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**THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN  
ENHANCING ADMINISTRATIVE EFFICIENCY IN SECONDARY SCHOOLS**

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**ABSTRACT**

*This study explores the role of Information and Communication Technology (ICT) in enhancing administrative efficiency in secondary schools. In an era of increasing educational demands and resource constraints, school administrators face growing pressure to streamline operations and improve management outcomes. The research investigates the types of ICT tools used in school administration, the impact of their application on administrative effectiveness, and the challenges hindering their adoption. Using an exploratory research design and a qualitative approach based on relevant literature review, the study identifies tools such as school management systems, financial software, digital communication platforms, and biometric systems as central to improving data management, communication, and decision-making processes. However, issues such as poor infrastructure, limited digital literacy, inadequate funding, and weak policy enforcement were identified as major barriers to ICT integration. The study shows that while ICT holds substantial potential for transforming school administration, its successful implementation requires targeted investment, staff training, and robust policy support. The study recommends a strategic approach to ICT adoption that includes infrastructural upgrades, continuous professional development, and stakeholder sensitization to maximize administrative efficiency in secondary schools.*

*Keywords: Information Communication Technology (ICT), administrative efficiency, secondary schools and administrators.*

**Introduction**

In today's digital age, Information and Communication Technology (ICT) has emerged as a vital tool in the transformation of educational systems across the globe. Within secondary schools, administrative duties such as record keeping, staff coordination, financial management, communication, and student data tracking have become increasingly

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complex, necessitating the adoption of ICT tools to improve operational effectiveness. ICT not only simplifies these administrative processes but also enhances accuracy, accountability, and decision-making (Adebayo & Olayemi, 2021). By leveraging ICT, secondary school administrators can minimize paperwork, access real-time information, and improve communication channels among stakeholders.

The demand for greater efficiency in school administration has prompted the integration of digital technologies such as Student Information Systems (SIS), Learning Management Systems (LMS), electronic attendance tracking, and cloud-based file management. These tools allow administrators to plan and implement school policies more effectively, reduce human error, and save time and resources (Adeoye & Afolabi, 2021). For example, digital attendance systems enable real-time monitoring of student and staff presence, while financial software facilitates transparent and organized budgeting processes. As ICT continues to evolve, its application in education administration has become essential rather than optional. Furthermore, the integration of ICT supports strategic planning by providing data-driven insights that inform decision-making. It enhances transparency, encourages collaboration among school personnel, and fosters accountability in task execution. According to Olumorin et al. (2020), schools that adopt ICT in administration often experience improved coordination, faster dissemination of information, and better record management practices. Thus, ICT plays a pivotal role in enhancing the efficiency and effectiveness of secondary school administration, especially in the face of increasing educational demands and limited resources.

In Nigeria, despite infrastructural challenges, there is a growing recognition of ICT's potential in enhancing educational administration. The National Policy on ICT in Education underscores the importance of using technology to improve school management practices and promote accountability (Federal Ministry of Education, 2019). However, disparities in access, training, and implementation still pose significant barriers to realizing the full benefits of ICT in many secondary schools across the country. Thus, this study explores the role of ICT in enhancing administrative efficiency in secondary schools. Understanding this is crucial for policy formulation, capacity building, and the development of sustainable ICT integration strategies in the Nigerian educational context.

### **Statement of the Problem**

In recent years, the integration of Information and Communication Technology (ICT) in education has been globally acknowledged as a means of improving both instructional delivery and administrative operations. In secondary schools, administrative efficiency is essential for effective planning, coordination, and decision-making. However, despite the acknowledged potential of ICT to enhance administrative processes such as record-keeping, communication, financial management, and human resource coordination, many secondary schools—particularly in developing countries like Nigeria—still rely heavily on manual and outdated systems. These traditional methods are often inefficient, time-consuming, prone to human error, and lack the capacity to support data-driven decision-making. While policies and initiatives, such as Nigeria's National Policy on ICT in Education have emphasized the importance of digital transformation in school management, the practical adoption and effective use of ICT tools in secondary school administration remain limited. Several schools face challenges including inadequate infrastructure, insufficient training for administrative staff, lack of funding, and limited access to relevant technologies. These limitations hinder the optimal use of ICT, thereby affecting the overall efficiency and responsiveness of school administration.

The problem, therefore, lies in the gap between the potential of ICT to enhance administrative functions and the actual implementation and use of such technologies in secondary schools. Addressing this gap is essential for informing policy direction, enhancing capacity building, and improving educational outcomes through more effective school management.

### **Objectives of the Study**

The main objective of this study is to examine the role of Information and Communication Technology (ICT) in enhancing administrative efficiency in secondary schools. However, its specific objectives include;

- (i) To identify the types of ICT tools used by school administrators for administrative purposes in secondary schools.
- (ii) To assess the impact of ICT usage on the efficiency of administrative tasks in secondary schools.
- (iii) To investigate the challenges hindering the effective implementation of ICT in secondary school administration.

### **Research Question**

- (i) What are the types of ICT tools used by school administrators for administrative purposes in secondary schools?
- (ii) What are the impact of ICT usage on the efficiency and effectiveness of administrative tasks in secondary schools?
- (iii) What are the challenges hindering the effective implementation of ICT in secondary school administration?

### **Literature Review**

#### **Information and Communication Technology (ICT)**

Information and Communication Technology (ICT) is a broad term that encompasses the use of digital tools, systems, and resources to collect, store, manage, process, and transmit information. Information and Communication Technology (ICT) refer to the integration of computing, telecommunications, and broadcasting technologies that facilitate the processing, storage, retrieval, and exchange of information. ICT encompasses a wide array of digital tools and resources, including computers, internet services, mobile devices, networks, databases, and software applications, which enable individuals and organizations to communicate, manage data, and perform tasks more efficiently. (Ajayi, et al., 2022).

In education, ICT plays a vital role in both instructional delivery and administrative management. It enables schools to enhance efficiency in data handling, streamline communication between stakeholders, and improve decision-making processes. ICT tools such as School Management Information Systems (SMIS), cloud-based storage, and digital communication platforms allow school administrators to effectively manage student records, timetables, financial data, and staff information (Ajayi, et al., 2022). ICT is also characterized by its ability to bridge time and space, making communication and data access possible regardless of geographic location. This feature is particularly valuable in school administration, where timely and accurate information is critical to effective management. As such, the adoption of ICT in school settings is not merely a matter of technological advancement but a necessity for achieving administrative excellence in the 21st century. (Sule & Udoh, 2021). ICT is an essential component of modern educational systems. It supports the efficient management of information and communication processes, thereby

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contributing to the overall performance, accountability, and adaptability of secondary schools in a rapidly evolving digital world.

**Types of ICT Tools Commonly Used by School Administrators for Administrative Purposes**

School administrators today increasingly rely on a range of Information and Communication Technology (ICT) tools to improve the efficiency, transparency, and effectiveness of administrative operations. These tools help streamline processes such as record-keeping, communication, planning, financial management, and monitoring, contributing to better overall school governance. Below are some of the most commonly used ICT tools in school administration:

**School Management Systems:** These are comprehensive software platforms designed to handle multiple school operations including managing of student data, student enrollment, attendance tracking, grading, timetabling, and financial records. They provide centralized access to data, reduce paperwork, and support data-driven decision-making. For example, tools like PowerSchool, EduPage, and OpenEMIS are widely used globally for school administration (UNESCO, 2020). These systems enhance data accuracy and allow for real-time access and reporting.

**Communication and Collaboration Tools:** ICT tools such as email platforms, WhatsApp, Zoom, and Microsoft Teams support internal and external communication among school stakeholders. These tools enable virtual meetings, instant messaging, and collaborative planning. As highlighted by Okeke and Ezeani (2019), the use of digital communication tools has improved administrative coordination and stakeholder engagement in educational settings.

**Financial and Accounting Software:** Tools like QuickBooks, Sage, and school-specific financial platforms assist administrators in budgeting, tracking expenditures, and generating financial reports. These tools enhance financial transparency and accountability. Olayemi and Adegbesan (2020) observed that automated financial systems reduce errors and facilitate compliance with regulatory requirements.

**Document and Record Management Systems:** Electronic document management tools such as Google Drive, Dropbox, and Microsoft OneDrive enable secure storage and easy retrieval of administrative records. These systems support paperless operations, promote sustainability, and protect sensitive data (Adebayo & Olayemi, 2021).

**Biometric and Security Systems:** For monitoring attendance and ensuring school security, biometric systems and CCTV are increasingly deployed. These tools offer reliable means of access control and data logging. Yusuf & Onasanya (2019) found that biometric systems significantly improved staff and student attendance monitoring in Nigerian secondary schools.

**The Impact of ICT Usage on the Efficiency of Administrative Tasks in Secondary Schools**

The integration of Information and Communication Technology (ICT) into the administrative functions of secondary schools has brought significant improvements in terms of efficiency and effectiveness. ICT tools streamline school management operations by automating repetitive tasks, improving data accuracy, enhancing communication, and facilitating timely decision-making. With the increasing complexity of school administration, the adoption of digital technologies has become essential for promoting productivity and operational excellence.

One of the most notable impacts of ICT is in the area of data management. School administrators can now store, retrieve, and process student records, staff information, attendance data, and examination results more accurately and swiftly than with traditional paper-based systems. According to Ali, et al., (2021), schools using digital record-keeping systems experience faster processing times, reduced errors, and improved accessibility of information. These systems allow real-time updates and centralized databases, enabling efficient data-driven planning and reporting.

Communication efficiency is another area where ICT has had a profound effect. Through emails, school portals, mobile apps, and SMS platforms, administrators are able to communicate instantly with teachers, parents, and students. This enhances transparency and ensures the timely dissemination of vital information. As noted by Okoye & Obiefuna (2020), digital communication platforms reduce administrative delays and improve stakeholder engagement in the management of school affairs.

ICT has also improved financial and resource management in schools. Digital accounting tools and school management software help administrators track income, expenses, payroll, and budget allocations with greater precision. Omodan, et al., (2020) emphasize that these tools promote accountability and reduce the likelihood of financial mismanagement by ensuring that every transaction is properly documented and accessible. Additionally, time and workload management have been positively influenced by ICT. Scheduling software and automated systems reduce the time spent on manually generating class timetables, monitoring attendance, and preparing reports. This efficiency allows administrators to focus on strategic planning and staff supervision, leading to better overall school performance (Ajayi, et al., 2022). However, the full benefits of ICT depend on factors such as staff competence, reliable infrastructure, and continuous technical support. Where these are in place, ICT significantly enhances administrative effectiveness, promotes transparency, and supports informed decision-making processes.

### **Challenges Hindering the Effective Implementation of ICT in Secondary School Administration**

Despite the growing recognition of the benefits of Information and Communication Technology (ICT) in school administration, several challenges continue to obstruct its full and effective implementation in secondary schools, particularly in developing countries. These obstacles range from infrastructural deficits to human capacity issues, which collectively affect the integration of ICT tools into school management systems.

**Lack of Adequate Infrastructure:** One of the most significant challenges is the lack of adequate infrastructure, including unreliable electricity supply, insufficient internet connectivity, and limited access to computers or modern ICT devices. Many public secondary schools operate in environments where basic digital facilities are either outdated or completely absent. According to Ajayi, et al., (2022), the absence of stable electricity and internet services in schools negatively affects the regular use of ICT for administrative tasks.

**Limited ICT Competence Among School Administrators and Staff:** Another major issue is the limited ICT competence among school administrators and staff. Without adequate training, many personnel are unable to effectively operate digital systems or maximize their functionalities. This skills gap results in underutilization of available technologies and continued dependence on manual processes. As observed by Okoye & Obiefuna (2020), lack of professional development in ICT use among school leaders remains a major barrier to achieving administrative efficiency.

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**Funding Constraints:** This also play a critical role in limiting ICT adoption. Budgetary allocations for education in many developing regions are often insufficient to support the procurement of ICT tools, maintenance of equipment, and capacity-building programs. Omodan, et al., (2020) argue that limited financial support from government and stakeholders hinders the sustainability of digital innovations in school management.

**Resistance to Change and Lack of Policy Enforcement:** This contributes to the slow pace of ICT integration. Some school administrators may be reluctant to adopt new technologies due to fear of the unknown, preference for traditional systems, or concerns about job displacement. Moreover, even where ICT policies exist, weak implementation frameworks and lack of monitoring mechanisms reduce their effectiveness (Ali, et al., 2021).

**Cybersecurity and Data Privacy Concerns:** This also present challenges. With increasing reliance on digital systems, schools are exposed to potential risks such as unauthorized access, data breaches, and loss of sensitive information. Inadequate security measures and poor digital literacy further compound these vulnerabilities (Sule & Udoh, 2021).

Overcoming these challenges requires a comprehensive approach involving government commitment, infrastructural development, staff training, financial investment, and strong policy implementation to foster an enabling environment for ICT-driven school administration.

### **Administrative Efficiency**

Administrative efficiency refers to the ability of an organization—particularly within the educational sector—to achieve its goals by utilizing available resources such as time, personnel, finances, and technology in a well-coordinated and cost-effective manner. In the context of secondary schools, administrative efficiency involves the seamless execution of managerial functions, including planning, organizing, staffing, communication, record-keeping, and resource management, all directed toward enhancing the overall functioning and productivity of the institution. Efficient administration is typically characterized by clarity in procedures, minimal resource wastage, timely decision-making, accurate documentation, and effective stakeholder communication. According to Omodan, et al., (2020), administrative efficiency in schools plays a pivotal role in improving academic environments by enabling school leaders to respond quickly to operational demands, manage information effectively, and provide support services that enhance teaching and learning.

With the growing demands on educational institutions, administrative efficiency has increasingly become linked to the use of innovative tools and management practices. For instance, the adoption of digital systems has allowed school administrators to automate routine tasks, improve communication flows, and ensure accountability in financial management. Ajayi, et al., (2022) note that technology-driven administrative practices not only save time and reduce errors but also provide school leaders with real-time data for strategic planning and resource allocation. Furthermore, administrative efficiency also contributes to school sustainability. When processes are streamlined and resources are properly managed, schools are better positioned to maintain quality standards and adapt to changes in educational policies and societal expectations. As stated by Sule & Udoh (2021), efficient administrative practices are essential for building resilient school systems capable of delivering consistent and measurable outcomes. To Nnamdi Busa, (2023) administrative

efficiency is not solely about speed or cost reduction, but also about achieving desired results through responsible and intelligent management of school resources. This makes it a central component in educational leadership and a critical factor in the success of any school system.

### **Theoretical Review**

#### **Technology Acceptance Model (TAM)**

The **Technology Acceptance Model (TAM)** was developed by Fred Davis in 1989 to explain how users come to accept and use a particular technology. TAM is one of the most widely applied theories in the field of information systems and technology adoption. At its core, TAM proposes that two primary factors determine whether an individual will adopt and use a technology. These two perceptions influence an individual's attitude toward using the technology, which in turn affects their intention to use it and ultimately leads to actual usage (Davis, 1989).

1. **Perceived Usefulness (PU):** The degree to which a person believes that using a particular system or tool will enhance their job or task performance.
2. **Perceived Ease of Use (PEOU):** The degree to which a person believes that using the system will be free of effort.

This model helps explain whether and how school administrators decide to implement ICT tools. If they believe that ICT will make their work more efficient and is easy to learn, they are more likely to adopt it. Continuous training and user-friendly systems can therefore increase ICT adoption and boost administrative efficiency (Okoye & Obiefuna, 2020).

### **Empirical Review**

Teryima, & Sunday (2015) examined the effectiveness of the role of Information Communication Technology (ICT) in enhancing productivity in the local government administration, in Benue State, Nigeria. The researcher adopted a quasi-experimental research design technique. The population for this study consisted of all the 23 local governments in Benue State in which 5 employees were judgmentally sample using 5-point Likert scale questionnaire. Pearson chi-square test was employed in testing the two (2) formulated hypothesis. The findings from the research revealed that Information Communication Technology (ICT) have played a positive role in areas of computerization of Internal Accounting, payroll operations, word processing and Budget planning and administration, job costing, scanning documentation and mapping, decision support, online training/learning, urban planning amongst others in the 23 local government areas of Benue State, Nigeria. The study also found that there exist several problems militating against ICT effective applications. These problems include lack of technical skills, acquisition of obsolete equipment, erratic power supply, ineffective regulation amongst others. The research recommended that local government administrators should make further investment in Information Communication Technology (ICT) a top priority as it is proven that it is a catalyst for development in areas of education, health, secretariat administration, proper financial reward keeping, politics, governance, culture, business and production.

Abubakari, et al., (2023) assessed the effect of Information Communication Technology (ICT) on administrative efficiency using the Tamale Technical University (TaTU) as a study area. A descriptive quantitative design was adopted. The total population was

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stratified into teaching and non-teaching and samples were drawn from each stratum by the method of purposive sampling and a total of 214 respondents were arrived and used for this study. Structured questionnaire was used in collecting data. The study found that TaTU has deployed ICT in administrative functions to some extent even though the ICT logistics are still not available in offices for the administrative functions. The deployment of ICT at the administrative functions improves efficiency and effectiveness. The study however revealed: the lack of human resource management software as well as antivirus software; the lack of proper maintenance; inadequate budget allocations; lack of in-service trainings; using different brands of ICT logistics; and unstable internet connections are the challenges bedeviling the ICT deployment in the University. Standardized brands of modern ICT facilities need to be provided together with reliable internet facilities at all times to avoid unnecessary interruptions which affect efficiency. The maintenance culture of the ICT logistics should also be improved and training of in-service personnel on the usage of the ICT facilities to help ensure their efficient utilization in the University.

Nnamdi & Busa, (2023) examined Information Communication Technology (ICT) and Secondary School Administration Effectiveness in Jos North Local Government Area of Plateau State. The Population of the respondents was 320 which comprises of the 22 principals, and 298 teachers of public secondary schools in Jos North Local Government area, and the same number of respondents was used as the sample size because the population was small. The researchers employed descriptive research design. A four-Likert self-designed questionnaire of Information Communication Technology and Secondary School Administration Effectiveness (ICTSSE) was used to elucidate information from the respondents. The data collected was analyzed on the basis of descriptive statistics using percentages, mean and standard deviation. Criterion mean of 2.50 was set, while the null hypothesis was tested using Chi-square at 0.05 level of significance. Findings of the study revealed that, ICT has a great influence on the administration effectiveness of students especially at the secondary school level. It was recommended amongst others that the government, administrators, teachers, should give priority to the utilization of ICT for easy administration of the schools. Stake holders, NGOs, and the PTA should encourage the use of ICT with internet connection in schools, and both the school administrators and the ministries of education should encourage the use of ICT in the administration of schools to improve effectiveness amongst the school administrators.

Elujekwute, et al., (2021) investigated the influence of information Communication Technology (ICT) Facilities on the management of public secondary schools in Benue State of Nigeria. Three (3) research questions and three (3) hypotheses guided the study. The review of related literature was done under the conceptual framework which identified the influence of e-mail, computer facilities and overhead projector in teaching and learning in public secondary schools in Benue State, Nigeria. Descriptive survey research design was adopted for the study. The population of the study comprised four thousand five hundred and twenty-six (4,526) teachers from two hundred twenty (220) grant-aided secondary schools in Benue State, Nigeria. A sample of two hundred and ninety-two (292) teachers from twenty-three (23) selected public secondary schools was used for the study.

A 15- items structured questionnaire constructed by the researchers titled, "Information and Communication Technology (ICT) Facilities and Public Secondary Schools Management Questionnaire (IICTPSSMQ)" was used for data collection. Descriptive statistics

of Mean and Standard Deviation were used to answer the research questions while the Chi-square ( $\chi^2$ ) statistical tool was used to test the hypotheses at 0.05 level of significance. The findings revealed that e-mail have significant influence on communication and computer facilities have significant influence on keeping of records while overhead projector have significant influence on teaching and learning in public secondary schools' management. The findings also revealed the overhead projectors have significant on teaching and learning in schools. Based on the findings of the study, it was recommended amongst others, that the government and educational administrators should ensure that e-mail services are provided in schools so as to enhance effective communication between teachers, students and parents. Also, the school administrators should make adequate provision of computers and encourage its usage in records keeping and administrative duties as well as in teaching and learning purposes. Finally, the educational managers should endeavor to provide sufficient overhead projectors in schools since effective learning may take place through the use pictorial presentation in classrooms. Conclusion were made and implication of the findings drawn.

### **Methodology**

The paper adopted the exploratory research design in which qualitative data was obtained through in-depth review of relevant literature.

### **Discussion of Findings**

This study shows that ICT plays a significant role in enhancing administrative efficiency in secondary schools by streamlining routine tasks, improving communication, and enabling data-driven decision-making. The study identified various ICT tools such as School Management Information Systems (SMIS), financial software, biometric attendance systems, and communication platforms like email and mobile apps as being commonly used by administrators to improve efficiency. These tools help in real-time data management, reduce administrative delays, improve accuracy in record-keeping, and enhance transparency and accountability. Furthermore, the study confirms that the use of ICT leads to increased speed in handling administrative processes such as student enrollment, result computation, staff management, and financial operations. This aligns with the findings of Ali et al. (2021) and Ajayi et al. (2022), who observed that ICT supports better coordination, improves communication with stakeholders, and enhances responsiveness in school management.

Despite these benefits, the study also found that several challenges hinder the full integration of ICT in secondary school administration. These include poor infrastructure (especially irregular electricity and weak internet connectivity), limited ICT competence among administrative staff, inadequate funding, and resistance to technological change. These barriers were similarly reported by Sule & Udoh (2021) and Omodan et al. (2020) emphasizing that without targeted investments in training and infrastructure, the potential of ICT in administrative efficiency may not be fully realized.

### **Conclusion**

This study concludes that ICT is a transformative tool that significantly enhances administrative efficiency in secondary schools by automating processes, reducing human error, and supporting better planning and communication. ICT tools such as SMIS, digital financial systems, and communication platforms have become vital assets in managing

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school operations effectively and transparently. However, the effective implementation of ICT in school administration is often constrained by infrastructural deficiencies, lack of technical skills among staff, funding limitations, and poor policy enforcement. The study emphasizes that for ICT to be successfully adopted and sustained in secondary school administration, there must be a deliberate effort to address these challenges through targeted policy actions and investment in capacity development. Consequently, ICT should not be viewed as a luxury or supplementary tool, but rather as a core component of educational administration necessary for efficient school governance in the 21st century.

### **Recommendations**

Based on the findings of the study, the following recommendations are proposed:

1. **Improve ICT Infrastructure:** Government and school management should prioritize investment in digital infrastructure, including stable electricity supply, high-speed internet, and modern computing facilities, to support ICT adoption in school administration.
2. **Capacity Building and Training:** Regular in-service training and ICT workshops should be organized for school administrators and support staff to improve their digital literacy and enhance their ability to effectively use ICT tools in administrative tasks.
3. **Increase Funding for ICT Projects:** Educational stakeholders should allocate specific budgets for the procurement, maintenance, and upgrading of ICT facilities in secondary schools to ensure sustainability.
4. **Policy Enforcement and Monitoring:** The implementation of ICT-related policies should be actively monitored, and compliance should be enforced across all schools to ensure uniform adoption and use of digital technologies.
5. **Promote Positive Attitude Toward ICT Adoption:** Awareness campaigns should be introduced to reduce resistance to change among school personnel. Demonstrating the benefits and ease of ICT usage can encourage broader acceptance and utilization.

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