

Role of Information and Communication Technologies in Improving School Administration in Secondary Schools: A Case of Ilala Municipality

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Abstract

This study explores the integration of Information and Communication Technology (ICT) in enhancing administrative processes in secondary schools within Ilala Municipality, Tanzania. It investigates the availability of ICT resources, the attitudes of school administrators towards ICT, and their competencies in utilizing these technologies. Employing a mixed-methods approach, the research collected data from 61 participants, including school heads, teachers, and education officers. The findings reveal positive attitudes among administrators regarding the potential of ICT to improve record-keeping, communication, and resource management. However, the study also highlights critical challenges, including inadequate infrastructure, limited access to ICT training, and unreliable internet connectivity, which hinder effective integration. Despite these barriers, schools that have adopted ICT report improved efficiency and transparency in administrative tasks. This study concludes that ICT has significant potential to transform educational administration in Tanzania, provided systemic and contextual barriers are addressed. Key recommendations include targeted investments in ICT infrastructure, capacity-building initiatives for administrators, and the establishment of supportive policies to ensure equitable access and sustainable use.

Keywords: *ICT, School Administration, Digital Literacy, Education Management, Tanzania, Ilala Municipality.*

I. INTRODUCTION

Information and Communication Technology (ICT) has become a transformative force in modern society, revolutionizing processes across industries, including education. In school administration, ICT is critical for streamlining tasks such as record-keeping, communication, data analysis, and decision-making. It offers tools that increase efficiency, reduce manual labor, and enhance transparency in operations, ultimately contributing to better educational outcomes. Globally, the adoption of ICT in school administration has been linked to improved resource allocation, stronger communication channels, and enhanced accountability among school leaders and stakeholders (Anderson & Dexter, 2005). As schools face increasing demands for efficiency and data-driven decision-making, ICT integration has shifted from being an optional innovation to a fundamental necessity.

In Tanzania, the education sector has made significant strides in integrating ICT into teaching and learning, as outlined in the National ICT Policy and the Education and Training Policy (2014). However, less emphasis has been placed on the role of ICT in school

administration, leaving a critical gap in how secondary schools manage their operations. In many Tanzanian schools, administrative tasks remain highly manual, leading to inefficiencies that hinder decision-making and operational effectiveness. These issues are particularly pronounced in regions such as Ilala Municipality, where disparities in resource allocation, training, and infrastructure further exacerbate the challenges of integrating ICT into administration (Mtebe & Raisamo, 2014).

The potential benefits of ICT in school administration are vast. Technologies such as School Management Systems (SMS), digital attendance registers, and financial management tools can transform administrative processes. These tools allow school heads to access real-time data, monitor performance indicators, and make informed decisions. Furthermore, ICT fosters better communication between schools, parents, and education authorities, creating more cohesive management systems. However, the successful integration of ICT requires more than just infrastructure; it demands supportive policies, skilled personnel, and an

organizational culture that embraces innovation (Fiszbein et al., 2009).

Despite these potential benefits, the adoption of ICT in school administration faces significant barriers. Resource constraints, such as inadequate funding for hardware and software, remain a persistent challenge. Additionally, many administrators lack the training necessary to effectively use ICT tools, while unreliable internet connectivity and electricity shortages further complicate the integration process. Cultural attitudes, including resistance to change and a preference for traditional methods, also hinder progress. These challenges necessitate a critical examination of the current state of ICT use in school administration, particularly in resource-constrained settings like Ilala Municipality.

This study seeks to fill this gap by exploring the role of ICT in improving school administration in secondary schools within Ilala Municipality. Specifically, it examines the availability of ICT resources, the attitudes of administrators towards ICT, and their competencies in using these technologies. By addressing these issues, the study aims to provide actionable recommendations for policymakers, educators, and stakeholders to enhance ICT integration in school administration and overcome the existing barriers.

II. LITERATURE REVIEW

This study is guided by Open System Theory and Behavioral Management Theory, which provide complementary perspectives on ICT integration in school administration. Open System Theory views organizations as entities that interact dynamically with their environment, relying on external resources to sustain and grow. Schools, as open systems, depend on ICT infrastructure, funding, and training to enhance administrative processes. Without access to these external resources, administrative efficiency and adaptability are significantly compromised (Dishaw & Strong, 2015). The theory highlights the need for schools to maintain robust linkages with external stakeholders, such as governments, private sector partners, and technology providers, to ensure sustainable ICT adoption.

Behavioral Management Theory emphasizes the importance of human factors in organizational success. Developed by theorists such as Elton Mayo, this theory argues that attitudes, motivation, and group dynamics play a critical role in achieving organizational objectives. In the context of ICT integration, the willingness of administrators to adopt and use technology effectively is influenced by their attitudes, training, and perceptions of its value. Behavioral Management Theory underscores the importance of addressing these human factors through capacity building and change management initiatives.

Empirical studies globally and in Sub-Saharan Africa provide evidence of ICT's transformative potential in education management. In developed contexts, School

Management Systems (SMS) have streamlined tasks such as student enrollment, attendance tracking, and financial management, reducing administrative burdens and enhancing operational transparency (Anderson & Dexter, 2005). These technologies enable school administrators to make data-driven decisions and allocate resources more effectively.

In low-income countries, including Tanzania, the benefits of ICT are equally evident but less accessible due to systemic challenges. Studies by Mtebe and Raisamo (2014) highlight that while Tanzanian schools recognize the potential of ICT, barriers such as limited infrastructure, lack of training, and cultural resistance hinder widespread adoption. In neighboring Kenya, Wambua (2018) documented significant improvements in administrative efficiency following the introduction of ICT tools, but these gains were contingent on sustained investments in capacity building and infrastructure.

In Ilala Municipality, limited research exists on ICT use in school administration, creating a gap in understanding the unique challenges and opportunities within this context. This study seeks to contribute to the growing body of literature by examining how ICT can be effectively leveraged to improve school administration in resource-constrained settings.

III. METHODOLOGY

This research employed a mixed-methods approach, integrating quantitative and qualitative data to provide a comprehensive understanding of ICT integration in school administration. A case study design was chosen to focus specifically on secondary schools in Ilala Municipality. The study involved 61 participants, including school heads, teachers, and education officers, selected through purposive sampling to ensure relevance and representation.

Quantitative data were collected using structured questionnaires designed to capture information on ICT resource availability, usage patterns, and administrative outcomes. Qualitative data were gathered through semi-structured interviews with school administrators and education officers, focus group discussions with teachers, and observations of school facilities. This multi-method approach ensured a holistic view of ICT use in school administration.

To ensure validity, the research instruments were pre-tested in a pilot study conducted in a non-participating school. Feedback from the pilot was used to refine the questions and ensure clarity. Reliability was maintained through standardized data collection procedures, and triangulation was used to cross-verify findings from multiple sources. Ethical considerations included securing informed consent, maintaining participant confidentiality, and obtaining approval from local education authorities.

IV. FINDINGS AND DISCUSSION

➤ *Availability of ICT Resources*

The findings revealed substantial disparities in the availability of ICT resources among secondary schools in Ilala Municipality. Only two out of the four schools surveyed reported having access to functional computer laboratories, and just 25% of the respondents indicated that their schools had reliable internet connectivity. Of the 61 respondents, 41 (67.2%) noted the presence of at least one computer in their school, but 32 (52.5%) stated that these computers were often outdated or in poor condition. Additionally, only 20 respondents (32.8%) reported access to printers and scanners necessary for administrative tasks.

One school head emphasized during an interview, “Our computers are old, and most of them don’t work properly. This makes it difficult to use ICT for administrative tasks.” This statement underscores the systemic neglect of ICT infrastructure in schools, particularly those in resource-constrained areas. It aligns with findings by Mtebe and Raisamo (2014), who noted that outdated equipment and lack of regular maintenance are persistent barriers to ICT adoption in Tanzanian schools.

The inadequate availability of ICT resources directly relates to Open System Theory, which highlights that organizations rely on external resources for optimal performance. Schools with insufficient access to ICT tools are unable to effectively interact with their external environment or adapt to technological advancements. Without modern infrastructure, schools remain disconnected from the digital innovations that could enhance administrative efficiency. This disparity in resource availability not only limits the immediate benefits of ICT but also exacerbates inequities in education management across schools in the same region.

• *Administrators’ Attitudes towards ICT*

The study found that school administrators held overwhelmingly positive attitudes towards ICT, recognizing its potential to improve administrative efficiency. Among respondents, 48 (78.7%) agreed or strongly agreed that ICT simplifies administrative tasks such as record-keeping and data analysis, while 45 (73.8%) acknowledged that it enhances communication with stakeholders. However, systemic barriers often moderated their enthusiasm. For instance, 35 respondents (57.4%) noted that their ability to adopt ICT was hindered by challenges such as unreliable internet access, lack of training, and inadequate funding.

During one interview, a school head shared, “I see the value of ICT in making our work faster and more efficient, but without reliable internet or proper training, we can only do so much.” This statement reflects the intersection of positive attitudes and practical constraints. The willingness to adopt ICT, as evidenced by the majority of respondents, suggests that motivation is not a

barrier. However, systemic gaps, such as infrastructure deficits and limited capacity-building opportunities, diminish the potential impact of this enthusiasm.

This finding aligns with Behavioral Management Theory, which emphasizes that positive attitudes and motivation are crucial for successful organizational change. Even when administrators recognize the benefits of ICT, their ability to act on this recognition depends on the availability of enabling resources and support systems. Wambua (2018) similarly noted that in Kenyan schools, administrators with positive attitudes towards ICT were more likely to adopt technology, but resource limitations often restricted their implementation efforts.

• *ICT Competencies among Administrators*

The study revealed significant variations in ICT competencies among administrators. While 37 respondents (60.7%) expressed confidence in using basic software like Microsoft Word and Excel, only 19 respondents (31.1%) indicated proficiency in more advanced applications, such as school management systems (SMS) and database management tools. Furthermore, 28 respondents (45.9%) admitted struggling with fundamental tasks such as email communication and spreadsheet creation, which hindered their ability to leverage ICT for administrative purposes.

One teacher observed, “We are expected to use technology, but we are rarely trained on how to do so effectively. Most of us learn through trial and error.” This highlights a critical gap in professional development, where administrators are expected to integrate ICT tools without adequate training or support. The reliance on self-teaching reflects the systemic failure to prioritize capacity-building initiatives, a challenge also documented by Fiszbein et al. (2009) in low-income education systems.

From a theoretical perspective, Behavioral Management Theory underscores the importance of equipping individuals with the skills necessary to achieve organizational goals. Administrators with higher levels of ICT proficiency reported greater success in implementing technology-based solutions, reinforcing the theory’s emphasis on the interplay between motivation, skills, and performance. Without targeted training, however, the full potential of ICT adoption remains unrealized, leaving schools reliant on inefficient manual processes.

• *Systemic Challenges and Implications*

Systemic challenges emerged as a major theme, with 42 respondents (68.9%) identifying inadequate funding as the most significant barrier to ICT integration. Additionally, 38 respondents (62.3%) cited unreliable electricity, while 33 respondents (54.1%) highlighted a lack of clear guidelines from education authorities on ICT use in school administration. The lack of partnerships between schools and external stakeholders further compounded these issues, with only 15

respondents (24.6%) reporting any form of collaboration to support ICT initiatives.

One school head lamented, “We hear about ICT policies from the government, but there is no guidance or funding to implement them. It feels like we are expected to do everything on our own.” This sentiment highlights a disconnect between national ICT policies and their implementation at the school level. Without clear frameworks, schools are left to navigate ICT adoption independently, often without the necessary resources or expertise.

The systemic barriers identified in this study reflect the principles of Open System Theory, which asserts that organizations must adapt to and rely on their external environment for resources and support. Schools without strong linkages to funding agencies, policy frameworks, or technical expertise struggle to implement ICT solutions effectively. This finding is consistent with the World Bank (2018), which emphasized that inadequate policy support and weak stakeholder collaboration undermine ICT’s transformative potential in education management.

V. THEORETICAL AND EMPIRICAL IMPLICATIONS

➤ *Theoretical Implications*

The findings of this study contribute to the theoretical understanding of ICT integration in school administration by validating the relevance of both Open System Theory and Behavioral Management Theory. Open System Theory is supported by the observation that schools depend on external resources, such as ICT infrastructure, training, and funding, to achieve administrative efficiency. Schools with better access to these resources demonstrated greater success in integrating ICT, while those with limited resources struggled. This highlights the critical role of environmental inputs in shaping organizational outcomes.

Behavioral Management Theory is also reinforced by the findings, particularly in relation to administrators’ attitudes and competencies. Positive attitudes towards ICT were a significant enabler of its adoption, even in resource-constrained settings. However, the lack of training and skill development limited the extent to which administrators could utilize ICT tools effectively. This aligns with the theory’s emphasis on the importance of human factors, such as motivation and skill acquisition, in achieving organizational goals. Together, these theories underscore the need for a balanced approach that addresses both systemic and human factors in ICT integration.

➤ *Empirical Implications*

The findings provide practical insights for policymakers, educators, and stakeholders seeking to enhance ICT integration in school administration. First, the study highlights the need for targeted investments in ICT infrastructure and resources to address disparities in

access. Equitable distribution of digital tools, internet connectivity, and reliable electricity is essential to create a level playing field for all schools. Without addressing these systemic barriers, the transformative potential of ICT in education management will remain unrealized.

Second, the study underscores the importance of capacity building in ensuring successful ICT adoption. Administrators require ongoing professional development to build digital literacy and technical competencies. Training programs should be tailored to address the specific needs of school leaders and designed to keep pace with technological advancements. Additionally, fostering a culture of continuous learning can enhance administrators’ confidence and effectiveness in using ICT tools.

Third, the study highlights the need for stronger policy enforcement and support at the school level. National ICT policies must be accompanied by practical implementation guidelines and sufficient funding to ensure their success. Schools require clear frameworks for aligning their administrative practices with policy objectives, as well as regular monitoring to track progress and address challenges. Finally, the findings emphasize the importance of collaboration between schools and external stakeholders. Partnerships with private organizations, government agencies, and non-profits can mobilize additional resources, technical expertise, and innovative solutions to support ICT integration. These partnerships are particularly critical in resource-constrained settings where schools may lack the capacity to implement ICT initiatives independently.

VI. CONCLUSION AND RECOMMENDATIONS

The findings of this study demonstrate that Information and Communication Technology (ICT) has the potential to significantly improve school administration in secondary schools within Ilala Municipality. ICT tools provide an opportunity to streamline administrative processes, enhance communication, and improve record-keeping, ultimately fostering efficiency and transparency. However, the integration of ICT in school administration remains uneven, hindered by systemic challenges such as inadequate infrastructure, unreliable electricity, limited training for administrators, and insufficient internet connectivity. While many school administrators exhibited positive attitudes towards ICT, their competencies in utilizing these tools varied widely, with some lacking basic digital literacy skills. These challenges underscore the need for a more comprehensive approach to ICT integration that addresses both systemic and human factors.

The study also revealed that the availability of ICT resources was inconsistent across schools, with some institutions benefiting from basic facilities while others lacked essential tools entirely. This inequity limits the transformative potential of ICT in administrative processes, particularly in resource-constrained settings.

Furthermore, systemic issues such as inconsistent policy implementation, lack of financial support, and weak collaboration between schools and stakeholders exacerbate these challenges. Despite these barriers, the study highlights promising opportunities for ICT integration, particularly given the positive attitudes of administrators and the growing recognition of ICT's role in modern education management.

To address these challenges and fully leverage the potential of ICT in school administration, it is essential to adopt a holistic approach that combines resource investments, capacity building, and supportive policies. Policymakers must prioritize the equitable distribution of ICT resources, ensuring that all schools, regardless of their location or socio-economic status, have access to the necessary tools and infrastructure. This includes investments in modern computers, reliable internet connectivity, and stable electricity to create a conducive environment for ICT usage. Additionally, targeted training programs should be implemented to enhance the digital literacy and technical competencies of school administrators. These programs must be ongoing and tailored to address the unique needs of schools, equipping administrators with the skills needed to integrate ICT effectively into their daily tasks.

Moreover, there is a critical need for stronger policy enforcement and support. Government policies promoting ICT integration must be accompanied by adequate funding and technical guidance to ensure their successful implementation at the school level. Schools also need clear frameworks on how to align their administrative practices with national ICT goals. Collaboration between schools, private organizations, and government agencies should be fostered to mobilize resources and expertise. Partnerships with the private sector, in particular, can provide technical support, additional funding, and innovative solutions to address ICT-related challenges in education.

Finally, regular monitoring and evaluation should be institutionalized to assess the impact of ICT on school administration. Continuous feedback from administrators, teachers, and other stakeholders can help identify gaps and areas for improvement, ensuring that interventions remain relevant and effective. By addressing these recommendations, policymakers and stakeholders can create an enabling environment for ICT integration, transforming school administration and enhancing overall educational outcomes in Ilala Municipality. This comprehensive approach will not only address current challenges but also position schools to meet the demands of a rapidly evolving digital age.

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