstable connectivity and poor device performance reduce efficiency and motivation among records custodians.

Consortium Academia (2023) emphasises that limited digital infrastructure, weak broadband connectivity, and insufficient institutional support continue to impede the integration of mobile devices into administrative functions. Nchimbi & Nihuka (2025) further identify technical problems, limited storage capacity, and unreliable internet connectivity as barriers to tablet use in records management. These issues are reinforced by Mwakalinga & Komba (2023), who report insufficient device capacity, which affects timely record updates.

Studies by Jonas (2025), Kibuuka et al. (2022), Mnzava (2019), and Mchallo (2018) link ineffective records management to weak ICT infrastructure, limited policies, and low system adoption. Yidana & Akuna (2022) add that inadequate technical expertise and weak institutional frameworks hinder effective technology integration. Ndlovu and Mtshali (2025) highlight inconsistent device availability, insufficient training, and connectivity gaps that affect effective use.

Prosper and Nderego (2024) report limited digital skills, challenges with software maintenance, and inadequate learning resources. Nzilano (2025) and Kiwonde (2024) identify technophobia, funding shortages, power supply issues, and lack of technical support as additional barriers. Collectively, these findings show that sustainable use of tablets in secondary school records management requires improved infrastructure, training, policy support, and continuous technical assistance.

Furthermore, these constraints collectively show that the effectiveness of tablet-based records management systems depends not only on device availability but also on the broader supporting ecosystem, adequate funding, continuous capacity building, institutional commitment to digital transformation in school administration, and interventions by education authorities. Strengthening digital infrastructure and providing continuous professional development will therefore be crucial to maximising the benefits of tablet technology in academic records management across secondary education in resource-constrained environments, particularly in rural and underserved secondary schools.

3.0 Methodology

The study used a case study design. It took place in four sampled public secondary schools located in Singida Municipality. Secondary schools were selected as a case study because they are among the priorities identified in the ICT policy of basic education (URT, 2007). A purposive sampling technique was used to select 16 respondents, including the headmaster/mistress, academic masters, second master/mistress, and discipline masters, who were interviewed using an in-depth, semi-structured interview guide, supplemented by data from non-participant observation. This is because the researcher wanted to probe deeper based on respondents' responses to ensure comparability and data richness, and to seek clarification of ambiguous responses. The selection of this sample was based on the fact that these are custodians of academic records in the secondary school context; hence, they are well positioned to provide more relevant information for this study. Data were analysed using thematic analysis.

4.0 Findings and Discussion

A total of 16 respondents, including headmasters/headmistresses, academic masters/mistresses, second masters/mistresses, and discipline masters/mistresses, were purposively selected to provide information relevant to the research questions.

4.1 Extent and Ease of Use of Tablets in Public Secondary Schools

4.1.1 Frequency of Use

The findings revealed variations in tablet use frequency among academic records custodians. While most respondents reported using tablets regularly in their daily duties, others used them occasionally, and a few did not use them due to device damage or limited interest. One respondent explained: "Almost all of my tasks are performed by this device" (Respondent 1, School A).

Another stated:

"I always use the tablet to perform my duties, including keeping academic records of my students" (Respondent 3, School D).

However, one respondent noted:

"I never used the tablet because it got damaged immediately after it was handled by me, and even other teachers had given their tablets to their children." (Respondent 4, School D).

These findings indicate that tablets have become important tools for academic records management, although their use remains inconsistent across schools. The findings are consistent with studies from developed countries that show that tablets support administrative functions, such as recording assessment results and monitoring student performance (Tay, 2016; OECD, 2019). However, the continued presence of occasional and non-users reflects challenges reported in several African countries, where manual and semi-automated records management systems remain common (Migabo, 2026; Odoh &

Nwokwu, 2024; Atuh, 2023; Muhammad et al., 2022; Thegu et al., 2021; Nkata & Dida, 2019). This is also supported by UTAUT, which states that variations in tablet usage can be explained by differences in performance expectancy and facilitating conditions, as users are more likely to adopt technology when they perceive it as beneficial (Venkatesh et al., 2003).

4.1.2 Perceived Ease of Use and Usefulness of Tablets in Managing Academic Records

The findings showed that most respondents perceived tablets as easy to learn and useful in managing academic records. Respondents reported that tablets were used to record students' marks, store assessment records, monitor attendance, prepare reports, and retrieve information. One respondent explained:

"Tablets have made things easier for me as an academic master, especially during exams when I request exams; I prefer a soft copy, as you can see. These are some examination files of previously conducted tests... The support from fellow teachers has been very important. We have special learning sessions. Whenever our fellow discovers a better feature on the tablet, we share. This has made it easier for many teachers to adopt the tablets" (Respondent 2, School B).

Respondents indicated that tablets improved efficiency and simplified records management tasks. These findings support Kim, Choi and Lee (2019), who describe tablets as multifunctional devices for storing and retrieving information. Nchimbi & Nihuka (2025) emphasise their usefulness in organising and accessing records. Similar findings have been reported in Belgium and Greece, where tablets support attendance recording, documentation, and monitoring of student performance (Montrux et al., 2015).

One respondent stated:

"The tablet was easy to learn and use. After a few days of practice, I became comfortable using it to record marks and access students' information. I even fill out my performance in PEPMIS using the same tablet, search for materials, and store important documents. School management encourages us to use tablets and provides guidance whenever challenges arise" (Respondent 2, School D).

Despite these advantages, tablets are mainly used for data entry rather than as a comprehensive records management solution, as schools lack specialised academic records management systems. Consequently, digital and paper-based systems continue to operate simultaneously. This finding aligns with studies in Tanzania that report continued reliance on manual records despite digitalisation efforts (Migabo, 2026; Jonas, 2025; Nkata, 2020; Mnzava, Nkata & Dida, 2019; Mchallo, 2018). In support of this, a respondent explained:

"We use tablets to enter and store some student information through basic applications, and some information still has to be compiled manually. There is no specialised system dedicated to managing academic records." (Respondent 1, School B).

Respondents perceived tablets as useful tools that simplified both teaching and records management activities. However, other respondents acknowledged initial difficulties but noted that they gradually adapted to the technology. As one participant explained:

“...There are teachers like me, those Born Before Computer (BBC), and young ones born after the computer era. Some struggle even with basic usage, like typing. Initially, things were tough; some, even when taught, were not ready to accept it because they were used to paper-based work. They want to write down every single sentence on paper, but as we continue educating each other...Some, especially BBCs, when given these devices, handed them over to their children because they have no interest in ICT equipment” (Respondent 2, School B).

On the other hand, researchers observed tablets in the offices of academic records custodians; some respondents were using them, while others were charging them. Similarly, other teachers were also observed recording students' scores on paper. This supports the conclusion that paper records still exist even with the presence of tablets.

The findings further revealed that age, ICT experience, and attitudes toward technology influence tablet adoption. Older teachers were reported to experience more difficulties than younger colleagues, although training and peer support improved confidence. This supports the UTAUT concept of effort expectancy, which highlights the role of perceived ease of use in technology adoption (Venkatesh et al., 2003). Additionally, training, peer assistance, and management support reflected the importance of social influence and facilitating conditions in promoting effective technology use.

4.2 Constraints towards the Use of Tablets for Academic Records Management

4.2.1 Inadequate Internet Connectivity

Inadequate internet connectivity emerged as a major challenge affecting tablet use in academic records management. Respondents reported that many schools lacked reliable internet access, forcing records custodians to depend on personal mobile data. The challenge was more severe in areas with unstable network coverage. Field observations also revealed limited internet infrastructure at the schools visited. One respondent stated:

“We don't have internet access/connectivity, so school records management custodians are using their own mobile data/bandwidth” (Respondent 1, School C).

Another added:

“Network is also a challenge in remote areas like ours, and you won't always have access to data” (Respondent 3, School A).

Additionally, observations indicated that neither internet cables nor routers were in place to support internet services in some schools. These findings support Naaz (2025), Zou et al. (2025), and Kamugisha & Ssembatya (2024), who identified unreliable internet and weak infrastructure as barriers to ICT integration in schools. Within UTAUT, inadequate connectivity represents weak facilitating conditions that limit effective tablet utilisation.

4.2.2 Lack of Technical Support and Maintenance Services

The findings revealed that inadequate technical support and maintenance services constrained effective tablet use. Respondents reported the absence of official guidelines regarding repair procedures, maintenance, and authorised service providers. As a result,

damaged devices were often repaired by local technicians, raising concerns about device security and the confidentiality of stored information. One respondent explained:

"We were not given maintenance procedures because the device was assigned to an individual. If it breaks, you take it to any technician of your choice. There is no official guideline on what to do or where to take it when it gets damaged" (Respondent 2, School B).

Another stated:

"The security of the device when it is in the hands of local technicians is a concern because it contains exams, personal documents, photos, and other work-related files" (Respondent 3, School A).

The findings align with those of Consortium Academia (2023), Nchimbi & Nihuka (2025), Prosper & Nderego (2024), and Yidana & Akuna (2022), who identified weak technical support structures as barriers to effective technology integration. According to UTAUT, insufficient technical support represents inadequate facilitating conditions, thereby reducing users' confidence.

4.2.3 Limited Storage Capacity of Tablets

Storage capacity was another challenge affecting tablet effectiveness. Respondents explained that tablets were used for both academic records and teaching materials, resulting in insufficient storage space. One respondent stated:

"These tablets have limited storage/memory capacity; hence, they cannot store many things, yet a teacher needs to download and save a lot of materials" (Respondent 2, School A).

This finding agrees with Nchimbi & Nihuka (2025) and Mwakalinga & Komba (2023), who reported that inadequate hardware capacity limits digital records management. From the UTAUT perspective, limited storage reduces performance expectancy because users may perceive tablets as unable to meet their work requirements.

4.2.4 Resistance to Technological Change

The findings also revealed resistance to technological change among some teachers and records custodians. Some respondents expressed greater confidence in traditional paper-based records, which they considered more reliable and secure than electronic records. Concerns about device failure, power interruptions, and possible data loss contributed to reluctance in fully adopting tablet-based systems. One respondent explained:

"I prefer using paper records because that is what I have been using for many years, and I trust them more. With tablets, I worry that devices may be damaged, stop working, or lose power unexpectedly, putting important school records at risk. Although we are being encouraged to use tablets, some of us are still not fully confident about storing all records electronically because we feel more secure when we can physically see and handle paper documents" (Respondent 3, School A).

These findings support Nzilano (2025), Ndlovu and Mtshali (2025), and Kiwonde (2024), who identified technophobia, inadequate training, and limited confidence as barriers to technology adoption. According to UTAUT, resistance is associated with low-performance expectancy and effort expectancy, where users perceive digital systems as risky or difficult compared to traditional methods.

4.2.5 Technical Malfunctions and Device Failure

Technical malfunctions were identified as significant barriers affecting tablet utilisation. Respondents reported challenges including slow internet performance, damaged screens, system failures, and complete device breakdowns. These problems reduced the effectiveness of tablets in academic records management. One respondent noted:

"It is different from other regular phones in terms of internet speed. You can use a regular phone and go faster than using a tablet" (Respondent 4, School B).

Another reported:

"Out of 35 teachers, only about 15 are using tablets because the rest of the tablets are damaged and teachers cannot do anything with them" (Respondent 3, School D).

These findings are consistent with Nchimbi & Nihuka (2025), Ndlovu & Mtshali (2025), and Prosper & Nderego (2024), who identified device failure, inadequate maintenance, and infrastructure challenges as barriers to the adoption of digital technology. The findings demonstrate that sustainable tablet-based academic records management requires regular maintenance, technical support, and replacement of damaged devices. In the UTAUT context, technical problems weaken facilitating conditions and reduce users' perceptions of tablet reliability and usefulness.

5.0 Conclusion

This study concludes that tablets have positively enhanced academic records management practices in selected public secondary schools in Singida Municipality. The findings revealed that academic records custodians frequently use tablets to record students' marks, store assessment records, monitor attendance, prepare reports, retrieve information, and access online educational resources. Tablets were generally perceived as easy to use and useful for improving efficiency, accuracy, and record accessibility, consistent with the UTAUT constructs of performance expectancy, effort expectancy, social influence, and facilitating conditions. However, the study found that schools lacked specialised digital systems for managing academic records, making tablets primarily tools for data entry and storage rather than comprehensive records management platforms. In addition, inadequate internet connectivity, limited technical support, insufficient storage capacity, resistance to technological change, and technical malfunctions constrained the effective utilisation of tablets. Therefore, while tablets have improved academic records management, their full potential remains limited by infrastructural, technical, and organisational challenges.

6.0 Recommendations

Based on the findings, the study recommends that MoEST, in collaboration with local government authorities and school management, should strengthen ICT infrastructure in public secondary schools by ensuring reliable internet connectivity and the provision of school-based internet services. Schools should establish formal technical support and maintenance mechanisms to facilitate the timely repair and servicing of tablets while safeguarding the security of academic records. The government should also provide continuous ICT training and capacity-building programmes to improve teachers' and records custodians' confidence and competence in using tablets for academic records management. Furthermore, future ICT devices distribution programmes should consider devices with larger storage capacities and better technical specifications to accommodate both instructional and administrative needs. Finally, the institution should develop and implement integrated academic records management systems accessible via tablets, thereby reducing reliance on paper-based records and maximising the benefits of digital records management in secondary schools.

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