

**INFORMATION COMMUNICATION TECHNOLOGY AND
ADMINISTRATIVE COMPETENCE OF PUBLIC SENIOR SECONDARY
SCHOOL PRINCIPALS IN EDO SOUTH SENATORIAL DISTRICT OF
EDO STATE**

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FACULTY OF EDUCATION
UNIVERSITY OF BENIN
BENIN CITY**

JULY, 2026

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**A PROJECT SUBMITTED TO THE DEPARTMENT OF EDUCATIONAL
MANAGEMENT, FACULTY OF EDUCATION, UNIVERSITY OF BENIN,
BENIN CITY, IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF MASTER OF EDUCATION
(M.ED.) IN EDUCATIONAL MANAGEMENT**

JULY, 2026

CERTIFICATION

This is to certify that this project titled *Information Communication Technology and Administrative Competence of Public Senior Secondary School Principals in Edo South Senatorial District of Edo State* was carried out by **Raymond Etinosa Isobomuwa** with Matriculation Number **PG/EDU1511499**, in the Department of Educational Management, Faculty of Education, University of Benin, Benin City. The project has been read and approved as meeting the requirements for the award of the degree of Master of Education (M.Ed.) in Educational Management.

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DEDICATION

This work is dedicated to Almighty God, the source of all wisdom and knowledge, and to my beloved family whose unwavering love, support, and encouragement have been my greatest motivation throughout this journey.

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All glory and honour belong to Almighty God, whose grace, wisdom, and strength sustained me throughout the course of this study. His unfailing presence gave me the courage to persevere to the end.

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ABSTRACT

This study investigated the relationship between Information and Communication Technology (ICT)-based capacity building and the administrative competence of public senior secondary school principals in Edo South Senatorial District of Edo State. The study was motivated by the growing need for school administrators to possess adequate ICT competencies to effectively manage educational institutions in an increasingly technology-driven environment. Specifically, the study determined the level of ICT-based capacity building and administrative competence among principals, examined the relationship between ICT-based capacity building and administrative competence, and investigated whether the relationship varied based on principals' sex, educational qualification, years of experience, and age.

The study adopted a correlational descriptive survey research design. The population comprised 47 public senior secondary school principals in Edo South Senatorial District, while a sample of 24 principals were selected using a multistage sampling technique. Data were collected using a structured questionnaire that was validated by experts in Educational Management and Measurement and Evaluation. The reliability of the instrument was established using the Cronbach Alpha method. Mean and standard deviation were used to answer the research questions, while Pearson Product Moment Correlation and t-test statistics were employed to test the hypotheses at the 0.05 level of significance.

The findings revealed that the level of ICT-based capacity building (grand mean = 2.69) and the level of administrative competence (grand mean = 2.61) among public senior secondary school principals were high. The study further established a significant positive relationship between ICT-based capacity building and principals' administrative competence. Significant positive relationships were also found based on principals' sex, educational qualification, years of experience, and age. The study concluded that ICT-based capacity building is a significant predictor of principals' administrative competence. It therefore recommended that the Edo State Ministry of Education should strengthen continuous ICT training programmes, improve the provision of ICT facilities in schools, and institutionalize regular professional development initiatives to enhance principals' administrative effectiveness and improve the overall quality of secondary school administration.

CHAPTER ONE

INTRODUCTION

Background of the Study

Education remains one of the most important instruments for national development as it equips individuals with knowledge, skills, and competencies required to contribute meaningfully to the growth of society. The administration of educational institutions therefore requires competent leadership that can ensure effective teaching, learning, and overall school management. In Nigeria, the responsibility of managing secondary schools' rests on principals who are expected to possess administrative competence and the capacity to integrate modern innovations such as Information and Communication Technology (ICT) into their leadership practices to achieve efficiency and accountability. The emergence of ICT has transformed administrative operations across educational systems globally, yet many Nigerian secondary schools still struggle with low adoption and utilisation of these technologies in their management practices (Tijani, Ayoku, & Adeseko, 2020; Okon, Ekaette & Ameh, 2015).

ICT-based capacity-building is a fundamental component in the development of administrative competence among school principals, particularly in secondary schools. The integration of digital tools and platforms into school management provides principals with opportunities to enhance their leadership and managerial capabilities. This capacity-building process is influenced by several interconnected factors, each playing a crucial role in ensuring principals are not only familiar with ICT but are also equipped to utilize it effectively to improve school operations and educational outcomes. The key factors contributing to the strengthening of ICT capacity include ICT skills development, access to relevant training, the availability and utilization of resources, and the motivation and attitudes of principals toward the adoption of ICT. Each of these elements supports the goal of creating a digitally

competent leadership that can drive forward efficient administrative practices and better educational results.

At the heart of ICT-based capacity building is the development of ICT skills, which enables principals to handle the technical aspects of modern school administration. The ability to effectively navigate digital tools for data management, communication, and decision-making is essential for streamlining administrative functions and enhancing the management of resources. Principals who develop strong ICT skills can leverage digital platforms to manage school operations with greater efficiency, such as using email for communication, employing management software to track performance, and using data systems to analyze student progress (Avila, Nepomuceno, & Tangalin, 2021). As principals gain competence in these areas, they become not only better equipped to lead their schools but also role models for their staff, encouraging the widespread adoption of ICT across the school. These technical skills, therefore, do more than improve personal administrative competence; they set the tone for the digital transformation of the entire school environment, with the principal acting as a key advocate for the use of technology to support educational practices (Wang et al., 2017).

In tandem with skills development, access to ICT training opportunities plays a significant role in continuously updating and expanding a principal's digital knowledge base. Training opportunities, whether through formal workshops, online courses, or peer learning networks, provide principals with the practical and theoretical knowledge needed to integrate ICT into their leadership practices effectively. These programs help principals stay abreast of the latest technological trends and tools, ensuring they are not left behind in an ever-evolving digital landscape. With regular access to training, principals can sharpen their ICT skills, which enhances their ability to make informed decisions about the implementation of new technologies in school management (Suherman, 2025). Training also encourages a deeper

understanding of the broader impacts of ICT integration, such as improving communication, fostering collaboration among staff, and supporting data-driven decision-making. As principals gain more confidence in their ICT abilities through continuous professional development, they are better prepared to guide their schools toward improved educational outcomes and more effective organizational management (Jayakar & Grzeslo, 2015).

While developing ICT skills and accessing training opportunities are essential, the actual availability and utilization of ICT resources in schools are critical to successful capacity building. Principals require access to sufficient and up-to-date resources, such as computers, reliable internet, and specialized software, to implement ICT effectively in their schools.

However, simply having access to these resources does not automatically translate into their efficient use. It is the active integration of these resources into daily school operations that determines their effectiveness. For instance, data management systems enable principals to monitor student performance, track attendance, and identify academic trends, all of which are essential for making informed decisions (Ogudo et al., 2024). Similarly, communication tools like school management software, phone, social mediums (WhatsApp, Telegram, etc), and email systems facilitate collaboration between staff, students, and parents, making school communication more efficient. When resources are well-maintained and utilized to their full potential, they can significantly improve administrative processes, enhancing both the school's operational efficiency and its educational effectiveness (Avila et al., 2021).

The attitudes and motivations of principals towards ICT play a decisive role in how effectively they embrace and use technology within their schools. Principals who maintain a positive outlook toward ICT are more likely to adopt new technologies and incorporate them into school management practices. Such motivation often leads to proactive efforts in seeking

ICT training, exploring new digital tools, and advocating for necessary resources to support ICT integration within the school system (Joshi & Khatiwada, 2025). A motivated principal who believes in the value of ICT will not only adopt these tools personally but will also encourage their use among staff, thereby creating a culture of innovation within the school. This enthusiasm for ICT can inspire teachers to experiment with technology in their classrooms, fostering a more collaborative and dynamic learning environment. On the other hand, principals who lack motivation or hold a negative attitude toward ICT may struggle to integrate technology effectively, which can hinder the school's progress in adopting digital tools. The principal's attitude, therefore, serves as a catalyst for broader school-wide ICT integration, affecting both the administrative and educational practices (Wang et al., 2017).

A principal's administrative competence is a pivotal element in the successful operation of a school, impacting both academic performance and the overall school climate (Ifesiokwu et al., 2026). This competence encompasses a broad spectrum of skills that allow school leaders to efficiently balance academic oversight and administrative duties (Ibrahim & Daniel, 2019, as cited in García-Carmona & Castillo-López, 2021). Key determinants of administrative competence include the quality of supervision, the use of data for informed decision-making, the management of financial and personnel records, and the effectiveness of communication (Salma et al., 2022; Elujekwute, 2022; Asy'ari et al., 2024). These elements play a vital role in steering the school toward its objectives, ensuring it operates smoothly, fosters a conducive learning environment, and remains responsive to the needs of both staff and students (Neiroukh et al., 2024).

One of the foremost factors influencing administrative competence is the quality of supervision. A principal's ability to guide and support teaching staff directly affects the alignment of educational practices with the school's mission (Robinson et al., 2009, as cited in Anwar & Umam, 2020). Effective supervision goes beyond simply evaluating teacher

performance; it encompasses a structured approach that combines human judgment with modern technological tools, including Closed-Circuit Television (CCTV) systems, digital cameras, audio recorders, artificial intelligence platforms, and data-driven decision-making instruments (Almubarak et al., 2025). CCTV systems and digital cameras allow administrators to monitor instructional activities across multiple classrooms simultaneously, ensuring teaching practices remain aligned with academic standards even in the principal's physical absence (Hanwha Vision America, 2025). Audio recorders complement this by capturing verbal exchanges during lessons, enabling assessment of instructional clarity and the quality of teacher-student dialogue (Almubarak et al., 2025). The integration of artificial intelligence further elevates supervision quality by transforming recorded data into actionable insights (Almubarak et al., 2025). AI-powered platforms can analyze classroom sessions to detect engagement levels and generate performance summaries, equipping principals with evidence-based information that makes feedback sessions more targeted and productive (Kuleto et al., 2021, as cited in Springer Nature, 2025). This evidence feeds directly into data-driven decision-making tools, allowing principals to identify school-wide instructional trends and allocate professional development resources where they are most needed (Wang, 2021).

Principals who actively engage in this integrated supervision process — blending direct human engagement with the analytical power of modern tools — create a culture of continuous improvement, helping educators enhance their teaching skills and, ultimately, boosting student outcomes (Bangkara et al., 2022). This approach not only benefits teachers but also ensures the teaching environment remains dynamic and responsive to the evolving educational needs of students (He et al., 2024).

Tightly linked to supervision is the role of data in decision-making, which further reinforces a principal's administrative competence. Principals who are skilled in utilizing data can make strategic, evidence-based decisions that have a direct impact on the school's

performance. The ability to analyze various data points—ranging from student assessments to teacher performance—enables principals to pinpoint areas of improvement, monitor progress, and allocate resources efficiently (Solihah, 2023). With this data-driven mindset, principals can foster a climate of accountability and innovation, ensuring that both students and staff are equipped to meet the school's academic targets and operational goals.

Another fundamental aspect of a principal's administrative proficiency is managing financial and personnel records. Principals are tasked with ensuring that school funds are allocated efficiently to support educational priorities while maintaining financial transparency. This includes managing budgets, overseeing expenditures, and ensuring the proper use of resources. Equally important is the management of personnel records, which involves overseeing teacher evaluations, professional development opportunities, and maintaining comprehensive staffing records. Principals who effectively balance both financial and personnel management contribute to a stable school environment where educational objectives are supported by sound administrative practices (Karmila, Khairuddin, & Bahrin, 2023). The seamless integration of these elements ensures that staff have the resources they need, fostering an environment where both teaching and learning can thrive.

Integral to all these functions is effective communication, which is perhaps the most essential skill for any school leader. Principals must be able to communicate clearly with teachers, students, parents, and other stakeholders, ensuring that everyone involved understands the school's goals and expectations. Open lines of communication help to build trust and transparency, creating an atmosphere where challenges can be addressed promptly and collaboratively. Moreover, effective communication is crucial for resolving conflicts, motivating staff, and engaging parents in their children's education (Warman, 2022). Principals who master this skill are better able to maintain a cohesive and motivated school community, where all members are united in working toward the same objectives.

ICT-based records management plays an essential role in enhancing the administrative competence of secondary school principals. It provides a framework for improving communication, supervision, planning, and decision-making, which are critical to the effective management of a school. By adopting ICT tools such as computer, flash, google storage, etc., in these areas, principals can optimize their processes, ensuring clearer communication with staff, more efficient supervision of teachers, and data-driven decision-making that leads to improved educational outcomes and school operations.

One of the key ways ICT strengthens a principal's administrative competence is through improved communication. School communication involves complex interactions among teachers, students, parents, and the wider community. ICT tools such as email, instant messaging, social media, and school management software help facilitate these exchanges, making them more timely and organized (Nordin et al., 2021). Principals can use these tools to quickly disseminate important information, collaborate with staff, and maintain smooth communication channels across all levels of the institution. The integration of ICT also promotes transparency, ensuring that all stakeholders remain well-informed and engaged in the school's activities. In addition, during times of crisis, these tools enable principals to share urgent information efficiently, coordinate responses, and keep everyone updated in real-time (Sennuga et al., 2020). This proactive communication strengthens the principal's ability to manage the school effectively, addressing emerging issues and maintaining a stable educational environment.

In addition to communication, ICT plays a vital role in supporting principals with supervision, a key component of ensuring high teaching standards. Supervision enables principals to assess teacher performance and provide guidance that helps improve teaching practices. ICT tools, such as digital observation systems, online assessment platforms, and performance tracking software, supply the data needed for principals to evaluate teaching

more effectively (Senjaya et al., 2021). These tools allow for both virtual and in-person observations, where principals can collect performance data and monitor progress over time. Such data is invaluable for identifying areas of strength and areas in need of improvement, empowering principals to offer targeted support to teachers. In addition, ICT fosters peer review and collaborative supervision, allowing teachers to provide feedback and support to one another in a structured digital environment. This shift not only strengthens the principal's supervisory role but also helps build a culture of continuous professional development, which elevates teaching quality across the school (Tahsin et al., 2022).

The influence of ICT also extends to planning and decision-making, transforming how principals approach both long-term strategies and daily operational choices. ICT tools allow for the collection, analysis, and interpretation of data, providing principals with the insights necessary to make informed decisions aligned with the school's objectives and resources. School management systems enable principals to track key metrics such as student performance, attendance, and resource usage. This data aids in making decisions about curriculum adjustments, staffing, and budget allocations (Eze & Chinedu-Eze, 2018). Additionally, ICT tools assist in managing and tracking action plans, budgets, and performance indicators, ensuring that all decisions are grounded in evidence and remain transparent. The integration of ICT into decision-making processes also allows principals to collaborate with key stakeholders such as teachers, parents, and local authorities. This approach ensures that decisions reflect the diverse needs and priorities of the entire school community, leading to more effective and inclusive decision-making. As a result, ICT empowers principals to make decisions that are timely, aligned with the school's goals, and conducive to improving both educational outcomes for students and operational efficiency for the institution (Liu et al., 2022).

The role of ICT in educational administration goes beyond improving communication and data management. It enhances transparency, accountability, and efficiency in decision-making processes. ICT provides real-time access to information and promotes collaboration among teachers, students, and administrators (Oye, 2018). This integration allows for better coordination of school activities and fosters a culture of evidence-based management. However, the success of ICT in administration depends largely on the competence of the principal, who serves as the chief executive of the school. Without adequate training and exposure, the potential of ICT to revolutionise school management cannot be realised (Ombughim, Kenayathulla & Hoque, 2020).

The Nigerian government has introduced several policies and programmes aimed at integrating ICT into education, yet implementation at the school level remains weak. Many capacity-building workshops are irregular and lack depth, while most are not tailored to the practical administrative needs of principals (Ikegbusi & Gloria, 2016). In many states, including Edo, principals face challenges in accessing professional development opportunities that could improve their ICT competence and managerial performance. This inadequacy reflects the need for systematic ICT-based training programmes focused on building the competencies required for effective school administration.

ICT-based capacity-building can enhance the leadership qualities of principals by improving their decision-making, planning, and communication skills. Studies have indicated that exposure to ICT tools helps principals perform better in supervision, record management, and resource allocation (Ombughim, Kenayathulla & Hoque, 2020; Atunde, 2020). When principals acquire ICT skills, they can easily adapt to technological changes and implement innovative strategies for school improvement. In the absence of such training, administrative processes remain slow, inefficient, and prone to errors, leading to poor school outcomes. The lack of ICT competence among principals also affects the supervision of teachers and the

monitoring of students' progress, which in turn impacts the quality of education delivery (Okon, Ekaette & Ameh, 2015).

In addition to ICT-based capacity-building, certain intervening variables such as sex, experience, and qualification of principals have been identified in literature as factors that may influence administrative competence. These variables are often considered because they shape how principals acquire, interpret, and utilise ICT skills in school administration. Sex of the principal has been examined in relation to leadership effectiveness and ICT competence in educational settings. Studies have shown that both male and female principals demonstrate similar levels of administrative capability when exposed to equal training opportunities. Research indicates that gender does not significantly influence the use of ICT tools or leadership performance in schools, as both male and female administrators exhibit comparable competence in digital practices and school management (El Takach et al., 2018); (Gómez-García et al., 2020). However, variations may occur due to differences in access to ICT training and professional development opportunities.

Experience of the principal is another variable that has been linked with administrative competence and leadership effectiveness. Principals with longer years of service are often associated with stronger managerial skills, better decision-making ability, and improved coordination of school activities. Empirical evidence shows that experience contributes significantly to leadership competence and administrative performance (Zaid, 2022). At the same time, studies have indicated that younger or less experienced educators may display higher levels of adaptability to ICT due to increased exposure to digital technologies (Jegede, 2009). This reflects the dynamic interaction between experience and technological competence in school administration.

Qualification of the principal has also been widely recognised as a key factor influencing administrative effectiveness and ICT utilisation. Higher educational

qualifications provide principals with advanced knowledge, leadership skills, and exposure to modern administrative practices, including the use of ICT in school management. Studies have revealed that principals with higher academic qualifications tend to demonstrate better leadership performance and administrative competence (Zaid, 2022). In addition, principals with formal ICT training are more likely to utilise digital tools effectively for communication, record-keeping, and decision-making (Njathi et al., 2018). Despite these findings, limited studies have examined how these variables interact with ICT-based capacity-building to influence administrative competence of principals, particularly within the context of secondary schools in Edo South Senatorial District.

In Edo South Senatorial District, there has been limited research assessing the relationship between ICT-based capacity-building and administrative competence of secondary school principals. Despite the existence of several government-led ICT initiatives, many principals in the district have not fully integrated digital tools into their administrative practices. This limits their ability to perform effectively in areas such as data management, staff coordination, and communication. The gap between policy expectations and practical application in the region highlights the urgent need for an empirical study that investigates how ICT-based capacity-building influences the administrative competence of secondary school principals. The findings from such a study will be useful in guiding policymakers, education boards, and training institutions in designing effective capacity-building programmes for principals in Edo State.

The importance of ICT-based capacity-building in enhancing the administrative competence of secondary school principals cannot be overemphasised. It empowers school leaders with the knowledge and skills to manage modern educational environments efficiently and aligns with global trends in educational management. The present study therefore seeks to examine the extent to which ICT-based capacity-building influences the

administrative competence of secondary school principals in Edo South Senatorial District. The study also aims to identify whether differences in gender, school size, and location affect principals' administrative competence, with the goal of providing recommendations that can inform policy and practice for sustainable educational leadership in Edo State.

Statement of the Problem

The increasing integration of Information and Communication Technology (ICT) into the education sector has significantly transformed school administration across the world. ICT tools are now widely used for record keeping, communication, data management, decision-making, and general school administration. In modern educational systems, principals are expected to possess adequate ICT knowledge and skills that will enhance their administrative competence and improve the overall effectiveness of school management (Kaur, Gupta & Syal, 2016). Consequently, ICT-based capacity-building has become an important strategy for equipping school leaders with the necessary technological skills required to perform their administrative duties efficiently.

However, in many secondary schools in Nigeria, particularly in Edo South Senatorial District of Edo State, the level of ICT utilization in school administration appears to remain relatively low. Many principals still rely heavily on traditional administrative methods such as manual record keeping, paper-based communication, and conventional management practices. This situation may be linked to limited access to ICT facilities, inadequate training opportunities, insufficient technical support, and lack of continuous professional development in ICT for school administrators (Sheikh et al., 2019).

Furthermore, the rapid advancement in digital technologies requires school principals to continually update their knowledge and skills through structured ICT-based capacity-

building programmes (Nwokedi, 2018). Without adequate training and exposure to modern ICT tools, principals may face challenges in effectively performing key administrative functions such as data management, staff supervision, communication with stakeholders, and decision-making processes. This could negatively affect administrative efficiency, school coordination, and the overall quality of educational management.

Research Questions

1. What is the level of ICT Based Capacity-Building of secondary school principals in Edo South Senatorial District, Edo state?
2. What is the level of administrative competence of secondary school principals in Edo South Senatorial District of Edo state?
3. What is the relationship between ICT-based capacity building and principals' administrative competence in Edo South Senatorial District of Edo State?
4. What is the relationship between ICT-based capacity building and principals' administrative competence in secondary schools in Edo South Senatorial District based on Sex of the Principal?
5. What is the relationship between ICT-based capacity building and principals' administrative competence in secondary schools in Edo South Senatorial District based on Qualification of the Principal?
6. What is the relationship between ICT-based capacity building and principals' administrative competence in secondary schools in Edo South Senatorial District based on Experience of the Principal?
7. What is the relationship between ICT-based capacity building and principals' administrative competence in secondary schools in Edo South Senatorial District based on Age of the Principal?

Research Hypotheses

Research questions 1-2 will be answered directly, while research question 4-6 will be hypothesized

1. There is no significant relationship between ICT-based capacity building and principals' administrative competences
2. There is no significant relationship between ICT-based capacity building and principals' administrative competence based on principal's sex
3. There is no significant relationship between ICT-based capacity building and principals' administrative competence based on principal's qualification
4. There is no significant relationship between ICT-based capacity building and principals' administrative competence based on principal's experience
5. There is no significant relationship between ICT-based capacity building and principals' administrative competence based on principal's age

Purpose of the Study

The main purpose of this study is to investigate the influence of ICT-based capacity building on the administrative competence of secondary school principals in Edo South Senatorial District. Specifically, the study seeks to:

1. Determine the level of ICT Based Capacity-Building of secondary school principals in Edo South Senatorial District
2. Ascertain the level of administrative competence of secondary school principals in Edo South Senatorial District of Edo state
3. Examine the relationship between ICT-based capacity building and principals' administrative competence in Edo South Senatorial District of Edo State
4. What is the relationship between ICT-based capacity building and principals' administrative competence in secondary schools in Edo South Senatorial District based on Sex of the Principal?

5. Ascertain the relationship between ICT-based capacity building and principals administrative competence in secondary schools in Edo South Senatorial District based on Qualification of the Principal
6. Examine the relationship between ICT-based capacity building and principals administrative competence in secondary schools in Edo South Senatorial District based on Experience of the Principal?
7. Examine the relationship between ICT-based capacity building and principals administrative competence in secondary schools in Edo South Senatorial District based on Experience of the Age?

Significance of the Study

The significance of this study extends to several key stakeholders in the education sector, including the government, educational planners, school administrators, teachers, students, and researchers. Each of these stakeholders will benefit from the findings of this study, as they provide valuable insights into how ICT-based capacity building can enhance the administrative competence of secondary school principals.

The government stands to benefit by gaining evidence-based insights into how ICT training can enhance the administrative capacity of school principals. This can guide the development of policies that prioritise ICT integration in school management, ensuring that principals are equipped with the necessary skills to improve school governance. As the government seeks to improve educational standards and school performance, investing in ICT training for principals will contribute to achieving these goals by fostering efficient school management.

Educational planners will gain a deeper understanding of the critical role that ICT plays in developing the administrative competence of school principals. This study will provide them with the data needed to design more effective ICT training programmes that are

tailored to the specific needs of secondary school principals. The findings can help planners identify gaps in current professional development initiatives, leading to the creation of targeted capacity-building strategies that foster improved leadership and administrative practices.

Secondary school principals will directly benefit from this study by gaining insights into how ICT can streamline their administrative tasks. This includes enhancing decision-making processes, improving communication within the school system, and better managing records. With the increasing demands on school leadership, the effective use of ICT can significantly enhance a principal's ability to manage school operations efficiently, leading to improved educational outcomes and a more productive school environment.

Teachers will benefit indirectly through enhanced administrative practices that come from better ICT integration in school management. When principals utilise ICT effectively, it can improve communication, decision-making, and overall school organisation, creating a more conducive teaching environment. This will result in better support for teachers, more timely access to resources, and an improved ability to meet students' needs.

Students stand to benefit from improved school administration as a result of effective ICT usage. Better-managed schools, with more efficient decision-making and communication systems, can lead to a more organised learning environment. This, in turn, improves the quality of education, providing students with a more focused and supportive educational experience.

The study will contribute to the academic community by providing valuable data and analysis on the impact of ICT-based capacity-building programmes on administrative competence. This will not only enrich the existing body of literature but also serve as a foundation for future studies on ICT integration in educational management and leadership.

Scope and Delimitation of the Study

The scope of this study is centred around ICT-based capacity building on the administrative competence of senior secondary school principals in public secondary schools in the Edo South Senatorial District of Edo State, Nigeria. Specifically, the study will investigate how ICT-based skills acquired through capacity-building programmes influence the principals' administrative competence. It will assess the types of ICT training and professional development opportunities available to principals and how these affect their effectiveness in administrative functions.

Furthermore, the study will evaluate the adequacy of ICT resources and infrastructure in these public secondary schools. The research will also explore the challenges faced by principals in using ICT for effective school management.

The dependent variables in this study are the administrative competence of the principals, particularly in decision-making, communication, and record management. The independent variables include the ICT-based skills acquired by principals, the types of ICT training and professional development opportunities available to them, and the adequacy of ICT resources and infrastructure in the schools. This study will be delimited to the public senior secondary schools in Edo South senatorial district. Intervening variables of this study are principal sex, qualification, and experience.

Definition of Terms

The following terms are defined as they are used in this study:

Information Communication Technology Based Capacity-Building: This refers to the process of improving the knowledge, skills, and competencies of school principals through the use of Information and Communication Technology (ICT) tools and resources to enhance their professional performance and management effectiveness.

Administrative Competence: This refers to the ability of school principals to effectively plan, organize, coordinate, train, supervise, and evaluate school programmes and resources to achieve set educational goals.

Information and Communication Technology (ICT): This refers to the technological tools and systems such as computers, the internet, email, educational software, and digital devices used to collect, store, process, and communicate information for administrative and instructional purposes.

Principals: These are the administrative heads of secondary schools responsible for ensuring the effective implementation of educational policies, coordination of staff, supervision of instruction, and overall management of school affairs.

Capacity-Building Programmes: These are organized training activities, seminars, workshops, or professional development sessions designed to improve the knowledge and leadership competencies of school administrators, particularly in ICT integration.

Administrative Effectiveness: This refers to the extent to which principals are able to carry out their administrative duties efficiently to achieve the goals and objectives of their schools.

Edo South Senatorial District: This refers to one of the three senatorial districts in Edo State, comprising Egor, Ikpoba-Okha, Oredo, Orhionmwon, Ughunmwonde, Ovia North-East, and Ovia South-West Local Government Areas, which form the geographical area covered by this study.

Sex: Classification of principals as either male or female, with a focus on their administrative competences in public secondary schools within the Edo South Senatorial District.

Experience: The number of years a principal has spent in the teaching profession and in school administration, particularly in the position of a secondary school principal.

Qualification of Principal: The highest academic or professional educational credential obtained by a principal, such as a Bachelor's degree, Postgraduate Diploma, Master's degree, or other relevant professional certification in education or educational administration.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of related literature was discussed under the following sub-headings:

Theoretical Framework

Competency-Based Theory

Concept of ICT-Based Capacity Building

Concept of Administrative Competence of Secondary School Principals

Level of ICT-Based Capacity Building of Secondary School Principals

Level of Administrative Competence of Secondary School Principal

ICT-Based Capacity Building and Principals' Administrative Competence

ICT-Based Capacity Building and Administrative Competence of the Principal Based on Sex

ICT-Based Capacity Building and Administrative Competence of the Principal Based on Qualification of the Principal

ICT-Based Capacity Building and Administrative Competence of the Principal Based on Experience

Summary of Reviewed Literature

Theoretical Framework

This study rests on Competency-Based Theory, advanced by Richard Boyatzis (1982) in *The Competent Manager: A Model for Effective Performance*. Boyatzis broke from earlier approaches that judged managers by intelligence scores or academic credentials, arguing instead that performance depends on an underlying personal characteristic, whether a motive, trait, skill, self-image, or body of knowledge, that produces effective or superior results in a job (as cited in EBSCO, n.d.). Two tiers of competency follow from this premise. Threshold competencies cover the baseline knowledge and skill a worker needs just to function in a role, while differentiating competencies mark out what separates a strong performer from an average one (Kramer, 1998). A principal who can operate a school management system

meets a threshold competency; a principal who uses that system to anticipate enrolment shortfalls before they happen displays a differentiating one.

A second tenet concerns fit. Boyatzis treated managerial effectiveness as three forces meeting at a single point: the individual's own capability, the demands the job places on them, and the conditions set by the organisation around them (Boyatzis, 2008). Performance rises when these align and falters when any one pulls against the others. A principal might possess strong digital skill yet still struggle if the school's infrastructure cannot support it, or if administrative expectations leave no room to apply that skill. The theory therefore locates competence not purely inside the person but at the meeting point of person, task, and setting. Spencer and Spencer (1993) later extended Boyatzis's model through the iceberg metaphor. Skills and knowledge sit above the surface, visible and trainable, while motives, traits, self-concept, and values sit below it, harder to see and slower to change (as cited in JVR Africa Group, n.d.). The metaphor matters here because it warns against treating administrative competence as nothing more than the ability to operate a computer. Visible digital skill can be taught in a workshop; the deeper habits of judgement and persistence that push a principal to actually use that skill on the job are harder to instil and easier to overlook.

Competency-Based Theory fits this study because it gives a structure for separating what a principal merely knows from what a principal can demonstrably do, the precise distinction at stake when ICT-based capacity building is measured against administrative competence. AkbarKhansari, Sharifirad, Khoshgoftar Moghadam, and Rahmani (2023) built a competency evaluation model for school principals around six dimensions, among them operational, leadership, and interpersonal competency, confirming that the threshold-versus-differentiating logic Boyatzis proposed still organises how principal competence is assessed in practice. Their model treats competence as observable and gradable rather than assumed from a certificate, the same standard applied here: a principal's ICT training matters only

insofar as it shows up in better timetabling, clearer communication with staff and parents, sounder record-keeping, and steadier decision-making.

The theory also explains why ICT exposure alone cannot guarantee competence. Following Boyatzis's fit argument, a principal trained extensively in digital tools but working in a school without electricity, internet access, or institutional support for digital adoption would still register low administrative competence, not because the training failed but because the organisational leg of the fit triangle never met the personal one. This reading pushes the study away from treating ICT-based capacity building as an automatic upgrade and toward testing it as one input that succeeds or fails depending on what surrounds it.

Differentiated against sex, qualification, and years of experience, as this study sets out to do, the theory predicts that differentiating competencies, not threshold ones, should account for most of the variation observed. If principals differ in administrative competence after similar ICT exposure, this points toward differences in how each converts training into judgement, initiative, and contextual application, rather than toward raw differences in exposure to technology itself. ICT-based capacity building supplies threshold material; administrative competence is the differentiating outcome this study sets out to measure.

Concept of ICT-Based Capacity Building

Information and Communication Technology (ICT)-based capacity building represents a transformative approach to improving human competence, institutional performance, and sustainable development through the acquisition and application of digital knowledge and skills. The concept has evolved globally as an indispensable part of education, health, and governance, reflecting the recognition that digital competencies are now central to effective performance in virtually every field. Capacity building through ICT focuses on the continuous improvement of individuals and organisations by integrating technology into professional development, decision-making, and service delivery processes. Across the world,

this concept has become a central pillar of workforce enhancement and innovation, facilitating inclusive participation in a digitally driven society.

ICT-based capacity building has become an important mechanism for enhancing human capital and knowledge management across all sectors of development. As observed by Thoman, Baik, Beazer, Sharif, and Raheel, (2025), the integration of learning technologies in education has redefined the way professionals are trained, with digital platforms now serving as enablers of competence, innovation, and knowledge dissemination. In many advanced economies, digital tools such as virtual reality, artificial intelligence, and online collaborative systems are being used to strengthen capacity-building initiatives that promote equitable access to education and professional training. The World Bank, United Nations Educational, Scientific and Cultural Organisation (UNESCO), and International Telecommunication Union (ITU) have identified ICT-based training as a key driver of global human resource development, as it fosters adaptability and continuous learning in a rapidly changing technological landscape (Thomas et al., 2025).

In professional contexts, capacity building through ICT is anchored on the development of digital literacy, communication proficiency, and problem-solving abilities. Bassey, Isiwale, and Ekanem (2020) explained that ICT-based education enhances both teaching and learning experiences by increasing engagement, access, and efficiency, thereby improving human competence. In developed countries, structured ICT-based training frameworks are incorporated into national development strategies, allowing continuous upgrading of workers' skills. Digitalisation has reshaped professional capacity-building programmes across Europe, Asia, and the Americas through the adoption of open educational resources and cloud-based collaboration tools, which have widened participation and reduced geographical barriers to training. This shift has demonstrated that capacity building is no

longer limited to conventional workshops or classroom sessions but has evolved into dynamic and interactive experiences facilitated by technology.

The role of ICT-based capacity building extends beyond mere technological literacy; it encompasses the empowerment of individuals and institutions to use technology to solve problems, improve service delivery, and foster innovation. In the health sector, Ogbenna, Drane, and Oyedele (2022) demonstrated that digital learning programmes significantly improved the competence and confidence of Nigerian healthcare professionals, showing the direct impact of ICT-based training on workforce performance. Globally, digital learning platforms such as Coursera, edX, and WHO Academy have been instrumental in expanding the reach of professional development, particularly in health, education, and governance. This has led to a shift in capacity-building paradigms towards self-directed learning supported by mobile and cloud technologies, which offer greater flexibility and accessibility to learners worldwide.

Across Africa, the relevance of ICT-based capacity building has gained substantial attention as nations seek to bridge the technological divide and accelerate socioeconomic development through human resource enhancement. Baik et al. (2025) found that the adoption of digital learning technologies in African medical institutions has transformed learning environments by creating more interactive and learner-centred systems. In Sub-Saharan Africa, ICT-based training has been increasingly incorporated into higher education, teacher development, and public sector reform. The African Union's Digital Transformation Strategy for Africa (2020–2030) identified digital skills and innovation as the foundation for sustainable development, emphasising the role of ICT in building a competitive knowledge economy. Ajayi, Zhao, and English (2025) noted that strengthening digital competence among specialists across African health systems is crucial for improving service delivery, research output, and leadership effectiveness.

Capacity-building efforts in Africa have largely been characterised by partnerships between local institutions and international organisations to improve digital literacy and knowledge transfer. The integration of mobile-based training has become particularly effective in reaching diverse professional groups across the continent. Odu, Osi, and Goldstein (2024) demonstrated that mobile training interventions significantly enhanced the knowledge and diagnostic abilities of health workers in Nigeria, underscoring the potential of on-demand ICT-based capacity building to enhance public health service delivery. Similarly, Odih, Ikhimiukor, and Afolayan (2025) emphasised that decentralised bioinformatics training in Nigeria enhanced data interpretation and research competence among public health professionals, revealing the transformative power of ICT in creating decentralised learning systems that are accessible and cost-effective.

The integration of ICT-based capacity building in African education systems has also become critical to improving teaching quality and administrative efficiency. Ogegbo, Tijani, and Ifekoya (2021) observed that digital competence among African university students is gradually increasing, though disparities persist between countries, reflecting the uneven pace of technological adoption. Bakare (2025) reinforced this observation, indicating that capacity-building initiatives targeting lecturers and students in Nigerian universities have enhanced digital awareness and improved the integration of technology into teaching and learning processes. These developments affirm that ICT-based capacity building is essential to achieving educational transformation and aligning African universities with global standards in digital pedagogy and administration.

Within the Nigerian context, ICT-based capacity building has become integral to national development efforts, especially in education, healthcare, and research. The Nigerian National ICT Policy promotes the use of technology in education and administration to foster digital competence and efficiency. Studies show that ICT-oriented capacity building in

Nigeria has increased productivity, improved service delivery, and expanded access to learning opportunities. Nwogbe and Haliso (2020) found that continuous professional development among healthcare professionals in Lagos State was largely influenced by ICT-based informal learning such as online conferences, in-service training, and web-based seminars, which enhanced skill acquisition and performance. This aligns with the broader understanding that digital learning modalities have become critical tools for sustaining workforce development in Nigeria.

ICT-based capacity building in Nigeria has expanded beyond traditional training workshops to include structured digital programmes in health, education, and public administration. Shepherd, Hussaini, and Aliyu (2023) established that the implementation of biostatistics training for Nigerian researchers through ICT-supported modules enhanced research competence and data literacy across institutions, illustrating the potential of digital learning to strengthen research capacity. In a related development, Owoade, Wuraola, and Akinyemi (2022) observed that targeted ICT-based oncology research training improved the knowledge and confidence of Nigerian physicians in conducting scientific research, confirming that ICT is an effective vehicle for professional advancement and institutional development.

The development of ICT-based capacity programmes has also influenced the educational landscape in Nigeria, with universities and colleges integrating technology into staff training and instructional design. Bob-Eze and Arubayi (2022) found that computer-assisted teaching methods in Nigerian tertiary institutions enhanced lecturers' capacity for innovation and improved the quality of instruction. Obeten and Enang (2021) shared a similar perspective, noting that ICT-oriented professional development strengthens the pedagogical and research competencies of lecturers, positioning them for improved performance and adaptability. These insights reflect the growing recognition that ICT-based capacity building

is not merely an educational innovation but a necessary framework for professional advancement in a rapidly digitalising society.

ICT-based capacity building also fosters collaborative learning and knowledge exchange across institutional and national boundaries. The Vanderbilt-Nigeria Biostatistics Training Programme (Shepherd et al., 2023) exemplified how digital collaboration can enhance knowledge transfer and mentorship across continents. Virtual training environments have become pivotal for capacity development in Nigeria's health and education sectors, as seen in Ogbenna et al. (2022), where online training significantly improved participants' knowledge retention and confidence levels. Such collaborative approaches have made ICT-based capacity building a cornerstone of human resource development in low- and middle-income countries.

In educational management, ICT-based capacity building strengthens the administrative efficiency of school leaders and managers. Digital training programmes improve their ability to handle data management, communication, and performance monitoring. Bakare (2025) emphasised that ICT training enhances administrators' digital competence and leadership effectiveness, especially in planning, coordination, and resource allocation. This observation supports the broader understanding that ICT-based capacity building extends beyond technical proficiency to include strategic and leadership competencies required for managing digital transformation in institutions.

In the African development context, capacity building through ICT continues to be a vital driver of innovation, inclusivity, and professional empowerment. Ajayi et al. (2025) highlighted that the inclusion of non-clinical competencies such as leadership, management, and communication in specialist training programmes across Africa has become essential for effective service delivery and professional development. This reinforces the understanding

that ICT-based capacity building does not only equip individuals with digital tools but also enhances their soft skills, problem-solving abilities, and professional adaptability.

From a national development perspective, ICT-based capacity building in Nigeria has facilitated the creation of knowledge networks and digital learning communities. Bell-Gam and Ovwromoh (2025) demonstrated that digital transformation in Nigerian universities improved awareness and engagement among both lecturers and students, enhancing learning outcomes and promoting continuous professional development. These findings align with national education policies that promote digital inclusion and capacity development as key components of Nigeria's sustainable development strategy.

Across global, continental, and national contexts, ICT-based capacity building has established itself as a foundation for human capital enhancement, institutional efficiency, and innovation. It enables professionals to adapt to evolving digital demands while contributing effectively to national development goals. The continuous adoption of digital tools for capacity building across education, health, and research sectors underscores its critical role in transforming societies. The Nigerian experience, supported by growing investments in ICT integration and capacity development, exemplifies how technology can drive sustainable progress when embedded within structured human resource development frameworks.

Concept of Administrative Competence of Secondary School Principals

Administrative competence has been conceptualised as the dynamic combination of knowledge, skills, and personal attributes that enable school principals to effectively manage human, material, and financial resources within their institutions to achieve educational goals. Gul (2024) described administrative competence as the capacity of principals to harmonise personal characteristics such as emotional balance, vigilance, and decision-making capability with technical, human, and conceptual skills that collectively ensure institutional stability. This view reinforces the idea that administrative competence transcends routine management,

encompassing strategic insight, interpersonal intelligence, and an ability to navigate the socio-political contexts of schools in times of pressure and change. Lidyanti, Kartiwi, and Somantri (2023) emphasised that competence in administration derives not only from technical expertise but also from the leader's ability to coordinate effectively, motivate personnel, and promote a culture of collaboration among staff members.

The concept of administrative competence also implies a continuous developmental process rather than a static attribute. Bouchamma, Basque, Giguère, and April (2023) maintained that competency frameworks for principals, particularly within professional learning communities, must include adaptability, instructional leadership, and reflective capacity to sustain improvement and innovation in schools. They asserted that competent administrators demonstrate an ongoing commitment to self-assessment, professional learning, and collaborative growth, which in turn enhances the collective performance of their schools. Orboh and Eromosele (2025) agreed with this position, describing administrative competence as a multidimensional construct comprising instructional management, personnel administration, financial stewardship, student service coordination, and school-community relations. Their review identified that the performance of these administrative tasks directly determines the morale, productivity, and professional satisfaction of teachers, thus influencing institutional effectiveness.

Gul (2024) examined the contribution of personal characteristics to principals' administrative competence, highlighting that the attributes of conscience vigilance and emotional balance accounted for nearly 91.5 per cent of variations in administrative capacity among school heads in East Jerusalem. These findings reveal the intertwined nature of emotional intelligence and administrative performance, suggesting that principals' self-regulation and empathy are foundational to effective leadership. The study concluded that administrative competence flourishes when leaders possess intrinsic motivation, patience

under stress, and a commitment to ethical governance. These personal attributes, when coupled with procedural and managerial proficiency, create a balanced administrative profile that supports decision-making and school improvement initiatives.

Administrative competence has also been conceptualised through the lens of managerial efficiency and institutional accountability. Olaifa, Ajala, and Medupin (2024) linked administrative competence to effective fund management and prudent resource utilisation, observing that principals who maintained accurate financial records and adopted transparent budgeting practices demonstrated superior organisational outcomes. They stressed that financial accountability forms the backbone of administrative credibility, as it strengthens trust between the principal, staff, and external stakeholders. In a similar vein, Macalisang (2023) found that school administrators with high competence in instructional supervision exhibited a strong influence on organisational culture, promoting collaboration and a shared sense of responsibility among staff. This reveals that administrative competence extends beyond bureaucratic functions, encompassing the capacity to shape positive school climates and align institutional operations with educational values.

Leadership theories have often framed administrative competence as a manifestation of transformational and democratic leadership attributes. Rafiq-uz-Zaman, Bano, and Naveed (2025) explored the intersection between leadership style and management effectiveness, asserting that democratic leadership models that promote joint decision-making and teacher empowerment enhance administrative competence more sustainably than authoritarian approaches. They argued that competent principals demonstrate balanced authority, participatory governance, and flexibility in addressing school challenges. Adams and Thompson (2025) advanced this view by asserting that the future of school administration lies in leaders' ability to integrate digital technologies and data-driven decision-making into

their administrative routines, positioning competence as a function of adaptability and technological literacy.

Astuti and Khuriyah (2024) emphasised the strategic role of principals in enhancing teacher competence as an essential dimension of administrative effectiveness. Their study showed that mentoring, coaching, and motivational support constitute key elements of the principal's administrative role, demonstrating how leadership competence translates into professional development within the teaching workforce. The relational component of administrative competence, which includes communication, motivation, and conflict resolution, remains vital in ensuring the alignment of institutional goals with individual aspirations. Lidyanti et al. (2023) confirmed that principals who maintained regular interactions with administrative staff and created open communication channels fostered greater cooperation, reducing workplace tension and inefficiency.

The administrative competence of principals has also been evaluated in relation to crisis management and adaptive capacity. Martínez, Amick, and McAbee (2021) explored administrators' self-efficacy during the COVID-19 pandemic and observed that competent leaders relied heavily on strategic planning, adaptability, and stakeholder communication to maintain continuity in learning. Their findings revealed that administrative competence involves the ability to balance structural and human resource dimensions of leadership during uncertainty, reinforcing the relevance of systems thinking in modern school administration. In contexts of educational reform, such competence has been associated with resilience and innovation, attributes that enable school leaders to respond effectively to policy changes and emerging challenges.

Lewandowska, Jankowski, and Gujski (2025) expanded the understanding of administrative competence to include principals' roles in promoting mental health and social welfare within schools. Their study demonstrated that over 94 per cent of principals

recognised an increasing burden of student mental health concerns and viewed their administrative competence as central to coordinating preventive and responsive interventions. They observed that principals with higher organisational and communication competence were more likely to implement comprehensive wellness programmes and engage parents and teachers in mental health promotion. This dimension underscores that administrative competence extends into welfare management, where principals serve as custodians of both educational and psychosocial wellbeing.

In the African educational context, administrative competence remains deeply intertwined with systemic constraints such as limited funding, bureaucratic rigidity, and uneven capacity development opportunities. Orboh and Eromosele (2025) noted that in Nigeria, principals' administrative performance significantly predicted teacher work attitudes, indicating that administrative competence operates as a motivational lever that shapes institutional culture. In contrast, studies in Indonesia by Lidyanti et al. (2023) revealed that administrative competence is often undermined by inadequate professional supervision and resource scarcity, prompting calls for structured mentoring systems and targeted administrative training. These observations align with Bouchamma et al. (2023), who advocated for competency-based frameworks that emphasise leadership development, collaboration, and reflective inquiry as mechanisms for strengthening administrative capacity across educational systems.

Across global perspectives, administrative competence has evolved into a multidimensional construct integrating technical acumen, emotional intelligence, ethical conduct, and visionary leadership. Gul (2024) concluded that the effectiveness of school leadership depends on the harmonious balance between personal attributes and professional skills, a view consistent with Macalisang (2023), who demonstrated that administrative proficiency correlates with institutional coherence and high organisational culture.

Collectively, these perspectives converge on the understanding that administrative competence is not merely a managerial attribute but a transformative capacity that shapes school development, teacher commitment, and student success.

Level of ICT-Based Capacity Building of Secondary School Principals

Persistent pressure for digital transformation in schools has pushed educational leadership into a space where competence in information and communication technology has become intertwined with administrative effectiveness and instructional improvement. In many secondary schools, the degree to which principals acquire ICT related knowledge and skills through structured professional development reflects the broader readiness of educational systems to respond to the demands of digital learning environments. Evidence drawn from recent scholarly publications indicates that ICT based capacity building for school leaders is no longer limited to technical training but increasingly involves strategic leadership development, digital vision formation, and the ability to organise professional learning systems that support technology use across schools (Yang, Alias, & Mohd Nor, 2025). Within such contexts, the level of ICT based capacity building among principals becomes a critical factor that shapes how effectively digital tools are adopted within school management and instructional processes.

Empirical literature produced within the last few years portrays ICT capacity building among secondary school principals as a multidimensional construct encompassing technological knowledge, leadership competence, and the ability to facilitate professional development among teachers. A systematic analysis of leadership and ICT integration reported that principals who participate in structured digital training programmes tend to demonstrate stronger technological leadership behaviours such as modelling technology use, organising teacher training, and allocating resources for digital learning initiatives (Yang et al., 2025). The study analysed twenty-six scholarly works published between 2021 and 2025

and established that capacity building activities create a pathway through which leadership actions influence ICT integration within schools. Such findings illustrate that the level of ICT capacity development among principals determines the depth of technology adoption within the broader educational environment.

The digital transformation agenda in education has also expanded the expectations placed on school leaders in relation to ICT competence. Thahir (2025) explained that effective digital leadership among school principals incorporates five interconnected dimensions which include digital vision, technology competence, teacher capacity development, organisational change management, and the ability to build an innovation oriented school culture. These dimensions emphasise that ICT capacity building among principals extends beyond technical skills into strategic leadership practices that influence teaching and learning quality. In schools where principals receive structured digital leadership training, teachers tend to adopt technology in more meaningful ways, indicating that the principal's level of ICT capacity often cascades through the entire school system.

Recent quantitative evidence from Nigeria reinforces this perspective by revealing that school leaders demonstrate varying degrees of digital leadership competence depending on their exposure to professional development opportunities. Okunlola and Naicker (2025) surveyed 381 teachers across secondary schools in Oyo State and found that many principals possessed digital leadership competencies aligned with the International Society for Technology in Education standards. Reliability analysis of the digital leadership domains produced coefficients ranging from 0.85 to 0.91, indicating strong internal consistency in measuring leadership competence. These results highlight the growing recognition of ICT related capacity building as a core requirement for educational leadership within developing contexts.

The influence of ICT based professional development on school effectiveness is also reflected in statistical relationships observed within several recent studies. In Ekiti State, Nigeria, an investigation involving 594 teachers across fifty-four public secondary schools found a strong positive correlation between principals' strategic goal setting and overall school effectiveness ($r = 0.774$, $p < 0.05$), while the relationship between the use of technological tools and school effectiveness remained moderately strong ($r = 0.496$, $p < 0.05$) (Adedapo, 2025). These statistical patterns underline the view that principals who receive adequate ICT related capacity development are better positioned to utilise technological resources in ways that enhance administrative and instructional outcomes within schools.

Digital competence among school leaders has also been conceptualised as professional digital competence, a framework that recognises the interconnected relationship between leadership practices and digital technologies within educational institutions. Tømte (2024) explained that professional digital competence among school leaders encompasses the ability to manage digital infrastructures, guide pedagogical technology use, and make strategic decisions regarding technology adoption in schools. Within this conceptual framework, ICT capacity building programmes are perceived as the primary mechanism through which principals acquire the competencies necessary for digital leadership in modern educational systems.

A number of systematic reviews further illustrate that the development of ICT competence among school leaders often occurs through continuous professional learning structures that involve workshops, collaborative training, mentoring, and participation in technology focused leadership networks. Research examining ICT integration strategies across several countries identified professional development as one of the most influential factors that determines whether school leaders effectively implement digital technologies in educational settings (Msambwa, 2024). The analysis of fifty-four peer reviewed publications

indicated that successful ICT integration requires sustained knowledge development, institutional support, and leadership commitment to technological innovation.

Leadership strategies that strengthen ICT capacity building among principals also include the articulation of a clear digital vision and the creation of collaborative learning environments that support technology adoption. Evidence from leadership studies demonstrates that principals who actively promote digital innovation within their schools contribute significantly to teachers' technological confidence and motivation to integrate ICT into classroom practice (Zeng, 2025). Such leadership behaviours are commonly associated with transformational leadership models in which school leaders act as role models and inspire teachers to embrace technological change within educational institutions.

Institutional frameworks have also been developed internationally to guide ICT capacity development for school leaders. Digital leadership standards created by organisations such as the International Society for Technology in Education emphasise visionary leadership, digital citizenship, professional development, and systemic improvement as core competencies expected of school administrators. These frameworks have increasingly influenced training programmes for principals across different educational systems, reinforcing the belief that technology leadership forms an essential component of modern educational management (Okunlola & Naicker, 2025).

Despite the increasing availability of ICT training opportunities, variations in the level of ICT based capacity building among principals remain evident across educational contexts. Infrastructure limitations, unequal access to professional development programmes, and differences in institutional support structures continue to shape the extent to which school leaders develop digital leadership competence (Msambwa, 2024). Such disparities indicate that ICT capacity building among principals cannot be viewed as a uniform process but rather

as a context dependent development pathway shaped by policy frameworks, institutional resources, and leadership commitment to technological innovation.

The broader discourse emerging from contemporary educational research therefore reflects a growing recognition that the level of ICT based capacity building among secondary school principals represents a foundational element for technology driven school improvement. Principals who acquire digital competence through structured training and professional development often demonstrate stronger leadership capacity in managing technology integration, guiding teachers in digital pedagogy, and shaping organisational cultures that support innovation within secondary education systems (Yang et al., 2025; Thahir, 2025). In this sense, ICT capacity building is not merely an auxiliary leadership skill but a central component of effective educational leadership in the digital age.

Level of Administrative Competence of Secondary School Principal

Constant pressure on schools to deliver effective educational outcomes has increasingly shifted attention toward the administrative competence of school principals, since the ability of school leaders to coordinate human resources, manage institutional processes, and guide teachers toward collective goals remains a strong determinant of how schools function on a daily basis. Observations drawn from contemporary educational research demonstrate that administrative competence among secondary school principals is closely tied to leadership practices, managerial skills, decision making ability, financial accountability, and the capacity to coordinate educational programmes in ways that sustain school development and instructional quality. Within the wider discourse on educational management, principals are often viewed as central administrative figures whose competence determines the efficiency of organisational operations and the overall effectiveness of school management (Arhipova, Kokina, & Michaelsson, 2021). In this sense, administrative

competence is not limited to routine administrative duties but reflects a broader set of professional capabilities that shape how educational institutions are organised and managed.

Administrative competence in school leadership is frequently understood through managerial dimensions that involve conceptual, technical, and interpersonal skills. Research exploring managerial competence among school principals indicates that these competencies enable principals to formulate school visions, coordinate staff activities, and guide educational programmes toward institutional objectives (Rachmawati, Suyatno, & Santosa, 2020). Conceptual competence often reflects the ability of principals to develop strategic plans and institutional goals, while technical competence relates to the management of school operations such as supervision, scheduling, and programme implementation. Interpersonal competence reflects the ability of school leaders to maintain positive relationships with teachers, students, and community stakeholders, which often contributes to effective administrative coordination within schools.

Empirical evidence across various educational systems has continued to reinforce the central role of administrative competence in shaping school effectiveness. Bustami and Putra (2023) examined managerial competence among school principals and found that principals leading schools with higher accreditation ratings demonstrated stronger managerial competencies compared with those managing lower ranked institutions. The study, which involved 116 school principals, revealed that schools with grade A accreditation were managed by principals whose managerial competence was categorised as very high, while those leading grade B and C schools displayed competence levels categorised as high. Such findings reveal how the administrative competence of school leaders influences institutional quality and educational outcomes.

Administrative competence also involves the capacity to manage school finances responsibly, since financial management remains a critical aspect of school administration. A

study examining principals' fund management strategies across secondary schools found that effective record keeping, budgeting, and monitoring of financial expenditures were significant components of administrative effectiveness (Olaifa, Ajala, Olaifa, Medupin, & Adeoye, 2024). The investigation reported that the reliability coefficient for the instrument used in assessing financial management practices was 0.76, while the analysis revealed a significant relationship between principals' fund management strategies and administrative effectiveness. The results indicate that financial competence among school leaders contributes directly to the availability of teaching resources and the operational efficiency of educational institutions.

Administrative competence is also reflected in the way principals coordinate school based management structures and participatory decision making processes. Research examining school based management practices has highlighted the role of principals in mobilising school resources, delegating responsibilities, and coordinating collaborative decision making among teachers and school stakeholders (Darwis et al., 2023). Within these structures, principals often serve as managers who organise school programmes, supervise staff activities, and facilitate communication between different units within the school system. Such administrative roles demonstrate that the competence of school leaders is often measured through their ability to organise institutional processes and align them with broader educational goals.

Leadership studies have also highlighted the relationship between administrative competence and teacher performance. Zaman, Shehzad, and Irshadullah (2020) examined leadership competencies among secondary school principals and reported that a majority of school heads indicated that they were able to manage human resources effectively while coordinating both academic and administrative responsibilities within their schools. The study involved 377 secondary school principals and utilised statistical tools such as mean

scores and standard deviation to evaluate leadership competencies. The findings emphasise the importance of administrative competence in ensuring that teachers receive the guidance, supervision, and organisational support required for effective teaching.

Administrative competence also encompasses the ability of principals to build relationships with communities and educational stakeholders. Tadle Zaragosa and Sonsona (2021) analysed administrative performance among school principals using Fayol's management principles and found that practices related to public relations, communication, and community involvement formed key components of administrative competence. Teachers who evaluated their principals reported that school heads demonstrated above average performance in administrative practices associated with stakeholder engagement and organisational coordination. Such administrative behaviours reflect the importance of leadership practices that extend beyond internal school management to include collaboration with external partners who contribute to educational development.

The increasing complexity of educational environments has also intensified expectations regarding the administrative capabilities of school principals. Educational reforms, policy changes, and accountability frameworks require school leaders to demonstrate high levels of administrative competence across multiple domains including planning, supervision, staff development, and institutional evaluation (Arjanto, 2022). In many educational systems, principals are expected to function simultaneously as managers, instructional leaders, and organisational coordinators who oversee diverse administrative responsibilities within schools.

Evidence drawn from studies examining school based management compliance has also highlighted persistent gaps in administrative competence among some school leaders. Alvarado, Sy, and Adriatico (2019) observed that certain school administrators faced challenges in implementing management programmes due to insufficient training in

leadership and administrative skills. Their analysis revealed that gaps in managerial competence sometimes created discrepancies between policy expectations and actual school management practices. Such observations reinforce the view that continuous professional development remains essential for strengthening administrative competence among school principals.

Administrative competence also shapes how principals manage staff development and instructional supervision within schools. Ayumi and Nasution (2025) emphasised that principals who actively supervise classroom practices, encourage teacher participation in decision making, and organise professional development activities often contribute to improved instructional performance among teachers. Leadership behaviours associated with supervision, monitoring, and mentorship illustrate how administrative competence directly influences the professional growth of teaching staff.

Within the broader context of educational leadership, administrative competence among secondary school principals therefore represents a central element in the management of educational institutions. Effective principals are often those who combine managerial expertise, financial accountability, human resource coordination, and strategic decision making to guide schools toward improved organisational performance and educational quality (Arhipova et al., 2021; Bustami & Putra, 2023). These capabilities allow principals to organise school systems effectively, respond to administrative challenges, and maintain stable learning environments that support both teachers and students within the educational process.

ICT-Based Capacity Building and Principals' Administrative Competence

Growing demands for efficient school management have increasingly drawn attention to how digital competence and technology oriented training influence the administrative capacity of school leaders. Educational systems across the world have gradually shifted toward digital governance structures in which school records, communication channels,

planning processes, and monitoring systems rely heavily on information and communication technology. Within such environments, the administrative competence of secondary school principals becomes closely linked with their exposure to ICT based capacity building initiatives, since the ability to manage digital tools and information systems has become an important dimension of modern educational leadership (Ismailova, 2025). In many schools, administrative tasks that previously relied on manual procedures are now carried out through electronic platforms, which makes ICT related training a crucial component in strengthening the managerial abilities of principals responsible for coordinating institutional operations.

The growing integration of ICT into school administration has been widely recognised as a mechanism that enhances the effectiveness of planning, communication, and organisational coordination within educational institutions. Evidence from research on ICT integration in school administration demonstrates that access to digital tools such as databases, email systems, and internet based management platforms enables principals to manage time more efficiently and monitor school operations more effectively (Alruhaili, Khalaf, Ali, Bekir, & Alhosni, 2025). A study involving 200 principals across four educational regions reported that the use of ICT tools significantly improved administrative planning, record keeping, and monitoring of school activities. These outcomes highlight how ICT related training and infrastructure can strengthen administrative competence by enabling school leaders to coordinate complex tasks more efficiently.

Administrative competence among principals has also been linked with participation in ICT training programmes that strengthen digital literacy and managerial capabilities. An investigation examining ICT training among public school principals found that participants in structured ICT courses reported improvements in computer related skills relevant to their administrative responsibilities (El Takach, Ayoubi, & Kibbi, 2018). In that training programme, 204 school principals attended a three-month ICT course, and 192 completed

evaluation questionnaires after the training. The majority of participants acknowledged that the programme enhanced their technological competence, enabling them to use digital tools more effectively in routine administrative work such as communication, documentation, and data management. These observations reinforce the view that ICT based capacity development plays a significant role in shaping the administrative efficiency of school leaders.

Capacity building in ICT also supports the broader leadership functions of principals by strengthening their ability to guide institutional transformation within digitally evolving educational systems. Yang, Alias, and Mohd Nor (2025) analysed twenty six studies examining technological leadership among principals and emphasised that professional development programmes focusing on ICT competence help school leaders articulate digital visions, allocate resources for technological initiatives, and support staff training in digital learning practices. These leadership behaviours represent an expansion of administrative competence beyond traditional managerial duties, as principals who possess digital competence often coordinate organisational change more effectively while guiding schools through technological transformation.

The influence of ICT capacity building on administrative competence can also be observed through its role in facilitating data driven management processes. Digital platforms used in school management allow principals to collect, analyse, and store institutional data related to student performance, staff activities, and resource allocation. Research examining technology management practices among school administrators found that training programmes focusing on digital record management, learning management systems, and collaborative online platforms significantly improved operational efficiency within schools (Dela Cruz & Paglinawan, 2025). Administrators participating in such training reported improvements in data processing, communication efficiency, and institutional coordination,

demonstrating how ICT based professional development strengthens administrative capacity within educational institutions.

Studies examining ICT integration within school systems have also identified leadership support and technological competence as major factors influencing successful adoption of digital practices. In research conducted within secondary schools in Kenya, the relationship between school management support and ICT integration produced a positive correlation coefficient of 0.560, indicating that administrative leadership significantly influenced the adoption of technology in teaching and management processes (Ndiritu, Gichimu, & Ndiritu, 2018). These findings illustrate how principals who possess stronger technological competence often provide better guidance for technology integration within their institutions, thereby enhancing administrative coordination and instructional innovation.

Institutional capacity building initiatives also play an important role in strengthening the managerial competence of principals in relation to digital governance systems. Njuguna, Kipkoech, and Wanami (2022) investigated the effect of ICT infrastructure management on the implementation of educational policies in public secondary schools and reported that ICT resources accounted for 20.6 percent of the variation in policy implementation within the sampled schools. Regression analysis further indicated a statistically significant influence of ICT infrastructure on the implementation of teacher appraisal systems. These results highlight how the administrative competence of school leaders becomes increasingly dependent on their ability to manage digital systems that support institutional accountability and monitoring.

ICT capacity development among school leaders has also been associated with broader improvements in institutional planning and management practices. Research examining digitalisation initiatives within schools has shown that principals who actively coordinate technology based projects engage in planning processes, resource mobilisation, staff training, and monitoring activities that reflect strong managerial competence (Tejawati,

Kusumaningsih, & Soedjono, 2025). Within such contexts, ICT capacity building encourages principals to adopt collaborative leadership approaches that involve teachers in digital transformation processes, thereby strengthening administrative coordination and organisational adaptability.

Challenges encountered in administrative management within schools also demonstrate the importance of ICT related professional development for educational leaders. Saragih, Rahmadani, Silalahi, Gurusinga, and Harahap (2025) reported that limited digital proficiency among administrative staff and school leaders often contributes to inefficiencies in school operations and decision making processes. Institutions that organised internal ICT training workshops and adopted quality management practices experienced improvements in administrative efficiency and stakeholder satisfaction, highlighting the significance of capacity building initiatives in addressing management challenges within educational organisations.

The interaction between ICT capacity development and administrative competence also extends to policy implementation and institutional accountability systems. Samrat, Muhammad, and Adnan (2021) observed that effective school administration requires principals to manage financial records, supervise staff activities, coordinate school programmes, and maintain institutional documentation. In contemporary educational environments where many of these processes are managed digitally, ICT competence becomes an essential administrative skill that supports accurate record keeping, communication with educational authorities, and coordination of school activities.

These perspectives illustrate that ICT based capacity building has gradually become an important factor shaping the administrative competence of secondary school principals. Exposure to digital training programmes, access to technological infrastructure, and participation in ICT focused professional development initiatives provide principals with the

tools required to manage modern educational institutions effectively. Through improved digital literacy, school leaders gain the capacity to coordinate institutional processes, support policy implementation, and guide organisational transformation within increasingly technology driven educational environments (Yang et al., 2025; Alruhaili et al., 2025). In this sense, ICT capacity building functions as a key pathway through which principals strengthen their administrative competence while adapting to the evolving demands of contemporary school management.

ICT-Based Capacity Building and Administrative Competence of the Principal Based on Sex

Digital transformation in school administration has increasingly redefined the competence expected of educational leaders, particularly as institutional coordination, information management, communication systems, and organisational monitoring increasingly rely on digital platforms. Administrative leadership within contemporary secondary schools therefore extends beyond conventional managerial functions into the capacity to operate effectively within technology mediated environments where information systems support planning, documentation, and institutional decision making. Engagement with ICT capacity building programmes forms a major pathway through which principals develop the technological knowledge required for these responsibilities, strengthening their ability to coordinate administrative processes and sustain effective leadership within digitally oriented school environments (Okunlola & Naicker, 2025). Consideration of sex within this context arises from the broader discourse surrounding access to professional development opportunities and whether male and female principals experience different levels of exposure to digital training initiatives that contribute to administrative competence.

Digital leadership competence among school principals reflects the integration of managerial judgement with technological literacy, enabling leaders to guide institutional

communication, supervise teaching processes, and coordinate information systems that support organisational functioning. Analysis of digital leadership competencies among secondary school principals revealed that leadership performance across several domains, including visionary leadership, digital learning culture, and professional development support, demonstrated strong internal reliability with coefficients ranging from 0.85 to 0.91 (Okunlola & Naicker, 2025). Female principals obtained slightly higher digital leadership scores than male principals, yet statistical analysis did not identify gender as a significant determinant of overall competence within the digital leadership standards adopted in the assessment. Okunlola and Naicker (2025) therefore situate digital leadership competence within broader institutional conditions such as professional training and access to technological resources rather than demographic characteristics alone.

Technology leadership within schools also depends on sustained professional development structures that enable administrators to acquire the competencies necessary for integrating digital systems into school management. Raman and Thannimalai (2019) emphasise that professional development functions as a key predictor of technology integration within school environments, particularly when leadership structures promote digital learning cultures and institutional support for technological adoption. Their quantitative analysis involving ninety respondents from secondary schools demonstrated that professional development contributed significantly to the integration of technology in school administration, while gender did not exert a statistically meaningful influence on leadership effectiveness related to ICT use. Leadership competence in technology supported schools therefore appears closely associated with the availability of training opportunities that strengthen principals' ability to coordinate digital resources and guide institutional practices.

Broader discussions concerning ICT competence across educational professionals reveal that variations in digital skills may occasionally appear across gender groups, although

these differences often reflect unequal exposure to training rather than inherent capability distinctions. Analysis of ICT competence among 1698 pre service teachers in Vietnam identified gender related variation in some domains of ICT application, particularly within aspects associated with organisational use of digital tools and administrative coordination (Thao et al., 2024). The analysis highlights that competence in applying ICT for educational administration depends strongly on the depth of professional preparation and technological experience available to educational personnel, reinforcing the importance of continuous training in strengthening digital competence across leadership roles.

Patterns observed within professional training contexts further demonstrate that technological confidence and perceived competence play stronger roles than gender in shaping ICT integration within educational practice. Pozas and Letzel (2021) identify technological attitudes and perceived digital competence as central predictors of future ICT integration among educational practitioners. Although male participants expressed marginally more positive attitudes toward ICT use, gender did not significantly influence the intention to integrate technology within professional practice. The implication within educational leadership contexts lies in the recognition that confidence and competence in digital environments emerge primarily from training exposure and technological familiarity.

Comparable patterns appear within research exploring ICT competence among educational support personnel. In a study involving one hundred guidance and counselling officers in Abuja, equal representation of male and female participants enabled the examination of gender related differences in computer competence across several domains, including basic operations and software application (Ihedioha & Mankilik, 2023). Statistical analysis using chi square procedures did not reveal significant differences between male and female respondents in their ICT competence. Approximately seventy two percent of the participants reported limited experience in computer related tasks, illustrating that insufficient

training opportunities rather than gender constituted the primary constraint affecting digital competence among educational professionals.

Leadership preparation within rapidly evolving technological environments has also drawn attention to the professional development needs of school leaders. Letuma, Awodiji, and Naicker (2023) emphasise the importance of leadership development programmes that equip school leaders with technological knowledge, information management skills, and collaborative communication strategies aligned with the demands of the Fourth Industrial Revolution. Analysis of responses from five hundred and five members of school management teams revealed no significant gender differences in technological knowledge among school leaders. Leadership development initiatives directed toward communication, collaboration, and organisational problem solving were identified as areas that could further strengthen leadership capacity, particularly among female administrators seeking to expand their digital leadership competence.

The development of digital competence within educational organisations also depends on the structure and quality of ICT training programmes available to educators and administrators. Gallardo Montes, Rodríguez Fuentes, and Caurcel Cara (2023) demonstrate that engagement in ICT training programmes significantly influences the frequency with which digital tools are applied in professional practice. Their analysis involving 310 educators indicates that technological training establishes a foundation for the development of digital competence, although competence levels vary according to professional roles and access to training opportunities. Such findings highlight the importance of institutional frameworks that ensure equitable access to ICT capacity building initiatives across leadership groups.

Leadership attitudes toward technology further influence the capacity of principals to guide ICT integration within schools. Nhlumayo (2024) emphasises that principals'

engagement with ICT workshops and professional training initiatives strengthens their ability to lead digital transformation within school environments. Leadership strategies adopted within rural primary schools demonstrated that exposure to ICT training shaped principals' confidence in integrating digital technologies into administrative and instructional processes. The relationship between professional exposure and leadership competence reinforces the argument that ICT capacity building constitutes a central component of effective school administration.

Educational policy discussions concerning ICT integration also reveal how limitations in training opportunities constrain the effective utilisation of technological resources within school systems. Prince, Fuseini, and Appiah (2019) describe conditions in which educational institutions possessed technological equipment yet experienced difficulty integrating these resources into administrative and instructional practices due to limited technical knowledge among staff. Training deficiencies rather than demographic factors therefore emerge as the principal constraint affecting technological competence within school administration.

The synthesis emerging from these perspectives situates ICT capacity building as a decisive factor shaping the administrative competence of school principals operating within digitally oriented educational environments. Participation in professional development programmes, engagement with ICT training workshops, and access to institutional technological infrastructure collectively strengthen the capacity of principals to coordinate digital communication systems, manage information resources, and support technology integrated teaching practices. Evidence drawn from multiple educational contexts indicates that male and female principals demonstrate comparable levels of ICT competence when provided with similar opportunities for professional training and technological engagement (Okunlola & Naicker, 2025; Raman & Thannimalai, 2019). Administrative competence

within ICT supported school environments therefore reflects the broader conditions that shape access to professional development rather than the influence of sex alone.

ICT-Based Capacity Building and Administrative Competence of the Principal Based on Qualification of the Principal

Expectations surrounding administrative competence in contemporary schools increasingly revolve around the capacity of principals to operate within digitally mediated administrative systems, and this expectation becomes more compelling when one considers that principals' educational and professional qualifications often shape the depth of their engagement with ICT based leadership practices. Academic preparation tends to expose school leaders to research driven knowledge about digital administration, data management, and technology enabled supervision, thereby strengthening the relationship between educational qualification and ICT based capacity building. Evidence from recent scholarship indicates that principals with advanced professional training often demonstrate greater familiarity with digital tools used for school management, which in turn strengthens their administrative efficiency and decision making processes in school governance (Ismailova, 2025). Research on ICT competence among school leaders explains that mastery of digital technologies forms a central component of professional competence because administrative leadership now involves information management, digital communication, and technology supported monitoring systems, functions that demand both conceptual knowledge and practical ICT literacy usually acquired through higher academic preparation (Ismailova, 2025).

Educational qualification appears closely connected to the ability of principals to participate effectively in ICT capacity building initiatives and professional development programmes. The digital transformation occurring in education systems has expanded the responsibilities of school administrators beyond traditional management roles, creating

expectations that principals possess both pedagogical leadership competence and digital leadership expertise. In many school systems, principals who possess postgraduate qualifications in education administration or educational technology display stronger capabilities in guiding ICT integration and supporting teachers' digital practices, a situation attributed to the exposure gained during advanced academic training programmes. Evidence shows that leadership competence combined with ICT mastery contributes significantly to professional competence within schools, accounting for about 43.6 percent of the variance in teacher professional competence when school leadership, organisational culture, and ICT proficiency operate together (Mursalina, Egar, & Abdullah, 2025). Such outcomes reveal how academic qualifications equip principals with the conceptual knowledge necessary to design and sustain ICT capacity building programmes that enhance both administrative processes and instructional support systems.

The relationship between qualification and ICT competence also emerges through principals' operational use of technology for school administration. Studies examining computer application skills among school leaders reveal that principals who possess formal training in ICT or related educational qualifications demonstrate significantly higher use of computers in administrative duties such as record keeping, communication, and data management (Njathi, Ngaruiya, & Maithya, 2018). In that investigation involving over two hundred principals, the possession of computer application skills was strongly associated with the extent to which digital tools were used for school management activities, indicating that knowledge acquired through professional preparation influences the administrative behaviour of school leaders. Such findings highlight how educational qualification becomes a platform through which principals acquire technological competence that improves their ability to coordinate school operations through ICT systems.

ICT capacity building within schools also depends on the digital leadership orientation of principals, and this orientation is often shaped by academic exposure to leadership theories and technological frameworks. Research examining principals' digital leadership indicates a moderate yet significant relationship between the digital leadership competence of principals and the digital competence of teachers, with correlation statistics showing $r = 0.41$ and statistical significance at $p < 0.05$ (Relationship Between Principals' Digital Leadership and Teachers' Digital Competency in Klang District Secondary Schools, 2023). This outcome implies that when principals possess sufficient knowledge of digital administration and ICT leadership, they become capable of influencing school wide technology adoption. Academic qualification tends to strengthen this leadership orientation since many postgraduate educational programmes incorporate modules on educational technology, digital transformation in schools, and ICT policy implementation.

Administrative competence in ICT driven school environments also requires the capacity to plan, organise, and supervise digital initiatives. Strategic planning competence among principals has been identified as an important leadership attribute that enhances school performance through effective integration of technological systems in school management (Sila & Njihia, 2024). Principals who possess higher academic qualifications often demonstrate stronger strategic planning competence because their training exposes them to policy analysis, resource management, and technology planning frameworks. Such competencies enable them to organise ICT capacity building programmes for teachers, allocate digital resources effectively, and create supportive organisational structures for ICT integration within school administration.

Leadership scholarship also portrays principals as central actors in building the institutional conditions necessary for ICT adoption and capacity development within schools. Evidence from research on ICT integration shows that school management support correlates

positively with the use of digital technologies in teaching and administration, with correlation coefficients reaching 0.560 between managerial support and ICT integration practices (Ndiritu, Gichimu, & Ndiritu, 2018). This relationship demonstrates how principals who possess adequate knowledge and competence in ICT are able to mobilise resources and provide professional support that encourages technology adoption across the school environment. Principals with higher educational qualifications frequently exhibit stronger confidence in implementing such innovations because they possess theoretical understanding of organisational change and educational leadership.

Exposure to ICT training programmes also appears to influence principals' administrative competence and technology utilisation. A study involving 192 school principals participating in an ICT training programme reported that the training significantly improved principals' computer skills and enhanced their capacity to apply digital tools in administrative tasks (El Takach, Ayoubi, & Kibbi, 2018). The improvement in administrative competence following structured ICT training indicates that principals who possess higher qualifications or who engage in continuous professional learning are better positioned to utilise digital technologies for school management.

Institutional support for ICT integration also depends on principals' leadership attitudes and competencies. Investigations into leadership practices show that innovative leadership among school administrators correlates positively with ICT integration levels in schools, producing correlation statistics of $r = 0.441$ with statistical significance below the 0.001 level (Yeong & Hamzah, 2019). Such outcomes reinforce the idea that academic qualification plays a supportive role in shaping principals' leadership dispositions because higher educational attainment often develops critical thinking skills and openness to technological innovation.

Scholarly synthesis of leadership and ICT integration research also emphasises that technology oriented leadership behaviours such as articulating a digital vision, allocating ICT resources, modelling technology use, and organising professional development opportunities form the foundation for sustainable ICT capacity building within schools (Yang, Alias, & Mohd Nor, 2025). Principals who possess higher academic qualifications tend to demonstrate these behaviours more consistently because their training exposes them to contemporary leadership frameworks that emphasise innovation, digital transformation, and collaborative professional learning.

In many contexts, barriers to ICT integration such as inadequate infrastructure, limited professional development opportunities, and insufficient administrative support continue to challenge school leaders. Reports from Kenyan schools reveal that more than 57 percent of staff lacked adequate ICT training while over 61 percent of schools lacked technical support systems for digital implementation (Kukali, Kawasonga, & Rabari, 2018). Principals who possess advanced academic preparation often display stronger capacity to navigate such constraints through strategic resource mobilisation, partnerships, and professional development initiatives, reinforcing the view that educational qualification strengthens administrative competence in ICT driven environments.

School leadership scholarship also portrays principals as facilitators of professional growth among teachers through structured supervision and participation in seminars and training activities that enhance ICT competence within the school community (Setiawan, Widayatsih, & Pahlawan, 2024). Such professional development practices illustrate how principals with strong academic preparation become active promoters of ICT based capacity building, thereby improving both administrative competence and instructional innovation across the school system.

ICT-Based Capacity Building and Administrative Competence of the Principal Based on Experience

Digital transformation within school administration has continued to place significant expectations on principals to possess both technological competence and leadership capability that can guide instructional and organisational improvement within schools. The demands associated with these responsibilities often interact strongly with the professional experience accumulated by principals across years of teaching, administrative practice, and professional learning engagements. In this regard, professional experience is increasingly perceived as a factor that shapes how school leaders acquire ICT related skills, interpret digital reforms, and apply technological resources in ways that strengthen administrative competence within schools. Evidence across recent academic literature indicates that ICT based capacity building does not occur in isolation from experience but develops gradually through leadership exposure, professional development participation, and reflective engagement with digital systems within school management processes (Caneva & Pulfrey, 2023; Gerick et al., 2024).

The administrative responsibilities of school principals have expanded considerably in the digital era, requiring leaders to coordinate communication systems, manage digital documentation, monitor instructional processes through electronic platforms, and guide teachers in the integration of ICT within classroom practices. Digital competence among principals therefore becomes a crucial element of administrative effectiveness since leadership actions influence the adoption of technological practices within schools. Empirical discussions have emphasised that principals who possess strong ICT competence demonstrate improved organisational coordination and faster administrative decision making due to the efficiency of digital information systems (Koniari & Raftoulis, 2023). In their investigation involving 174 school principals, digital competence was found to improve administrative

performance by reducing documentation workload and enabling efficient management of school information through digital platforms, highlighting the administrative value of ICT competence within school leadership structures (Koniari & Raftoulis, 2023).

Professional experience is widely acknowledged as an important element influencing how principals develop ICT related administrative capabilities. Years of service within educational institutions often expose school leaders to multiple reforms, technological transitions, and management scenarios which collectively contribute to the development of leadership judgement and strategic thinking. In examining digital capacity building within schools, Caneva and Pulfrey (2023) reported that leadership experience shapes how principals interpret digital education reforms and design strategies that strengthen technology adoption within their institutions. Their analysis of school digital capacity emphasised that leadership competence in technology integration is strengthened through continuous professional development and experience driven engagement with digital tools within administrative practice (Caneva & Pulfrey, 2023).

Leadership experience also influences principals' ability to create institutional cultures that encourage ICT utilisation among teachers and administrative staff. Evidence indicates that principals with extensive professional exposure are more capable of organising professional learning activities and capacity building programmes that support ICT integration in schools. A systematic review examining principals' technological leadership revealed that leadership behaviours such as organising training programmes, modelling technology usage, and allocating digital resources play a significant role in strengthening ICT integration among teachers and improving overall school performance (Yang, Alias, & Mohd Nor, 2025). The study emphasised that technology leadership functions as a mediating factor between capacity building initiatives and ICT adoption within schools, indicating that

experienced principals often demonstrate stronger capability in coordinating these processes (Yang et al., 2025).

The relationship between leadership experience and ICT capacity building is also reflected in how principals influence teachers' professional digital competence. Research examining the relationship between principal leadership practices and teacher ICT competence reported that instructional supervision by school leaders contributes significantly to teachers' digital skills development, explaining about 56.2 percent of the variation in teachers' ICT competence within the examined schools (Rasdiana, Wiyono, & Imron, 2024). These findings highlight that leadership guidance combined with experience based understanding of instructional supervision can strengthen ICT capacity building processes within educational institutions.

Digital leadership has equally been linked to the broader development of teacher competence and collaborative professional culture within schools. Studies exploring the relationship between digital leadership and teacher competence reveal that principals play a central role in shaping school digital culture and motivating teachers to adopt digital instructional practices. Evidence from structural modelling research involving 257 teachers demonstrated that principal technology leadership directly influences teacher professional digital competence and contributes to the development of collaborative digital learning environments within schools (Luo et al., 2024). Such findings demonstrate that leadership effectiveness within ICT integration is strengthened when principals possess the experience required to guide technological innovation across teaching and administrative activities.

Professional exposure also contributes to principals' confidence in managing digital transformation processes within schools. Leadership experience often influences principals' attitudes towards ICT adoption and their willingness to engage with emerging technological systems. Investigations conducted in rural schools revealed that principals' leadership

strategies for ICT integration were strongly influenced by their exposure to ICT training programmes and professional development workshops (Nhlumayo, 2024). These findings illustrate that experience derived from training and practice enhances principals' readiness to lead technology driven educational reforms.

School leadership in the digital era also requires principals to act as role models in the utilisation of ICT tools within administrative management and communication systems. Research analysing school management practices across several countries indicated that principals' use of ICT for organisational tasks serves as a catalyst for wider digital adoption within schools, as teachers often emulate leadership practices observed within administrative processes (Gerick et al., 2024). The capacity of principals to demonstrate effective ICT usage within school management activities therefore strengthens the broader digital competence of the school community.

The integration of digital technologies into educational leadership has been accelerated by recent global events which have emphasised the importance of technology supported school management. Leadership literature indicates that digital technologies have significantly transformed leadership roles by enabling virtual communication, remote monitoring of school activities, and improved coordination of teaching processes (Borde, Arora, & Kakoty, 2024). Within this context, principals who possess extensive professional experience are often better positioned to adapt to technological change since their leadership practice has evolved through different stages of educational reform.

Technological competence within school leadership is therefore increasingly regarded as a core component of professional competence among principals. Discussions within educational leadership literature emphasise that ICT competence allows school leaders to access information effectively, coordinate institutional resources, and guide staff members towards the adoption of innovative teaching practices (Ismailova, 2025). This perspective

aligns with the broader understanding that leadership effectiveness in contemporary schools depends largely on the ability of principals to integrate technological tools into administrative processes and educational decision making.

In many educational systems, ICT based capacity building programmes have been introduced to strengthen principals' administrative competence and leadership effectiveness. Evidence from technology adoption studies indicates that digital tools such as online communication platforms, virtual meeting applications, and digital documentation systems have significantly enhanced school administration by improving communication and performance monitoring (Okunlola, 2024). Within the examined sample of 227 school leaders, 58.2 percent reported receiving moderate levels of professional development in digital technologies, indicating the growing emphasis placed on ICT capacity building within school leadership development programmes (Okunlola, 2024).

Experience therefore remains a crucial dimension within discussions of ICT based capacity building and administrative competence among school principals. Leadership exposure across years of service, combined with continuous professional development and engagement with technological systems, contributes to the gradual development of digital leadership capability. Such experience driven competence allows principals to manage administrative responsibilities more efficiently, guide teachers in adopting digital instructional practices, and sustain the integration of ICT within school management systems.

Summary of Reviewed Literature

ICT-based capacity building has been widely recognized as an important factor in strengthening the administrative competence of secondary school principals in contemporary educational systems. Studies show that the level of ICT capacity among principals varies across educational contexts, depending largely on access to professional development, digital infrastructure, and institutional support. Evidence suggests that principals who participate in

structured ICT training programmes demonstrate improved digital leadership, better management of school information systems, and stronger coordination of teaching and administrative activities. Research also indicates that ICT competence enables principals to improve communication, record keeping, planning, and data-driven decision-making, thereby strengthening overall school administration.

Empirical findings further reveal a positive relationship between ICT-based capacity building and administrative competence, as principals with higher digital literacy tend to perform administrative duties more efficiently and support technology integration within schools. In relation to demographic variables, several studies report that sex does not significantly influence ICT competence or administrative effectiveness when equal training opportunities are available. Similarly, principals' academic qualifications and professional experience have been found to influence ICT adoption and leadership competence, with higher qualifications and extensive leadership experience often associated with better administrative performance and stronger capacity to implement ICT initiatives. This highlights ICT capacity building as a critical factor in strengthening school leadership and improving administrative effectiveness in contemporary secondary schools.

CHAPTER THREE

METHODOLOGY

This chapter will present the procedures that will be adopted for conducting the study under the following subheadings: research design, population of the study, sample and sampling procedure, research instrument, validity of the instrument, reliability of the instrument, method of data collection, and method of data analysis.

Research Design

The study will adopt a correlational descriptive survey design. This design was appropriate because it sought to establish the extent of relationship between ICT-based capacity-building activities (ICT training and professional development opportunities) and the administrative competence of secondary school principals. The design will allow the collection of data from a representative sample without manipulation of any variable.

Population of the Study

The population of this study will comprise of all 131 public senior secondary school principals in Edo South Senatorial District of Edo State. Edo South Senatorial District consists of seven (7) Local Government Areas, namely Oredo, Egor, Ikpoba-Okha, Orhionmwon, Uhunmwonde, Ovia North-East, and Ovia South-West (Source: Edo State Ministry of Education).

According to records obtained from the Edo State Ministry of Education (2025), there are 47 public senior secondary school principals across Oredo, Ikpoba-Okha, and Egor Local Government Areas.

Sample and Sampling Procedure

A sample of 24 principals, representing approximately 51.1% of the total population of 47 principals, will be selected for the study. A multistage sampling technique will be

adopted to ensure a systematic and representative selection of participants across the study area.

Stage 1: At the first stage, three (3) Local Government Areas were randomly selected from the seven Local Government Areas that make up Edo South Senatorial District. The selection was carried out through balloting, in which each of the seven Local Government Areas — Oredo, Egor, Ikpoba-Okha, Orhionmwon, Uhunmwonde, Ovia North-East, and Ovia South-West — was assigned a separate slip and placed in a container. Three (3) slips were drawn at random, and the Local Government Areas of Oredo, Ikpoba-Okha, and Egor were selected.

Stage 2: At the second stage, the total number of public secondary schools in the three selected Local Government Areas were purposively selected. All public secondary schools within Oredo, Ikpoba-Okha, and Egor Local Government Areas were included at this stage, given that the study focuses specifically on public secondary school administration within these areas.

Stage 3: At the third stage, the total number of principals in the selected schools were also purposively selected. Since each public secondary school has one principal, the principals of all the selected schools in the three Local Government Areas constituted the respondents for the study, giving a total sample of 47 principals.

The sample size is considered adequate to ensure representativeness while making the data collection process manageable.

Sample Distribution of Principals by Local Government Area

Local Government Area	Population of Principals	Sampled Principals (50%)
Oredo	13	7
Ikpoba-Okha	21	10
Egor	13	7
Total	47	24

This sampling approach will ensure that principals from both Local Government Areas are adequately represented in the study.

Research Instrument

The instrument in this study is a structured questionnaire titled ICT-Based Capacity-Building and Administrative Competence Questionnaire (ICBACQ). The questionnaire will be divided into three sections. Section A will focus on the demographic information of the respondents. It will include items that seek information on the respondents' sex, educational qualification, and years of administrative experience as a school principal.

Section B will contain items that measure ICT-based capacity-building of secondary school principals. The items in this section will assess principals' ICT skills, participation in ICT training and professional development programmes, availability of ICT facilities such as computers and internet services, and the extent to which ICT tools are used in performing administrative tasks in schools.

Section C will consist of items designed to measure the administrative competence of secondary school principals. The items in this section will focus on key administrative responsibilities such as supervision of teachers, decision-making, communication with staff and stakeholders, record keeping, planning of school activities, coordination of staff duties, and conflict resolution within the school.

All the items in Sections B and C will be structured using a four-point Likert scale requiring respondents to indicate their level of agreement with each statement. The response options will be Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) with corresponding values of 4, 3, 2, and 1 respectively. The questionnaire will enable the researcher to obtain quantifiable data on ICT-based capacity-building and administrative competence of principals, which will be analyzed statistically to answer the research questions and test the hypotheses of the study.

Validity of the Instrument

The draft of the questionnaire will be shown to the researcher, supervisor, and other experts in the Department of Educational Management, Faculty of Education, University of Benin, for face and content validation. The experts will examine the instrument for clarity, relevance, and appropriateness in measuring the stated objectives of the study. Their comment will be inculcated into the instrument.

Reliability of the Instrument

To determine the reliability of the questionnaire, a pilot test will be conducted using 20 principals selected from secondary schools in Edo Central Senatorial District who will not be part of the main study. The responses obtained from the pilot study will be analysed using the Cronbach Alpha statistical technique to ascertain the internal consistency of the instrument.

Method of Data Collection

The researcher and two (2) research assistants will administer the instrument to ensure a high return rate. The questionnaires will be retrieved immediately after completion to minimise loss of data.

Method of Data Analysis

Data collected through the questionnaire will be analysed using both descriptive and inferential statistics. Mean and standard deviation will be used to answer research questions 1-2 on the levels of ICT-based capacity-building and administrative competence of principals. Inferential statistics will be used to test the hypotheses. Specifically, Pearson Product Moment Correlation (r) will be applied to determine the relationship between ICT-based capacity-building and administrative competence, while the t-test will examine whether significant differences exist in responses based on demographic variables. All inferential tests will be interpreted at the 0.05 level of significance.

For decision-making purposes, a criterion mean of 2.50 will be adopted. Mean scores of 2.50 and above will be interpreted as "Agreed," while scores below 2.50 will be interpreted as "Disagreed." Results will be presented in tables for clarity and ease of interpretation.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter presents the analysis, interpretation, and discussion of the data collected for the study.

Presentation of Results

Research Question 1: What is the level of ICT Based Capacity-Building of secondary school principals in Edo South Senatorial District, Edo state?

Table 1: Description of the relationship between ICT-based capacity building and principals' administrative competence in Edo South Senatorial District of Edo State.

Statement	SA n (%)	A n (%)	D n (%)	SD n (%)	Mean (X)	S.D.	Criterion Mean	Decision
ICT1. I possess the ICT skills needed to perform my administrative duties effectively.	9 (37.5)	4 (16.7)	3 (12.5)	8 (33.3)	2.58	1.32	2.50	Accepted
ICT2. I can use computer applications to carry out administrative tasks in my school.	9 (37.5)	4 (16.7)	3 (12.5)	8 (33.3)	2.58	1.32	2.50	Accepted
ICT3. I can use the internet to obtain information needed for managing my school.	9 (37.5)	4 (16.7)	4 (16.7)	7 (29.2)	2.63	1.29	2.50	Accepted
ICT4. I have received formal training on the use of ICT for school administration.	8 (33.3)	5 (20.8)	4 (16.7)	7 (29.2)	2.58	1.26	2.50	Accepted
ICT5. I attend seminars that improve my ICT skills for school management.	9 (37.5)	4 (16.7)	5 (20.8)	6 (25.0)	2.71	1.23	2.50	Accepted
ICT6. I participate in professional development programmes that enhance my ICT competence.	9 (37.5)	3 (12.5)	5 (20.8)	7 (29.2)	2.58	1.29	2.50	Accepted
ICT7. Computers are available in my school for administrative work.	8 (33.3)	5 (20.8)	4 (16.7)	7 (29.2)	2.58	1.26	2.50	Accepted
ICT8. Internet facilities are available in my school for administrative purposes.	11 (45.8)	3 (12.5)	1 (4.2)	9 (37.5)	2.71	1.39	2.50	Accepted
ICT9. I use ICT tools to keep school records.	10 (41.7)	4 (16.7)	3 (12.5)	7 (29.2)	2.88	1.30	2.50	Accepted
ICT10. I use ICT tools to communicate with teachers and other staff members.	9 (37.5)	5 (20.8)	5 (20.8)	5 (20.8)	2.92	1.19	2.50	Accepted
ICT11. I use ICT tools to prepare official documents.	9 (37.5)	6 (25.0)	5 (20.8)	4 (16.7)	3.00	1.12	2.50	Accepted
ICT12. ICT skills have improved my effectiveness in performing administrative duties.	9 (37.5)	1 (4.2)	6 (25.0)	8 (33.3)	2.46	1.32	2.50	Rejected
Average	9 (37.3)	4 (16.9)	4 (16.7)	7 (29.1)	2.69	1.27	2.50	Accepted

Source: Authors| Fieldwork (2026)

Table 1 presents the responses of principals on ICT-based capacity building in Edo South Senatorial District of Edo State. The findings reveal that 11 out of the 12 items recorded mean scores above the criterion mean of 2.50, with mean values ranging from 2.58 to 3.00, indicating that the respondents generally agreed that they possess ICT skills, utilize ICT tools, and have access to ICT facilities that support effective school administration. The highest mean score of 3.00 was obtained for ICT11 which showed a high level of agreement that principals use ICT tools to prepare official documents. However, ICT12 recorded a mean score of 2.46, which is below the criterion mean of 2.50, indicating disagreement that ICT skills have significantly improved their effectiveness in performing administrative duties.

The range of standard deviation values was from 1.12 to 1.39 which showed a moderate variation in the respondents opinions between the items. ICT11 had a relatively low standard deviation of 1.12, indicating that the opinions were more concentrated around the mean, thus resulting in a higher consistency of the respondents' answers. In comparison, the greater standard deviation of 1.39 for ICT8 shows that there was a greater range in responses to the question about the availability of internet facilities for administrative purposes.

Overall, the grand mean of 2.69, which exceeds the criterion mean of 2.50, indicates that ICT-based capacity building among principals is at an acceptable level. The average standard deviation of 1.27 indicates that there is moderate variation in the responses, which means that while respondents generally agree that ICT is available and used for school administration, there is some variation in their responses. Hence, it can be concluded that principals in Edo South Senatorial District have relatively good level of ICT based capacity that enables them to perform their administrative duties.

Research Question 2: What is the level of administrative competence of secondary school principals in Edo South Senatorial District of Edo state?

Table 2: Description of the level of administrative competence of secondary school principals in Edo South Senatorial District of Edo state.

Statement	SA n (%)	A n (%)	D n (%)	SD n (%)	Mean (X)	S.D.	Criterion Mean	Decision
AC13. I supervise teachers regularly to ensure effective teaching.	5 (20.8)	11 (45.8)	3 (12.5)	5 (20.8)	2.67	1.05	2.50	Accepted
AC14. I provide guidance to teachers to improve their instructional practices.	8 (33.3)	6 (25.0)	7 (29.2)	3 (12.5)	2.79	1.06	2.50	Accepted
AC15. I make timely decisions concerning school administration.	5 (20.8)	7 (29.2)	7 (29.2)	5 (20.8)	2.50	1.06	2.50	Accepted
AC16. I use available information when making administrative decisions.	11 (45.8)	4 (16.7)	4 (16.7)	5 (20.8)	2.88	1.23	2.50	Accepted
AC17. I communicate clearly with staff members.	7 (29.2)	5 (20.8)	10 (41.7)	2 (8.3)	2.71	1.00	2.50	Accepted
AC18. I maintain effective communication with parents and the community.	6 (25.0)	7 (29.2)	7 (29.2)	4 (16.7)	2.62	1.06	2.50	Accepted
AC19. I keep accurate school records.	4 (16.7)	10 (41.7)	5 (20.8)	5 (20.8)	2.54	1.02	2.50	Accepted
AC20. I ensure proper documentation of school activities.	3 (12.5)	9 (37.5)	7 (29.2)	5 (20.8)	2.42	0.97	2.50	Rejected
AC21. I plan school programmes effectively.	7 (29.2)	4 (16.7)	7 (29.2)	6 (25.0)	2.50	1.18	2.50	Accepted
AC22. I organise school activities to ensure smooth operation.	5 (20.8)	9 (37.5)	6 (25.0)	4 (16.7)	2.63	1.01	2.50	Accepted
AC23. I coordinate staff duties to ensure effective school management.	4 (16.7)	9 (37.5)	7 (29.2)	4 (16.7)	2.54	0.98	2.50	Accepted
AC24. I resolve conflicts among staff members effectively.	4 (16.7)	9 (37.5)	6 (25.0)	5 (20.8)	2.50	1.02	2.50	Accepted
Average	6 (25.0)	8 (31.9)	6 (25.7)	5 (17.4)	2.61	1.05	2.50	Accepted

Source: Authors| Fieldwork (2026)

Table 2 presents the responses of principals on their level of administrative competence in secondary schools in Edo South Senatorial District of Edo State. The results revealed that the mean score of 11 of the 12 items were equal to or above the criterion mean of 2.50 with means ranging from 2.50 to 2.88, suggesting that the respondents generally agreed that they have the administrative competencies needed in effective school management. There was general consensus among respondents about data-informed decision-making with the highest mean score achieved for AC16 (I use available information when making administrative decisions). The mean score on AC20 (I ensure proper documentation of school activities), however, was 2.42, lower than the criterion mean of 2.50, suggesting that there was some disagreement about this aspect of administrative competence among respondents.

The standard deviation values were between 0.97 and 1.23, which shows that the answers of the respondents varied little to moderately. The standard deviations for the items ranged from 0.97 for AC20 to 1.23 for AC16, with AC20 having the lowest and AC16 the highest. This implies that the respondents' opinions about proper documentation of school activities were relatively close together, whereas the opinions about the use of available information in administrative decision making were more spread out.

The overall grand mean of 2.61 is higher than the criterion mean of 2.50 showing that principals have an acceptable level of administrative competence. The corresponding average standard deviation of 1.05 suggests that respondents' views were fairly consistent across the items. It could therefore be inferred that principals in Edo South Senatorial District exhibit good administrative skills in some of the areas of responsibility which include supervision, decision making, communication, planning, coordination and conflict management

Research Question 3: What is the relationship between ICT-based capacity building and principals' administrative competence in Edo South Senatorial District of Edo State?

Table 3: Hypothesis Test (1) Description of the relationship between ICT-based capacity building and principals' administrative competence in Edo South Senatorial District of Edo State.

Variables	N	Pearson r	P-value(sig.)	Remark
ICT AC	24	.748**	.000	Significance
Level of significance = 0.05				

Source: Authors| Fieldwork (2026)

Table 3 shows the outcome of the Pearson Product Moment Correlation analysis carried out to find the relationship between the two variables of the study: ICT-based capacity building and principals' administrative competence in Edo South Senatorial District of Edo State. The result reveals that there is a strong positive correlation between ICT-based capacity building and principals' administrative competence with the Pearson correlation coefficient ($r = 0.748$). This means that the more principals' capacity building is enhanced through the use of ICTs, the more their administrative competence is enhanced.

The result also shows that the p-value obtained was 0.000 which is smaller than the level of significance ($p < 0.05$). Thus, the null hypothesis that there is no significant relationship between the capacity building using ICT and the competence of principals is rejected.

From this finding, it can be concluded that there is a strong and statistically significant positive relationship between ICT based capacity building and principals' administrative competence in Edo South Senatorial District of Edo State. This implies that the principals who have higher capacity building in ICT are more likely to show higher administrative competence.

Research Question 4: What is the relationship between ICT-based capacity building and principals' administrative competence in secondary schools in Edo South Senatorial District based on Sex of the Principal?

Table 4: Hypothesis Test (2) Description of the relationship between ICT-based capacity building and principals' administrative competence in secondary schools in Edo South Senatorial District based on Sex of the Principal.

Group	N	r	t-cal	Pvalue	decision
Female	9				
		.556	-.358	.005	Significant
Male	15				

Source: Authors| Fieldwork (2026)

Table 4 presents the result of the hypothesis test examining the relationship between ICT-based capacity building and principals' administrative competence based on the sex of the principal in secondary schools in Edo South Senatorial District of Edo State. The result reveals that there is a moderate positive relationship between principals' administrative competence and the use of ICT-based capacity building among the respondents as revealed by the correlation coefficient (r) of 0.556.

The table also shows a t-calculated of -0.358 and a p-value of 0.005. Since the p-value is less than the 0.05 level of significance ($0.005 < 0.05$), the null hypothesis stating that there is no significant relationship between ICT-based capacity building and principals' administrative competence based on sex is rejected.

This finding indicates that a significant positive relationship exists between ICT-based capacity building and principals' administrative competence based on sex. Thus, ICT-based capacity building is strongly related to the administrative competence of principals, both men and women.

The correlation coefficient is moderate, indicating that there is a corresponding improvement in administrative competence of principals in the improvement of ICT-based capacity building.

Research Question 5: What is the relationship between ICT-based capacity building and principals administrative competence in secondary schools in Edo South Senatorial District based on Qualification of the Principal?

Table 5: Hypothesis Test (3) There is no significant relationship between ICT-based capacity building and principals' administrative competence based on principal's qualification

Group	N	r	t-cal	Pvalue	decision
Bachelor	8	.682	-1.045	.000	Significant
Postgraduate	16				

Source: Authors| Fieldwork (2026)

Table 5 presents the result of the hypothesis test examining the relationship between ICT-based capacity building and principals' administrative competence based on principals' qualification in secondary schools in Edo South Senatorial District of Edo State. The result shows a correlation coefficient (r) of 0.682, indicating a strong positive relationship between ICT-based capacity building and principals' administrative competence among principals with different educational qualifications.

The table also shows a t calculated value of -1.045 and a p value of 0.000. Since the p-value is less than the 0.05 level of significance ($0.000 < 0.05$), the null hypothesis stating that there is no significant relationship between ICT-based capacity building and principals' administrative competence based on qualification is rejected.

This finding indicates that a significant positive relationship exists between ICT-based capacity building and principals' administrative competence based on principals' qualification. The

correlation coefficient is high, indicating that there is a strong relationship between the level of ICT-based capacity building and administrative competence of principals, both with Bachelor's degree and Postgraduate qualification. So, the importance of ICT-based capacity building in improving administrative competence should not be overlooked by principals' qualification.

Research Question 6: What is the relationship between ICT-based capacity building and principals administrative competence in secondary schools in Edo South Senatorial District based on Experience of the Principal?

Table 6: Hypothesis Test (4) There is no significant relationship between ICT-based capacity building and principals' administrative competence based on principal's years of experience

Group	N	r	t-cal	Pvalue	decision
10 year and above	16				
		.561	-.569	.004	Significant
below 10 years	8				

Source: Authors| Fieldwork (2026)

Table 6 presents the result of the hypothesis test examining the relationship between ICT-based capacity building and principals' administrative competence based on principals' years of experience in secondary schools in Edo South Senatorial District of Edo State. The result shows a correlation coefficient ($r = 0.561$), indicating a moderate positive relationship between ICT-based capacity building and principals' administrative competence among principals with varying years of administrative experience.

The table also shows that the t value was calculated to be -0.569 and the p value was 0.004. Since the p-value is less than the 0.05 level of significance ($0.004 < 0.05$), the null hypothesis stating that there is no significant relationship between ICT-based capacity building and principals' administrative competence based on years of experience is rejected.

This finding indicates that a significant positive relationship exists between ICT-based capacity building and principals' administrative competence based on principals' years of experience. The moderate correlation coefficient indicates that there is some relationship between increased ICT-based capacity building and increased administrative competence among experienced principals and less experienced principals. Hence, years of experience does not make any difference to the significance of capacity building through the use of ICTs to improve administrative competence. The result also suggests that the competencies of ICT make a significant contribution to effective school management, regardless of the length of service of the school principals, either ten or less years.

Research Question 7: What is the relationship between ICT-based capacity building and principals administrative competence in secondary schools in Edo South Senatorial District based on Age of the Principal?

Table 7: Hypothesis Test (5) There is no significant relationship between ICT-based capacity building and principals' administrative competence based on principal's age

Group	N	r	t-cal	P.value	decision
45 and above	15				
		.522	-.176	.009	Not Significant
below 45	9				

Source: Authors| Fieldwork (2026)

Table 7 shows the outcome of the hypothesis test to investigate the relationship between principals' age and their administrative competence in the secondary schools in Edo South Senatorial District in Edo State. The correlation coefficient is $r = 0.522$, suggesting a moderate positive correlation between the level of capacity building in principals through the use of ICT and their administrative competence by age group of principals.

The table also shows a t calculated of -0.176 and a p value of 0.009. As the p -value is less than the level of significance of 0.05, the null hypothesis, which is that there is no significant relationship between ICT-based capacity building and principals' administrative competence based on age is rejected.

The finding shows that there is a positive significant relationship between the two variables of ICT based capacity building and principals' administrative competence in terms of age. Thus, there is a high positive correlation between administrative competence of principals (45 years and above and below 45 years) and ICT-based capacity building. The moderate correlation coefficient indicates that the principals' improvement in ICT capacity building is related to improvement in the administrative competence across the different age groups.

Discussion of Findings

This section discusses the findings of the study in relation to the research questions and hypotheses formulated to investigate the relationship between ICT-based capacity building and administrative competence of public senior secondary school principals in Edo South Senatorial District of Edo State. The discussion is supported with empirical evidence from recent and relevant studies.

Level of ICT-Based Capacity Building of Secondary School Principals in Edo South Senatorial District of Edo State

The finding of the study revealed that secondary school principals in Edo South Senatorial District possessed a relatively high level of ICT-based capacity building. This implies that principals have acquired considerable knowledge, skills, and competencies in the use of information and communication technologies for school administration and management. The finding suggests that principals are increasingly embracing digital technologies for

communication, record management, decision-making, staff supervision, and other administrative responsibilities.

The finding may be attributed to the growing emphasis on digital transformation in educational administration, increased access to ICT facilities, and the rising awareness among school leaders regarding the importance of technology in effective school management. It also suggests that principals recognise ICT skill as a professional competence that must be developed for efficiency and effectiveness in administration.

The finding agrees with Yang, Alias, and Mohd Nor (2025), who reported that principals who participate in structured digital training programmes demonstrate stronger ICT-related leadership behaviours, including modelling technology use, organising teacher training, and allocating resources for digital learning initiatives. Their analysis confirmed that capacity building activities create a pathway through which principals' digital engagement positively influences school management. Similarly, Okunlola and Naicker (2025) found that many secondary school principals demonstrated digital leadership competencies consistent with recognised international standards, highlighting the growing recognition of ICT-related capacity building as a core professional requirement for school leaders.

The finding also corroborates Adedapo (2025), who reported that principals who engaged with technological tools demonstrated a positive relationship between that engagement and overall school effectiveness, confirming that ICT capacity among school principals translates into observable administrative outcomes.

Level of Administrative Competence of Secondary School Principals in Edo South Senatorial District of Edo State

The study also found that principals had a high level of administrative competence. This indicates considerable effectiveness in planning, organising, coordinating, supervising, communicating, decision-making, and managing school resources. The finding suggests that principals possess the managerial skills needed to fulfil educational objectives and ensure efficient school functioning.

Principals are key coordinating agents in schools, and their administrative competence is a central determinant of institutional effectiveness. The competence level observed could be related to their professional experience, educational background, and ongoing engagement with training and new administrative practices.

The finding corroborates Bustami and Putra (2023), who found that school principals demonstrate measurable managerial competencies that are directly associated with institutional performance, confirming that administrative competence among school leaders is both attainable and verifiable. Similarly, Orboh and Eromosele (2025) described administrative competence as a multidimensional construct covering instructional management, personnel administration, financial stewardship, student service coordination, and school-community relations, noting that effective performance across these tasks directly determines teacher morale and institutional effectiveness.

The finding also aligns with Gul (2024), who concluded that administrative competence flourishes when school leaders possess intrinsic motivation, emotional balance, and commitment to ethical governance, reinforcing that effective administration draws on both developed managerial skill and personal leadership character.

Relationship between ICT-Based Capacity Building and Principals' Administrative Competence

The study revealed that there was a positive and significant relationship between ICT-based capacity building and principals' administrative competence. This means that the more principals engage with ICT tools, training, and digital systems, the more competent they become in performing administrative functions. The null hypothesis was accordingly rejected.

This can be attributed to the direct role that ICT plays in improving key administrative processes, including effective communication, efficient record-keeping, data management, timely decision-making, and monitoring of school activities. Principals who possess stronger ICT capacity are better positioned to handle these responsibilities with greater efficiency and coordination.

This finding aligns with Alruhaili, Khalaf, Ali, Bekir, and Alhosni (2025), who reported that the use of ICT tools among principals significantly improved administrative planning, record-keeping, and monitoring of school activities. The finding also corroborates El Takach, Ayoubi, and Kibbi (2018), who found that school principals who completed a structured ICT training programme acknowledged improved technological competence in communication, documentation, and data management, confirming that ICT capacity development plays a significant role in shaping the administrative efficiency of school leaders.

The finding further aligns with Dela Cruz and Paglinawan (2025), who found that school administrators who participated in digital management training reported concrete improvements in data processing, communication, and institutional coordination, demonstrating how ICT-based professional development strengthens administrative capacity within educational institutions.

Relationship between ICT-Based Capacity Building and Principals' Administrative Competence Based on Sex

The study found that there was a significant positive relationship between ICT-based capacity building and principals' administrative competence based on sex. This means that the positive

relationship between ICT capacity building and administrative competence holds for both male and female principals. The null hypothesis was rejected.

The findings indicate that sex does not weaken or alter the direction of the relationship between ICT engagement and administrative performance. Both male and female principals show that growth in ICT capacity corresponds with growth in administrative competence, suggesting that technological proficiency has become a professional requirement that applies equally across gender lines.

This discovery is consistent with Okunlola and Naicker (2025), who found that sex was not a statistically significant determinant of digital leadership competence among school principals, and that performance across both gender groups was shaped more by access to training and professional development than by gender itself. The finding is also in line with Raman and Thannimalai (2019), who established that professional development, not gender, was the primary predictor of technology integration in school administration, with both male and female administrators benefiting equally from structured ICT engagement.

The finding further corroborates Ihedioha and Mankilik (2023), who found no significant ICT competence differences between male and female educational professionals, identifying insufficient training rather than sex as the key constraint on digital proficiency among school administrators.

Relationship between ICT-Based Capacity Building and Principals' Administrative Competence Based on Qualification

The study revealed a significant positive relationship between ICT-based capacity building and principals' administrative competence based on educational qualification. This means that the relationship between ICT capacity building and administrative competence is consistent and

significant across principals holding Bachelor's degrees as well as those with postgraduate qualifications. The null hypothesis was rejected.

The finding indicates that although formal educational qualifications provide a professional and theoretical foundation for school leadership, ICT capacity building remains a distinct and important contributor to administrative competence at every qualification level. Higher qualifications may sharpen a principal's conceptual understanding of administration, but they do not replace the practical administrative gains that come from digital training and ICT engagement.

The result corroborates Njathi, Ngaruiya, and Maithya (2018), who found that possession of computer application skills was strongly associated with the extent to which principals used digital tools for school management, irrespective of academic qualification held. The finding also aligns with Mursalina, Egar, and Abdullah (2025), who reported that ICT proficiency made an independent and significant contribution to professional competence in school leadership beyond what formal qualification alone provides.

The finding further agrees with Yang, Alias, and Mohd Nor (2025), who noted that technology leadership behaviours such as articulating a digital vision and organising staff training were consistently demonstrated by principals who engaged in structured ICT programmes, regardless of their academic credentials, confirming that ICT capacity building complements rather than duplicates the contributions of formal educational qualifications.

Relationship between ICT-Based Capacity Building and Principals' Administrative Competence Based on Years of Experience

The study found a significant positive relationship between ICT-based capacity building and principals' administrative competence based on years of experience. This means that the positive

relationship between ICT capacity building and administrative competence is present among both principals with longer years of experience and those with fewer years. The null hypothesis was rejected.

The finding indicates that years of experience in school administration does not reduce or eliminate the role that ICT capacity building plays in shaping administrative competence. Whether a principal is relatively new to the role or has spent many years in it, engaging with digital tools and training programmes remains a meaningful contributor to how effectively administrative duties are performed.

This finding corroborates Caneva and Pulfrey (2023), who found that while leadership experience shapes how principals interpret digital reforms and design technology adoption strategies, ICT capacity building still functions as the active mechanism through which digital competence develops in practice, confirming that experience and ICT engagement work together rather than one replacing the other. The result also aligns with Yang, Alias, and Mohd Nor (2025), who established that principals who received ICT-related professional development demonstrated stronger technology leadership behaviours regardless of career stage, confirming that ICT training produces administrative gains at all levels of experience.

The finding further corroborates Rasdiana, Wiyono, and Imron (2024), who found that a digitally capable principal produces measurable effects on the wider school community regardless of career stage, indicating that ICT competence carries administrative significance independent of how long a principal has been in post.

Relationship between ICT-Based Capacity Building and Principals' Administrative Competence Based on Age

The study revealed a significant positive relationship between ICT-based capacity building and principals' administrative competence based on age. This means that irrespective of age group, a higher level of ICT-based capacity building corresponds with higher administrative competence. The null hypothesis was rejected.

The finding shows that age does not constitute a barrier to benefiting from ICT capacity building in the context of school administration. Both younger and older principals demonstrate that growth in digital engagement is associated with growth in administrative performance, suggesting that the relationship between ICT training and competence is not age-dependent.

The result aligns with Jegede (2009), who noted that younger educators tend to display stronger adaptability to ICT due to greater prior exposure to digital environments, while more experienced administrators apply accumulated leadership judgement to integrate digital tools within institutional settings, meaning that ICT capacity building activates different but equally productive strengths across age groups. The finding also corroborates Bassey, Isiwele, and Ekanem (2020), who found that ICT-based professional development improved competence and engagement across professionals at different career and life stages, confirming that the benefits of digital training are not restricted by age.

The finding further aligns with Okunlola (2024), who reported that exposure to professional development in digital technologies was associated with measurable improvements in administrative digital practice across different leadership age groups, reinforcing that training access rather than age determines the strength of the relationship between ICT capacity building and administrative competence.

In general, the results of this study show that ICT-based capacity building is a significant predictor of administrative competence among school principals, regardless of sex, qualification,

years of experience, or age. The findings underscore the need for continuous ICT professional development programmes for school principals as a deliberate strategy for improving administrative effectiveness and achieving educational goals.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

This study investigated the relationship between Information and Communication Technology (ICT)-based capacity building and administrative competence of public senior secondary school principals in Edo South Senatorial District of Edo State. The study was undertaken in response to the increasing demand for effective school leadership in a rapidly evolving digital environment and the need for principals to possess adequate ICT competencies for efficient school administration.

The major findings of the study revealed that:

1. The level of ICT-based capacity building among public senior secondary school principals in Edo South Senatorial District was high.
2. The level of administrative competence among public senior secondary school principals in Edo South Senatorial District was high.
3. There was a significant positive relationship between ICT-based capacity building and principals' administrative competence.
4. There was a significant positive relationship between ICT-based capacity building and principals' administrative competence based on sex.
5. There was a significant positive relationship between ICT-based capacity building and principals' administrative competence based on qualification.
6. There was a significant positive relationship between ICT-based capacity building and principals' administrative competence based on years of experience.

7. There was a significant positive relationship between ICT-based capacity building and principals' administrative competence based on age.

The findings indicate that ICT-based capacity building plays a crucial role in enhancing the administrative competence of secondary school principals irrespective of demographic characteristics such as sex, qualification, years of experience, and age.

Conclusion

From the result of this study, it was concluded that ICT based capacity building is one of the important factors that determines the administrative competence of the public senior secondary school principals in Edo South Senatorial District of Edo State. It was found that principals who are knowledgeable and skilled with ICTs are more effective in performing administrative tasks like planning, organizing, coordinating, supervising, communicating, decision making, and managing school records and resources.

The study also found that the effectiveness of capacity building using ICTs is not limited to demographic factors. Principals who have been trained in and have ICT competencies, regardless of sex, qualification, years of experience or age, exhibit higher levels of administrative competence. This means that the ability to use ICTs is now a basic need for effective school management in the twenty first century.

Hence, it is recommended that any ongoing ICT capacity building programmes should be seen as a strategic instrument in enhancing school leadership, administrative efficiency and educational outcomes in secondary schools. The use of ICT in school administration is not an option anymore, but a must for effective and sustainable school management.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are made:

1. The Edo State Ministry of Education should organize regular ICT-based capacity-building programmes, workshops, seminars, and training sessions for secondary school principals to enhance their technological and administrative competencies.
2. School principals should continuously update their ICT knowledge and skills through professional development programmes, online training courses, and self-directed learning to keep pace with emerging technological innovations in educational administration.
3. Government and educational stakeholders should provide adequate ICT infrastructure, including computers, internet facilities, educational software, and digital management systems, to facilitate effective school administration.
4. The Teaching Service Commission and Post Primary Education Board should incorporate ICT competence as a key criterion in the appointment, promotion, and evaluation of school principals.
5. Higher institutions and teacher-training institutions should strengthen ICT-related components in educational administration programmes to prepare prospective school leaders for technology-driven school management.
6. Principals with limited ICT exposure, particularly those in rural schools, should be given priority in ICT training programmes to ensure equitable development of administrative competencies across schools.
7. School administrators should be encouraged to adopt digital platforms for communication, record management, supervision, monitoring, and decision-making processes to improve administrative effectiveness.

8. Government agencies and development partners should provide funding and technical support for ICT integration initiatives aimed at strengthening school leadership and administration.

Contribution to Knowledge

This study has contributed to knowledge in several ways:

1. The study provided empirical evidence on the level of ICT-based capacity building among public senior secondary school principals in Edo South Senatorial District of Edo State.
2. The study established the level of administrative competence of principals in public senior secondary schools within the study area.
3. The study contributed to existing literature by demonstrating a significant positive relationship between ICT-based capacity building and principals' administrative competence.
4. The study extended knowledge by examining the relationship between ICT-based capacity building and administrative competence across demographic variables such as sex, qualification, years of experience, and age.
5. The study validated the growing importance of ICT competencies as critical factors influencing effective educational administration and school leadership.
6. The findings provide useful information for policymakers, educational administrators, researchers, and other stakeholders in designing policies and programmes aimed at improving school administration through ICT integration.
7. The study adds to the body of literature on educational administration in Nigeria, particularly within the context of Edo State, where limited empirical studies have

examined ICT-based capacity building and principals' administrative competence simultaneously.

Suggestions for Further Research/Study

Based on the findings and limitations of the study, the following suggestions are made for further research:

1. A similar study should be conducted in other senatorial districts of Edo State to determine whether the findings are consistent across different geographical locations.
2. Future researchers should investigate the influence of ICT-based capacity building on other dimensions of school effectiveness such as teachers' job performance, students' academic achievement, and school productivity.
3. Comparative studies should be conducted between public and private secondary schools to determine differences in ICT-based capacity building and administrative competence among principals.
4. Further studies should examine the challenges hindering effective ICT utilization among school administrators and possible strategies for overcoming such challenges.
5. Researchers should investigate the relationship between ICT leadership practices and organizational effectiveness in secondary schools using larger samples and broader geographical coverage.
6. Future studies may employ mixed-methods or qualitative research approaches to obtain deeper insights into how ICT-based capacity building influences principals' administrative practices.

7. Similar studies should be conducted at other levels of education, such as primary schools, technical colleges, and tertiary institutions, to ascertain whether the observed relationships are applicable across educational levels.
8. Further research should explore the moderating effects of school location, availability of ICT facilities, funding, and organizational support on the relationship between ICT-based capacity building and administrative competence of school administrators.

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APPENDIX I

QUESTIONNAIRE

Department of Educational Management
Faculty of Education, University of Benin Benin City, Edo State

Dear Respondent,

I am a postgraduate student in the Department of Educational Management conducting a study titled *“ICT-Based Capacity-Building and Administrative Competence of Secondary School Principals in Edo South Senatorial District of Edo State.”*

The purpose of this study is purely academic. You are kindly requested to complete this questionnaire honestly.

All information provided will be treated with the utmost confidentiality.

Thank you for your cooperation.

Researcher

Instruction:

Please read each statement carefully and indicate the option that best describes your opinion. Kindly tick (✓) the column that corresponds with your level of agreement with each statement. There are no right or wrong answers; your honest responses are required for the success of this study. All information provided will be treated with strict confidentiality and used solely for academic purposes.

Section A: Demographic Information

1. Sex: Male ☐ Female ☐
2. Qualification: Bachelor's Degree ☐ Postgraduate Diploma ☐ Master's Degree ☐ Doctorate ☐
3. Years of Administrative Experience: 1–5years ☐ 6–10years ☐ 11–15years ☐ 16 years and above ☐

Key: SA – Strongly Agree A – Agree D – Disagree SD – Strongly Disagree

Section B: ICT-Based Capacity-Building of Secondary School Principals

S/N	Item	SA	A	D	SD
1	I possess the ICT skills needed to perform my administrative duties effectively.				
2	I can use computer applications to carry out administrative tasks in my school.				
3	I can use the internet to obtain information needed for managing my school.				
4	I have received formal training on the use of ICT for school administration.				
5	I attend seminars that improve my ICT skills for school management.				
6	I participate in professional development programmes that enhance my ICT competence.				
7	Computers are available in my school for administrative work.				

8	Internet facilities are available in my school for administrative purposes.				
9	I use ICT tools to keep school records.				
10	I use ICT tools to communicate with teachers and other staff members.				
11	I use ICT tools to prepare official documents.				
12	ICT skills have improved my effectiveness in performing administrative duties.				

Section C: Administrative Competence

S/N	Item	SA	A	D	SD
13	I supervise teachers regularly to ensure effective teaching.				
14	I provide guidance to teachers to improve their instructional practices.				
15	I make timely decisions concerning school administration.				
16	I use available information when making administrative decisions.				
17	I communicate clearly with staff members.				
18	I maintain effective communication with parents and the community.				
19	I keep accurate school records.				
20	I ensure proper documentation of school activities.				
21	I plan school programmes effectively.				
22	I organise school activities to ensure smooth operation.				
23	I coordinate staff duties to ensure effective school management.				
24	I resolve conflicts among staff members effectively.				

APPENDIX II

Sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	9	37.5	37.5	37.5
	Male	15	62.5	62.5	100.0
	Total	24	100.0	100.0	

Qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor	8	33.3	33.3	33.3
	Postgraduate	16	66.7	66.7	100.0
	Total	24	100.0	100.0	

Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10 year and above	16	66.7	66.7	66.7
	below 10	8	33.3	33.3	100.0
	Total	24	100.0	100.0	

Age_Group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	45 and above	15	62.5	62.5	62.5
	below 45	9	37.5	37.5	100.0
	Total	24	100.0	100.0	

ICT1. I possess the ICT skills needed to perform my administrative duties effectively.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	4	16.7	16.7	16.7
	D	3	12.5	12.5	29.2
	SA	9	37.5	37.5	66.7
	SD	8	33.3	33.3	100.0
	Total	24	100.0	100.0	

ICT2. I can use computer applications to carry out administrative tasks in my school.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	4	16.7	16.7	16.7
	D	3	12.5	12.5	29.2
	SA	9	37.5	37.5	66.7
	SD	8	33.3	33.3	100.0
	Total	24	100.0	100.0	

ICT3. I can use the internet to obtain information needed for managing my school.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	4	16.7	16.7	16.7
	D	4	16.7	16.7	33.3
	SA	9	37.5	37.5	70.8
	SD	7	29.2	29.2	100.0
	Total	24	100.0	100.0	

ICT4. I have received formal training on the use of ICT for school administration.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	5	20.8	20.8	20.8
	D	4	16.7	16.7	37.5
	SA	8	33.3	33.3	70.8
	SD	7	29.2	29.2	100.0
	Total	24	100.0	100.0	

ICT5. I attend seminars that improve my ICT skills for school management.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	4	16.7	16.7	16.7
	D	5	20.8	20.8	37.5
	SA	9	37.5	37.5	75.0
	SD	6	25.0	25.0	100.0
	Total	24	100.0	100.0	

ICT6. I participate in professional development programmes that enhance my ICT competence.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	3	12.5	12.5	12.5
	D	5	20.8	20.8	33.3
	SA	9	37.5	37.5	70.8
	SD	7	29.2	29.2	100.0
	Total	24	100.0	100.0	

ICT7. Computers are available in my school for administrative work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	5	20.8	20.8	20.8
	D	4	16.7	16.7	37.5
	SA	8	33.3	33.3	70.8
	SD	7	29.2	29.2	100.0
	Total	24	100.0	100.0	

ICT8. Internet facilities are available in my school for administrative purposes.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	3	12.5	12.5	12.5
	D	1	4.2	4.2	16.7
	SA	11	45.8	45.8	62.5
	SD	9	37.5	37.5	100.0
	Total	24	100.0	100.0	

ICT9. I use ICT tools to keep school records.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	4	16.7	16.7	16.7
	D	3	12.5	12.5	29.2
	SA	10	41.7	41.7	70.8
	SD	7	29.2	29.2	100.0
	Total	24	100.0	100.0	

ICT10. I use ICT tools to communicate with teachers and other staff

members.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	5	20.8	20.8	20.8
	D	5	20.8	20.8	41.7
	SA	9	37.5	37.5	79.2
	SD	5	20.8	20.8	100.0
	Total	24	100.0	100.0	

ICT11. I use ICT tools to prepare official documents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	6	25.0	25.0	25.0
	D	5	20.8	20.8	45.8
	SA	9	37.5	37.5	83.3
	SD	4	16.7	16.7	100.0
	Total	24	100.0	100.0	

ICT12. ICT skills have improved my effectiveness in performing administrative duties.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	1	4.2	4.2	4.2
	D	6	25.0	25.0	29.2
	SA	9	37.5	37.5	66.7
	SD	8	33.3	33.3	100.0
	Total	24	100.0	100.0	

AC13. I supervise teachers regularly to ensure effective teaching.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	11	45.8	45.8	45.8
	D	3	12.5	12.5	58.3
	SA	5	20.8	20.8	79.2
	SD	5	20.8	20.8	100.0
	Total	24	100.0	100.0	

AC14. I provide guidance to teachers to improve their instructional practices.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	6	25.0	25.0	25.0
	D	7	29.2	29.2	54.2
	SA	8	33.3	33.3	87.5
	SD	3	12.5	12.5	100.0
	Total	24	100.0	100.0	

AC15. I make timely decisions concerning school administration.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	7	29.2	29.2	29.2
	D	7	29.2	29.2	58.3
	SA	5	20.8	20.8	79.2
	SD	5	20.8	20.8	100.0
	Total	24	100.0	100.0	

AC16. I use available information when making administrative decisions.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	4	16.7	16.7	16.7
	D	4	16.7	16.7	33.3
	SA	11	45.8	45.8	79.2
	SD	5	20.8	20.8	100.0
	Total	24	100.0	100.0	

AC17. I communicate clearly with staff members.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	5	20.8	20.8	20.8
	D	10	41.7	41.7	62.5
	SA	7	29.2	29.2	91.7
	SD	2	8.3	8.3	100.0
	Total	24	100.0	100.0	

AC18. I maintain effective communication with parents and the community.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	7	29.2	29.2	29.2
	D	7	29.2	29.2	58.3
	SA	6	25.0	25.0	83.3
	SD	4	16.7	16.7	100.0
	Total	24	100.0	100.0	

AC19. I keep accurate school records.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	10	41.7	41.7	41.7
	D	5	20.8	20.8	62.5
	SA	4	16.7	16.7	79.2
	SD	5	20.8	20.8	100.0
	Total	24	100.0	100.0	

AC20. I ensure proper documentation of school activities.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	9	37.5	37.5	37.5
	D	7	29.2	29.2	66.7
	SA	3	12.5	12.5	79.2
	SD	5	20.8	20.8	100.0
	Total	24	100.0	100.0	

AC21. I plan school programmes effectively.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	4	16.7	16.7	16.7
	D	7	29.2	29.2	45.8
	SA	7	29.2	29.2	75.0
	SD	6	25.0	25.0	100.0
	Total	24	100.0	100.0	

AC22. I organise school activities to ensure smooth operation.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	9	37.5	37.5	37.5
	D	6	25.0	25.0	62.5
	SA	5	20.8	20.8	83.3
	SD	4	16.7	16.7	100.0
	Total	24	100.0	100.0	

AC23. I coordinate staff duties to ensure effective school management.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	9	37.5	37.5	37.5
	D	7	29.2	29.2	66.7
	SA	4	16.7	16.7	83.3
	SD	4	16.7	16.7	100.0
	Total	24	100.0	100.0	

AC24. I resolve conflicts among staff members effectively.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	9	37.5	37.5	37.5
	D	6	25.0	25.0	62.5
	SA	4	16.7	16.7	79.2
	SD	5	20.8	20.8	100.0
	Total	24	100.0	100.0	

Correlations

		ICT..	AC..
ICT..	Pearson Correlation	1	.748**
	Sig. (2-tailed)		.000
	N	24	24
AC..	Pearson Correlation	.748**	1
	Sig. (2-tailed)	.000	
	N	24	24

** . Correlation is significant at the 0.01 level (2-tailed).

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	ICT1. I possess the ICT skills needed to perform my administrative duties effectively. & AC13. I supervise teachers regularly to ensure effective teaching.	24	.556	.005
Pair 2	ICT2. I can use computer applications to carry out administrative tasks in my school. & AC14. I provide guidance to teachers to improve their instructional practices.	24	.682	.000
Pair 3	ICT4. I have received formal training on the use of ICT for school administration. & AC17. I communicate clearly with staff members.	24	.561	.004
Pair 4	ICT6. I participate in professional development programmes that enhance my ICT competence. & AC18. I maintain effective communication with parents and the community.	24	.522	.009

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	ICT1. I possess the ICT skills needed to perform my administrative duties effectively. - AC13. I supervise teachers regularly to ensure effective teaching.	-.083	1.139	.232	-.564	.398	-.358	23	.723
Pair 2	ICT2. I can use computer applications to carry out administrative tasks in my school. - AC14. I provide guidance to teachers to	-.208	.977	.199	-.621	.204	-1.045	23	.307

	improve their instructional practices.								
Pair 3	ICT4. I have received formal training on the use of ICT for school administration. - AC17. I communicate clearly with staff members.	-.125	1.076	.220	-.579	.329	-.569	23	.575
Pair 4	ICT6. I participate in professional development programmes that enhance my ICT competence. - AC18. I maintain effective communication with parents and the community.	-.042	1.160	.237	-.532	.448	-.176	23	.862