PRINCIPALS' TRANSFORMATIONAL LEADERSHIP INFLUENCE ON INFORMATION COMMUNICATION TECHNOLOGY INTEGRATION IN TEACHING AND LEARNING IN PUBLIC SECONDARY SCHOOLS IN KAKAMEGA COUNTY, KENYA

BEATRICE ABISAKI MBUNE

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A THESIS SUBMITTED IN FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN (EDUCATIONAL MANAGEMENT) OF THE DEPARTMENT OF EDUCATIONAL, POLICY AND CURRICULUM STUDIES OF KENYATTA UNIVERSITY

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DECLARATION

I confirm that this thesis is my original work and has not been presented for any other award or degree to any other university. The thesis has been complimented and referenced work duly acknowledged where text, data, graphifics, or tables have been borrowed from other works including the internet, the sources are specifically accredited through referencing in accordance with anti-plagirism regulations.

Signature: ..... **Date:** 23-6-2025

Beatrice Abisaki Mbune

E83/CTY/39252/2016

SUPERVISORS

This thesis has been submitted with our approval as University Supervisor(s).

Signature: ..... **Date:** 23-6-2025

Dr. Samuel Waweru

Department of Educational Management,

Policy and Curriculum Studies,

Kenyatta University

Signature: ..... **Date:** 23-6-2025

Prof. Felicita Njuguna

Department of Educational Management,

Policy, and Curriculum Studies,

Kenyatta University

DEDICATION

I dedicate this thesis to Clement Eshibukho, my beloved spouse, and our five children: Francis, Lilian, Benedict, Diana, and Stephan. Despite my depriving you of your valuable free time, you continued to encourage me with "Mom, you can do it," and even assisted me in realizing my dream of obtaining this doctoral degree.

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ABBREVIATIONS AND ACRONYMS

CQASO	County Quality Assurance and Standards officer
ELMS	Elimika Learning Management System
ESP	Economic Stimulus Program
GITR	Global Information Technology Report
GOK	Government of Kenya
ICT	Information Communication and Technology
KCSE	Kenya Certificate of Secondary Education
KESSP	Kenya Education Sector Support Program
KICD	Kenya Institute of Curriculum Development
KNEC	Kenya National Examinations Council
LAN	Local Area Network
MOE	Ministry of Education
SPSS	Statistical Package for Social Science
TSC	Teachers Service Commission
UNESCO	United Educational Scientific and Cultural Organization

ABSTRACT

Information and Communication Technology (ICT) integration is critical for 21st-century education, requiring effective leadership to drive digital transformation in schools. Transformational leadership plays a significant role in promoting teachers' ICT use, enhancing student collaboration, professional growth, and classroom innovation. However, despite substantial investments by the government in technology infrastructure, teacher training, and leadership initiatives, ICT integration in schools remains minimal. The study aimed to investigate principals' transformational leadership influence on the integration of information and communication technology in teaching and learning in Kakamega county Public secondary schools. The research objectives were: To establish the extent to which principals' individualized consideration of staff skill development influences ICT integration in teaching and learning in public secondary schools in Kakamega county ,to examine the extent to which principals' intellectual stimulation of teachers influences ICT integration in teaching and learning in public secondary schools in Kakamega county, to explore how principals' inspirational motivation to teachers influences ICT integration in teaching and learning in public secondary schools in Kakamega County, to determine the degree to which principals' idealized influence on teachers influences ICT integration in teaching and learning in public secondary schools in Kakamega County. Using a mixed-methods explanatory sequential design and Burns' (1978) transformational leadership theory, the study identified transformational leadership as the independent variable and ICT integration as the dependent variable. The research targeted a population of 6,290 and sampled 62 principals, 186 teachers, 372 students, and one County Quality Assurance and Standards Officer (CQUASO). Teacher and student sample sizes were determined using Slovin's Formula and selected through single random sampling, while principals and the CQUASO were purposively sampled. Data collection instruments included interview guides, questionnaires, Focus groups, observation checklists, document analysis checklist. The research instruments were validated by experts in Education Management, Policy, and Curriculum Studies, and a pilot study was conducted with 70 respondents. Reliability was confirmed through Cronbach's Alpha coefficient. Descriptive statistics were employed to analyze both qualitative and quantitative data. Thematic analysis was used for qualitative insights, while quantitative data was analyzed using percentages, frequencies, means, and standard deviations, presented in charts and tables. Linear regression analysis assessed the relationships between variables. Data analysis was conducted using Statistical Package for Social Sciences (SPSS). Findings revealed positive correlations between principals' leadership components and ICT integration in classrooms. Individualized consideration had a strong correlation ($r = 0.584$, $p<0.001$), while intellectual stimulation ($r = 0.534$, $p<0.001$), inspirational motivation ($r = 0.569$, $p<0.001$), and idealized influence ($r = 0.557$, $p<0.001$) also showed statistically significant positive relationships with ICT integration. The study concluded that transformational leadership positively influences ICT integration in classrooms. It recommended that the Ministry of Education strengthen training programs on both transformational leadership and ICT skills. Secondary school principals in Kakamega County are encouraged to enhance their leadership strategies to address staff needs for effective ICT integration.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Information and Communication Technology (ICT) has emerged as a transformative force in secondary school education, fundamentally reshaping educational practices in the present technological paradigm (Mohammed & Abdulghani, 2017).

The integration of ICT in education encompasses the utilization of various technologies, including computers, projectors, internet connectivity, interactive whiteboards, educational applications, and electronic devices. Research demonstrates that ICT integration yields multiple benefits: it enhances student engagement, fosters critical thinking and problem-solving capabilities, strengthens reading comprehension, and deepens subject matter understanding, thereby equipping learners with essential twenty-first-century skills (Mang, Falck, & Woessmann, 2018). Besides this, ICT facilitates continuous educational connectivity through digital platforms, enabling students to collaborate with peers and engage with teachers beyond traditional classroom boundaries.

The revolutionary significance of information communication technology on the teaching-learning process is particularly evident in its facilitation of dynamic teacher-student interactions, fostering a more engaging and participatory educational setting (Seufert, Guggemos, & Sailer, 2021). Teachers can leverage diverse ICT resources-including e-learning materials, multimedia content, and interactive tools-to craft and deliver personalized instruction, track learning outcomes, and pursue professional development opportunities (Oguguo, Ezechukwu, Nannim, & Offor, 2023). This adaptation has become crucial as early exposure to the internet and

social media has transformed students into engaged, self-directed participants in the learning process (Kiwonde, 2020).

Global implementation of ICT in education has demonstrated significant variability in effectiveness across different regions. The Global Information Technology Report (GITR) 2017-2018, published by the World Economic Forum in collaboration with international partners, identifies nations such as Singapore and Sweden as frontrunners in educational technology integration, World Economic Forum (2018). These countries have garnered international recognition for their exceptional technological innovation capabilities and comprehensive digital transformation within educational systems (Meixi, Tengyue, Razak, Ghani, Ghavifekr, & Ran, 2019). Their success highlights the potential of strategic ICT implementation to revolutionize teaching and learning processes when supported by coherent policy frameworks and substantial investment.

Throughout the United States, the integration of technology is widespread, with students and teachers utilizing online courses, digital textbooks, educational websites, videos, games, quizzes, and artificial intelligence (AI) to enhance the learning experience. A survey during the 2021-22 academic year revealed that 54 percent of K-12 educators in the United States preferred digital planning tools that could interact with their instructional materials (Korhonen, 2024). This successful integration largely depends on principals who mentor, coach, and support teachers through ICT-related challenges.

However, the implementation of ICT in education faces significant roadblocks. While educational institutions have access to various technologies, teacher reluctance remains evident even in well-resourced educational institutions.

Alzahrani's (2017) study on ICT developments in Saudi Arabia revealed that despite adequate technological infrastructure, teachers' limited ICT competencies hindered effective implementation. This lack of expertise potentially constrains educators' creativity and confidence in integrating technology into their instructional methods.

Similar patterns emerge in other regions. A comparative study in Ghanaian schools found that educators possessed only rudimentary ICT skills, primarily applied to administrative tasks rather than instructional delivery (Sulemana, Anyanful, & Abdulai, 2018). The research emphasized that successful ICT integration requires both fundamental computer literacy and continuous professional development to promote technological innovation. Moreover, insufficient ICT knowledge and skills among teachers, combined with inadequate institutional support, may discourage the adoption of technology-enhanced teaching methods.

Kenya is one of the sub-Saharan countries that have recognized the importance of integrating ICT in teaching and learning through varied policy initiatives, including Sessional Paper No. 1 of 2019 and the National Education Sector Plan (NESSP) 2018-2022, which position ICT as a crucial enabler of a knowledge-based society in alignment with Vision 2030. To support this vision, the government established the ICT Authority, a specialized agency responsible for regulating and managing the implementation of a nationwide optical fiber network to enhance connectivity, particularly in underserved rural areas. The ICT Authority actively implements digital literacy programs across educational institutions. Research indicates that the government's commitment to enhancing ICT infrastructure and promoting digital literacy reflects the rapid transformation of teaching and learning processes through technology (Molly, Donkor, Paul, & Olutola, 2020; Gacicio, 2022). All these

policies provide a framework on which ICT can be integrated in teaching and learning.

The Government has also adopted UNESCO's (2018) Competence ICT Framework for educators (ICT CFT), which delineates the essential competencies required for effective technology integration in teaching. This framework offers various ICT applications and provides comprehensive guidance to support educators in their technological journey. UNESCO has encouraged developing nations, including Kenya, to implement the ICT CFT to align with institutional objectives and enhance educational outcomes. Building on this international framework, in 2021, the Teachers Service Commission (TSC) developed a localized ICT Competency Curriculum Framework specifically tailored to the Kenyan context. This TSC framework aims at enhancing teachers' technological capabilities and supporting their continuous professional development in alignment with national educational priorities and the UNESCO standards.The TSC's ICT Competency Curriculum Framework helps teachers develop innovative abilities in leveraging digital resources to create stimulating and meaningful learning experiences, particularly in light of the new competency-based curriculum which emphasizes active classroom engagement. Notably, the framework also represents a transformative approach to digital education in Kenya. It strategically equips learners with cutting-edge ICT skills crucial for success in the 21st century, directly supporting Kenya's Vision 2030 objectives.

The curriculum reforms in Kenya in 2017 were implemented to expose all learners to digital literacy required to thrive in the 21st century skills. Studies showed that primary schools received tablets to solidify the use of ICT in classroom (Wanzala &

Nyamai, 2018). Teachers Service Commission in 2016 encouraged teachers to sign up for the Center for Mathematics, Science, and Technology Education's (CEMASTEA) digital literacy program. Enhancing teachers' digital literacy skills would enable them to produce digital content for use in the classroom, which is the program's major goal. Approximately 81,000 educators have undergone this training. To assist teachers in acquiring the most recent ICT skills, TSC has also developed a curriculum guide as part of the social pillar of Vision 2030 (Baraza & Peter, 2021). However, a survey conducted by the Teacher's Service Commission on 1200 teachers in selected public schools found that 84.2% of respondents felt that Kenyan teachers had not effectively cultivated innovation and creativity in their teaching activities (Oduor, 2018; Wanzala & Nyamai, 2018).

The Ministry of Education emphasizes school principals critical function in overseeing and enabling ICT implementation while strengthening initiatives to support the government's capacity-building efforts. Technology (ICT) implementation in teaching requires strong leadership support to be truly transformative (Gacicio, 2022).Numerous studies have examined the assocciation ICT integration and school leadership (Dexter, 2018; Richardson&Dexter2020; Chiu, 2022). Contemporary leadership, which encompasses both traditional administrative duties and technological responsibilities, can be defined as the ability to guide individuals or groups toward achieving specific objectives (Chang, Hsieh, Chou, & Huang, 2021). Within this context, transformational leadership has emerged as a particularly effective approach, as it empowers leaders to inspire innovation, foster collective vision, and facilitate meaningful change in educational technology adoption (Bass & Riggio, 2023). Transformational leaders in education not only

manage technological integration but also motivate and intellectually stimulate their staff while providing individualized consideration to address diverse needs and challenges.

School principals' are key to cultivating positive workplace atmosphere, supporting teacher development, and implementing ICT-related policies and professional development initiatives (Wang, Tigelaar, & Admiraal, 2022). Their leadership not only enhances teacher professional growth but also indirectly influences the integration of ICT in classroom settings (Tulowitzki, Gerick, & Eickelmann, 2022). Through transformational leadership practices, principals can establish an environment that fosters innovation and continuous learning that facilitates fruitful ICT integration.Dexter (2018) outlines several key responsibilities for principals in this context. First, principals must develop and articulate a school vision that aligns with ICT integration goals, ensuring teachers can adapt to and implement this vision effectively. Second, they should leverage individual teachers' strengths while serving as role models in the usage of digital tools for instructions. Finally, principals should actively collaborate with and support teachers to enhance educational outcomes. These responsibilities align closely with transformational leadership principles, emphasizing the importance of vision-building, individualized support, and collaborative improvement processes.

According to Bass (1985), the attributes of a transformative leader can be categorized into four "I's":idealized influence, intellectual stimulation ,individualized consideration and inspirational motivation,

The principal's capacity to nurture and catalyze the potential of technology-oriented innovative educators by providing essential ICT infrastructure and creating an

environment that fosters cognitive engagement is characterized as intellectual stimulation.The indicators here include Commitment Creativity and Problem solving. The primary responsibility of a transformational principal is to facilitate and enhance the professional growth of teachers by creating a favorable and productive work environment, which encompasses the provision of sufficient and effective technological resources. Principals that cultivate a conducive working atmosphere encourage their instructors to exhibit creativity and innovation in problem-solving endeavors (Garcia, Abrego & Jauregui, 2019) Yamamoto and Yamaguchi (2019).

Individual attention refers to principals who pay attention to specific prefernces of teachers and learners. Teachers needs vary from lack of confidence on use of technology and personal needs. Practices of this leadership behaviour focused on principals support of proffessional develoment ,Mentorship Programs,ICT resources Technical support. The principal carefully listens to teachers and takes care to ICT related needs of each teacher (Kholi, 2021).

Inspiration motivation is principals who inspire the teachers by enthustically engaging them and providing meaniful work environment to the educators and students.Indicators of this leadership practices that this study focused on commitment to ethical practices at work, shared ICT mission and policies.

Idealised influence refers to the way a principals behaviour attracts teachers, students and those around them. Principal's behaviour is measured with how they handle teachers on ICT matters, school policy and vision. Successful intergration of ICT in teaching and learning starts with the principals, beliefs, ICT vision and ethical values (Kholi 2021)

To ensure that principals' innovative leadership approach on ICT integration in instruction is realized, various variables were controlled, including school location, teacher age, and capabilities in integrating ICT in the classroom. ICT integration in teaching constituted the dependent variable ,measured through six key aspects including how often ICT was used, range of technologies employed (including projectors, smartboards, educational apps, and online platforms), innovative teaching approaches, student engagement levels, digital assessment methods, and teachers' ability to create and share digital resources.

The study accounted for several intervening variables that influenced ICT integration: teachers' ICT competencies, school location, support mechanisms like CDF (Constituency Development Fund) and bursaries that enabled consistent student attendance, and government ICT policies that provided implementation guidelines. These moderating variables significantly influenced how transformational leadership impacted ICT integration by addressing potential barriers and enhancing technology adoption in classrooms.

Research conducted across various regions has discovered a notable link connecting transformational leadership and the integration of ICT into teaching and learning (Ferguson, 2021; Maria-Luisa, Chiara, Tessa, Alberto, Philipp, & Petko, 2023; Gacicio, 2022).

During the COVID-19 pandemic, a study in Columbia found that principals with transformational leadership qualities provided better resources for teaching and learning, resulting in higher teacher satisfaction and enhanced creativity (Ferguson, 2021). This demonstrates how effective leadership directly supports technological adaptation during crisis situations.

Similarly, research from Switzerland (Chiara et al., 2023) showed that transformational principals effectively support teachers in using digital technologies to create intellectually challenging learning activities that increase student participation. This finding highlights how leadership qualities translate into practical classroom applications of technology.

The influence of leadership extends to teacher motivation as well. In Malaysia, Ying and Alias (2021) found a strong correlation between headteacher technology leadership and teacher motivation to use educational technologies. Teachers showed greater willingness to integrate digital tools when principals provided technology strategy plans and supported professional development to enhance technological capabilities.

These leadership effects ultimately impact student outcomes. Musyoki, Okoth, Kalai, and Okumbe (2021) discovered that principals' transformational characteristics significantly affected student performance. When principals lead by example, teachers are more likely to adopt similar approaches, including using technological devices without coercion.

In the specific context of Nairobi, Gacicio (2022) found that headteachers who embraced transformational leadership successfully motivated educators to integrate ICT in public elementary schools. This positive relationship is further emphasized by contrasting research from Yamamoto & Yamaguchi (2019), which noted that principals lacking transformational attributes may avoid supporting ICT tools, causing teachers to feel uncomfortable with classroom technology integration.

Together, these studies from diverse geographical contexts provide strong evidence that transformational leadership qualities among school administrators play a crucial role in successful ICT integration in educational settings.

Kakamega County, the fourth most populous county in Kenya following Nairobi, presents a critical case for studying ICT integration in education. The county has consistently experienced high student enrollment in public secondary schools, creating unique challenges for resource allocation and infrastructure development. Data from the National Bureau of Statistics captured in the Nemis system, the county maintains a large average school size of 435 students per school, significantly impacting resource distribution and teaching effectiveness (MOE 2020). This large student population creates particular pressure on ICT resources, with only 41% of school computers being functional - a statistic that directly affects teachers' ability to integrate technology into their teaching practices.

Recent investigations in Kakamega County has revealed several concerning trends in ICT integration. A comprehensive study by Shikomera (2024) highlighted major challenges: widespread lack of ICT training among teachers, insufficient digital devices, leadership and limited internet connectivity. Despite teachers showing positive attitudes toward ICT integration, these infrastructural and training deficiencies have created significant barriers to implementation.

Previous studies in the county have also identified persistent challenges. Miima (2014) discovered a paradoxical situation where teachers were reluctant to use ICT tools even in well-equipped institutions, leading to poor student performance in Kiswahili. Building on these findings, Muvango (2021) documented similar resistance among English teachers toward adopting available e-learning resources.

These patterns of resistance and underutilization of available resources raise particular concerns about the county's ability to contribute to Kenya's Vision 2030 goals of achieving middle-level socioeconomic status.

The unique characteristics of Kakamega County - its large student population, varied school locations, and existing infrastructure challenges - make it an ideal setting for examining how principals' transformational leadership influences ICT integration.while, it is important to acknowledge the presence of other potential elements that may also lead increased utilization of ICT tools. Principals, hold a pivotal position in this endeavor. This study aims to examine principals' transformational leadership influence on the integration of information communication technology in teaching and learning in public secondary schools in Kakamega county.

1.2 Statement of the Problem

Information and communication technology (ICT) integration in education delivers significant pedagogical advantages, promoting student teamwork, analytical reasoning, and problem-resolution capabilities while nurturing creative thinking and innovative approaches. For teachers, ICT integration facilitates effective instructional design, student assessment, and professional development. However, the fruitful utilization of technologies in educational settings fundamentally relies on strong leadership support, particularly through transformational leadership practices that can guide and motivate teachers in meaningful technology integration.

Despite the Kenyan government's implementation of ICT strategy policies, strengthening teacher training programs, ICT competency framework, and investment in leadership training for principals, the integration of ICT in public

secondary schools remains limited. This challenge is particularly evident in Kakamega County, where data from the National Education Management Information System (NEMIS) reveals a significant mismatch between school populations (averaging 435 learners) and available ICT resources. The Ministry of Education reports that only 41% of public school computers in the county are functional, creating a substantial barrier to effective implementation of ICT in teaching.

Notably, local research indicates that even schools with adequate ICT infrastructure demonstrate insufficient integration levels, potentially hampering the county's educational and economic advancement. The persistent low levels of ICT integration in Kakamega County's public secondary schools have raised concerns among stakeholders about the possible connection between principals' administrative strategies and the underutilization of available technology resources.

Therefore, the study sought to investigate how principals' transformational leadership influences the integration of ICT in teaching and learning within public secondary schools, focusing specifically on identifying leadership practices that may enhance technology adoption and utilization in education.

1.3 Purpose of the Research

This research aimed to evaluate on how school principals' leadership practices, particularly their transformational leadership traits, influence ICT integration in teaching across Kakamega County's public secondary schools, and to formulate actionable recommendations for enhancing ICT implementation in pedagogical practices.

1.4 Research Objectives

i) To establish the extent to which principals' individualized consideration of staff skill development influences ICT integration in teaching and learning in public secondary schools in Kakamega County.

ii) To examine the extent to which principals' intellectual stimulation of teachers influences ICT integration in teaching and learning in public secondary schools in Kakamega County.

iii) To explore how principals' inspirational motivation to teachers inflences ICT integration in teaching and learning in public secondary schools in Kakamega County.

iv) To determine the degree to which principals' idealized influence on teachers influences ICT integration in teaching and learning in public secondary schools in Kakamega County.

v) To assess the extent to which Principals Transformational leadership approaches influences ICT integration in teaching and learning in public public schools in Kakamega County.

1.5 Research Hypotheses

The study was based on these hypotheses;

H_{01}: There is no relationship between principals' individual consideration of teachers skill development and ICT integration in teaching and learning in public seondary schools in Kakamega County

H_{02}: There is no relationship between principals' intellectual stimulation to teachers' and ICT integration in teaching and learning in public secondary schools in Kakamega County.

H_{03}: There is no relationship between principals' inspirational motivation to teachers' and ICT integration in teaching and learning in public secondary schools in Kakamega County

H_{04}: There is no relationship between principals' idealized to teachers'and ICT integration in teaching and learning in public secondary schools in Kakamega County.

H_{05}: : There is no relationship between principals' transformational leadership approaches ICT integration in teaching and learning in public secondary schools in Kakamega County.

1.6 Significance of the Research

This investigation on transformational leadership's impact on ICT integration in teaching and learning offers significant value across multiple educational stakeholders:

The findings provide the Ministry of Education with evidence-based insights to strengthen teacher training programs by specifically incorporating transformational leadership competencies alongside technical ICT skills. This research identifies specific leadership attributes that most effectively drive technology adoption, enabling policymakers to design targeted professional development frameworks for school leaders that align leadership capacity with educational technology initiatives.

By examining the relationship between leadership approaches and ICT implementation outcomes, this research provides the Education Ministry with empirical justification for strategic budget allocations. The findings demonstrate where supervisory interventions by county Quality Assurance Officers would most

effectively support technology integration, allowing for optimized resource distribution based on demonstrated impact rather than presumed needs.

For principals, this research offers a practical framework for self-assessment against empirically validated transformational leadership practices that specifically enhance technology adoption. The findings provide school leaders with actionable strategies to address identified leadership gaps, prioritize effective interventions, and develop targeted approaches to overcome specific technology integration barriers within their unique school contexts.

School Boards of Management may gain valuable insights into the specific infrastructure requirements and resource mobilization and allocation that most effectively support ICT integration when coupled with appropriate leadership approaches. This research equips boards with evidence to prioritize investments that optimize the leadership-technology relationship rather than focusing solely on hardware acquisition.

Teachers may benefit from this study's identification of specific leadership practices that most effectively support their technology adoption efforts. The findings illuminate how transformational leadership specifically addresses the challenges teachers encounter during technology implementation, providing a framework for collaborative approaches to technology-enhanced teaching.

This research contributes to the scholarly understanding of transformational leadership in technology-rich educational environments within the Kenyan context, providing critical insights into an understudied area. The findings provide contemporary insights into the evolving relationship between leadership and

technology adoption, offering curriculum designers evidence-based principles for integrating leadership development with technological pedagogical training.

1.7 Limitations of the Study

i The research encountered significant administrative challenges when seeking access to government-funded high schools due to complex bureaucratic procedures. These institutional gatekeeping mechanisms necessitated multiple scheduling adjustments to accommodate principals' availability and readiness, extending the data collection timeline. This temporal disruption may have influenced response patterns, as participants approached the research at different points in their academic calendars, potentially affecting their perspectives on leadership and technology integration.

ii Participant engagement varied considerably, with some individuals demonstrating initial reluctance to provide comprehensive responses. While the researcher addressed this through relationship-building strategies and establishing trust, this limitation potentially affected data richness. The need for additional rapport-building efforts with hesitant participants may have introduced subtle variations in interview dynamics across the sample, although methodological consistency was maintained through standardized protocols and reflexive practice.

iii Technical infrastructure limitations, particularly intermittent network connectivity, created substantial barriers to the timely administration of online surveys. These technological constraints not only delayed data collection but potentially introduced response bias, as participants completing surveys immediately after network restoration may have responded differently than those

who participated later. Additionally, connectivity issues may have inadvertently underscored the very technological integration challenges that formed the study's focus, potentially heightening participants' awareness of implementation difficulties.

1.8 Delimitations of the Research

i This investigation was geographically restricted to Kakamega County in western Kenya, Kenya's fourth most populous county after Nairobi. The research specifically targeted 69 county public secondary schools that had established ICT infrastructure.This delimitation ensured the research examined environments where technology integration was physically possible, allowing for focused analysis of leadership influence rather than resource availability constraints.

ii The investigation specifically examined principals' transformational leadership influence on ICT integration in teaching and learning processes. The research framework deliberately concentrated on four key dimensions of transformational leadership. While this focus enabled in-depth analysis of leadership factors, the study acknowledges that technology integration is a multifaceted phenomenon. Caution should be exercised when interpreting results, as factors beyond leadership—such as teacher attitudes, technical support, professional development opportunities, and institutional culture—may significantly influence ICT integration outcomes.

iii The study population was deliberately limited to principals, teachers, students, and a County quality assurance officer from the selected schools. These stakeholders were strategically chosen based on their direct involvement in and

experience with both leadership practices and technology implementation. This purposeful sampling approach enhanced data relevance but inherently restricts generalizability. Consequently, the findings should not be extrapolated beyond the specific contextual parameters of public secondary schools in Kakamega County with existing ICT infrastructure, as different educational settings may present unique dynamics in leadership-technology relationships.

1.9 Assumption of the Research

1. The researcher assumed that principals of public secondary schools possessed sufficient knowledge and understanding of transformational leadership principles and practices to provide meaningful responses. This assumption recognized that while principals may have varying levels of formal training in leadership theory, their professional positions and experiences likely equipped them with practical understanding of leadership behaviors that could be accurately self-reported. The researcher acknowledged that self-reporting inherently carries some risk of social desirability bias, with principals potentially responding in ways that align with perceived best practices rather than their actual behaviors. However, the research design incorporated triangulation through multiple data sources, including teacher perspectives, to mitigate this limitation and enhance the validity of findings regarding transformational leadership practices in technology integration.

2. The study assumed that teachers possessed sufficient awareness and understanding of leadership behaviors to recognize and evaluate transformational leadership practices when experienced in their professional

context. While teachers may not necessarily have formal knowledge of leadership theory terminology, they could accurately report on observable leadership behaviors and their effects on technology integration efforts. The research acknowledged the potential for response bias, as teachers might hesitate to critically evaluate their superiors, but implemented anonymity safeguards and emphasized the study's academic purpose to encourage candid responses about principals' influence on ICT integration.

3. The study assumed that teachers and students had adequate exposure to both ICT resources and their principals' leadership approaches to form informed perceptions about their interrelationship. This assumption recognized that participants' technological competencies and interactions with principals might vary across institutions, but presumed they could meaningfully reflect on how leadership behaviors affected their engagement with available technology. The research design accounted for potential variations in ICT familiarity by focusing on participants' perceived experiences rather than measuring absolute technical proficiency, thus capturing authentic insights into how principal leadership influenced technology adoption regardless of participants' baseline technological skills.

1.10 Theoretical Framework

The transformational theory (Burns, 1978) served as the study's foundation. Bass (1985) refined the theory in the years that followed, identifying four transformative traits: individual consideration, intellectual stimulation, idealized influence, and Motivation.Several institutions, including education, have now adopted the approach.

Transformational leadership theory pertains to a leader's behavior or characteristics that attract followers to change in a social system to achieve the result. Leadership is a behavioral approach that others look upon so that they can perform a particular action. The degree that teachers integrate ICT in the learning environment varies from leader to follower, depending on their traits. Therefore, the researcher considered the theory relevant. In 1978 James Macgregor, while studying political leadership, developed transformational leadership theory. In his descriptive study, he found out that the leader’s trait or ability of a leader towards the organization transforms or attracts followers to change. This terminology continue to attract attention used in various fields, including Education. According to Burn, transformational leadership entails "leaders and followers working towards a desired change in the organization, such leaders are visionary, interact and motivate their follower. This interaction between leaders and followers create a significant change in the organization. Bass (1985) expanded upon Burns' (1978) research by characterizing the influence leaders have on their followers through four key attributes commonly referred to as the "Four I's": inspirational motivation, individual consideration, idealized influence, and intellectual stimulation. How effectively a leader demonstrates these traits largely determines organizational outcomes.

Transformational leaders must attend to each staff member's unique requirements through advising, directing, and actively listening to their concerns. In the school context, principals should carefully align teachers' individual needs with organizational objectives. Teachers face varying challenges with ICT integration, including technological skill gaps, self-efficacy issues, and resource constraints such as limited access to hardware, software, and internet connectivity. Effective principals demonstrate genuine concern for teachers, treat them respectfully, and seriously consider their suggestions regarding classroom ICT implementation.

Bass emphasized that transformational leaders should nurture and encourage followers' creativity while developing transformational traits. School leadership must recognize and cultivate teachers' diverse skills and capabilities. By providing adequate ICT infrastructure and technological support while acknowledging teachers' innovative potential, principals can motivate more effective classroom technology usage.

Inspirational motivation plays a crucial role in organizational success. Transformational leaders collaborate with teachers to develop an organizational vision that aligns with community values, serving to elevate aspirations, provide unified goals, and promote cooperation within the school community. Principals who demonstrate inspirational motivation set high standards while providing clear guidance and maintaining confidence in institutional objectives. Properly motivated teachers are more likely to integrate ICT effectively into their teaching practices.

Regarding idealized influence, Bass emphasized that transformational leaders should model exemplary behavior through moral conduct, dedication, trust, and commitment to organizational goals. Leaders exhibiting ethical qualities naturally

earn respect from both teachers and students. As primary instructional supervisors, principals must emphasize ethical leadership while establishing a strong cultural foundation for classroom ICT integration. This approach creates an environment where technological innovation can flourish while maintaining high ethical standards.

1.11 Conceptual Framework

Fuller (2011) connotes a conceptual framework as an analytical tool that organizes ideologies regarding variable relationships in a study. It then presents these ideas using graphs or diagrams, among other methods. Concerning this study, the Principals' Transformative leadership approaches is the independent variable while and ICT Integration is the dependent Variable

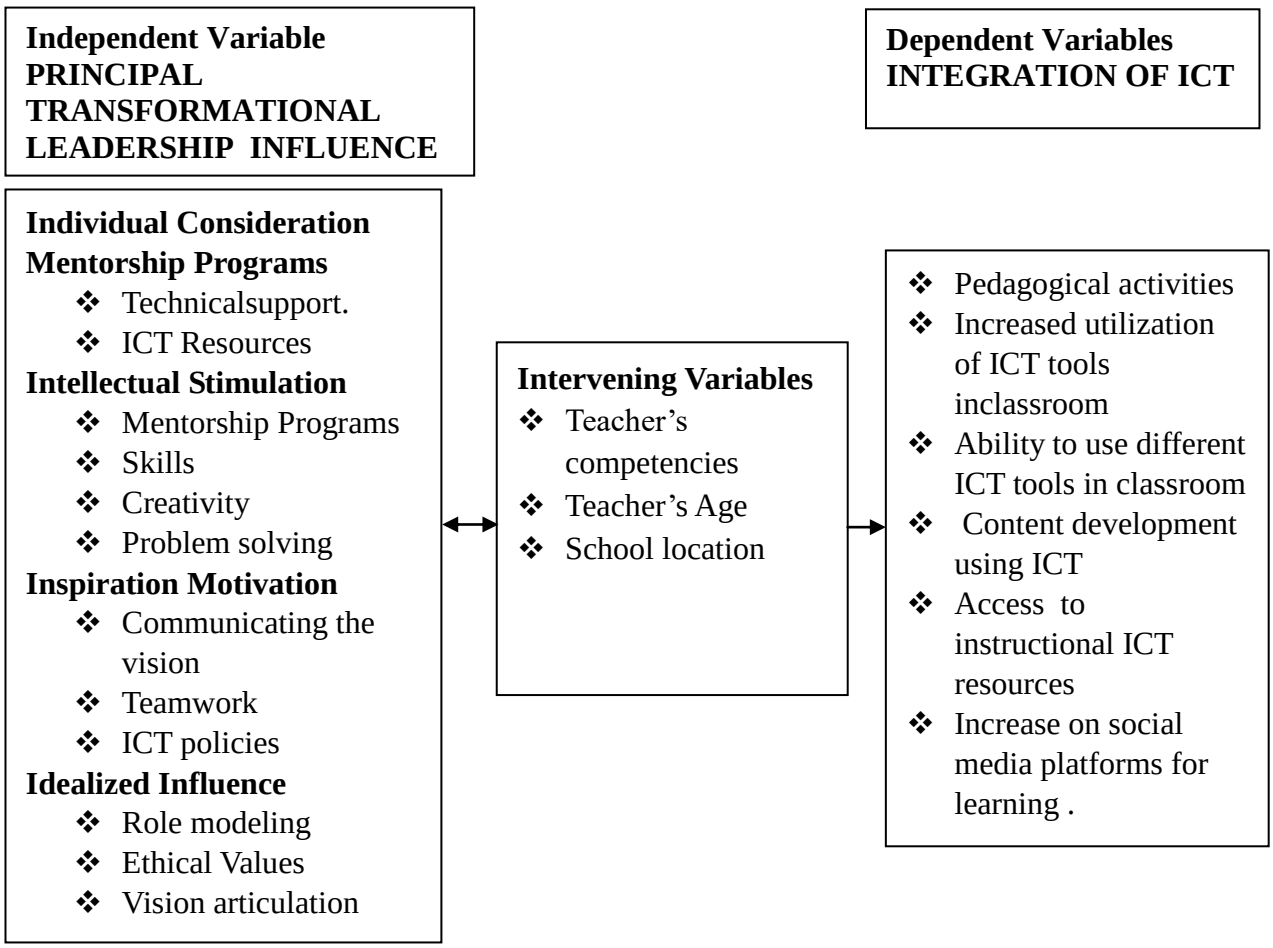

Figure 1.1: Conceptual Framework

According to Orodho (2016), the conceptual framework aims to explain the connections among the predictor , response , and mediating variables. The arrows indicate the transformational leadership and the main constructs, the Four “Is” For this case, inspiration motivation helps the Principal to communicate and articulate the vision to teachers by setting standards of integration of Technology in curriculum instruction.

Individual consideration will also help the principals understand teachers' needs, such as training and providing computer accessories and e -resources to integrate ICT in the classroom. Further, Intellectual stimulation will help the Principal to stimulate innovative ways of teaching using ICT in instructions. Lastly, in Idealized influence, the principal is expected to inspire other teachers by demonstrating ethical and professional practices. This will help teachers to integrate ICT leading to students’ educational outcomes.

The dependent variables show the outcomes of the independent variable, the Integration of ICT. The increased in-depth knowledge measured this through research activities, the time spent on completion of the task, and resulting in improved increased research activities, pedagogical activities, and task completion.

The intervening variables include, Age may have an influence because some of the teachers may consider digital age teachers, and Gender may have some influence due to preference for male gender and female gender, ICT policies, especially flexibility of schools' ICT policies on the handling of the digital tools, funding levies, and school location. This will strengthen the independent variable.

1.12 Operational Definition of Terms

Idealized Influence: is the ability of a Principal's model of personal integrity, their commitment to work, and effectively use ICT tools to achieve set targets in education delivery.

Individual consideration: is the ability to identify and pay attention to teachers' needs. Teachers' needs vary from inadequate training on ICT to low esteem in the use of ICT

Influence: describes a person's capacity to guide another individual to follow given directives without coercion. The teacher will voluntarily incorporate ICT into administrative tasks without any external coercion.

Information Communication Technology (ICT); is a set of tools like computers, software, internet, video, projectors, i. Pads, phones, and digital cameras teachers use to support their work.

Inspiration motivation: encompasses the principal's aptitude to energize and inspire educators through providing a conducive work environment, for example, developing and articulation of the vision and school ICT policies, facilitating them, and provision of technologies to be used.

Integration: can be described as cooperating technological devices in school daily operations that include classroom instructions, Administrative duties, etc. These devices are computers, multimedia projectors, hardware, and software in curriculum instruction.

Intellectual Stimulation: is the capacity of the principal to support and stimulate the abilities of innovative teachers committed to the use of ICT by providing them with adequate facilities and encouraging them intellectually.

Learning- is behavior change resulting from information acquired and transmitted by a teacher or exposure to ICT tools.

Teaching: is the process of transmitting and sharing knowledge using supportive tools such as ICT to explain, demonstrate and illustrate concepts to a student or group of students.

Transformational leaders: Leaders who, through their Influence, motivate and inspire teachers towards achieving the desired change in the organization.

CHAPTER TWO

RELATED LITERATURE REVIEW

2.1 Introduction

This chapter covers the literature review which examines the relationship between transformational leadership and digital education tools. It specifically explores how the four dimensions of transformational leadership affect the integration of information and communication technologies (ICT) in educational delivery(Inspirational motivation ,Idealized influence,Intellectual stimulation and Individual considerations).The review analyzes existing research on transformational leadership principles in educational contexts and identifies knowledge gaps related to ICT implementation in education.

2.2 The Concept of Transformational Leadership

Transformational leadership represents a dynamic leadership approach that fundamentally reshapes social interactions and organizational management within specific social systems or institutional settings. In this framework, the transformational leader collaborates with followers to initiate and implement organizational change in pursuit of collective objectives. Within the educational context, a primary goal is the successful integration of technology into pedagogical practices.

Research has consistently demonstrated that transformational leaders function as effective agents of change (Bass & Riggio, 2023). This leadership style necessitates the adoption of sophisticated approaches to managing institutional operations as part of the transformation process. Bass (1998) identified four fundamental dimensions

that characterize transformational leadership behavior, commonly known as the "Four I's":

Principals' capacity to nurture and enhance the capabilities of innovative teachers committed to ICT integration by providing adequate technological infrastructure and intellectual encouragement characterizes intellectual stimulation.The indicators here include Commitment Creativity and Problem solving. The primary responsibility of a transformational principal is to facilitate and enhance the professional growth of teachers by creating a favorable and productive work environment, which encompasses the provision of sufficient and effective technological resources. Principals that cultivate a conducive working atmosphere encourage their instructors to exhibit creativity and innovation in problem-solving endeavors (Garcia, Abrego & Jauregui, 2019) Yamamoto and Yamaguchi (2019).

Individual attention refers to principals who pay attention to specific preferences of teachers and learners. Teachers needs vary from lack of confidence on use of technology and personal needs. Practices of this leadership behaviour focused on principals support of proffessional develoment ,Mentorship Programs,ICT resources and Technical support. The principal carefully listens to teachers and takes care of ICT related needs of each teacher (Kholi 2021)

Inspiration motivation is principals who inspire the teachers by enthustically engaging them and providing meaniful work environment to the learners and educators . Dimensions of this leadership practices that this study are centered on commitment to ethical practices at work, shared ICT mission and policies.

"Idealized influence refers to how a principal's behavior attracts teachers, students, and others in their environment. A principal's behavior is evaluated based on how ethically they handle teachers in matters related to ICT, school policy, and vision. The successful integration of ICT in teaching and learning begins with the principal's beliefs, ICT vision, and ethical values (Kholi, 2021)."

2.3 Information Communication Technology (ICT) Integration

ICT integration represents a comprehensive process that facilitates the implementation of technology to support various educational administrative functions, including classroom instruction monitoring, student assessment, progress reporting, and feedback mechanisms within educational institutions (UNESCO, 2020). In the educational context, ICT integration serves multiple purposes: delivering subject content, enriching instructional methods, and transforming traditional pedagogical approaches.

The term ICT encompasses a broad spectrum of technological tools utilized for communication and instruction, including interactive devices, laptops, tablets, and desktop computers .

The implementation of ICT tools in educational settings can enhance teachers' pedagogical capabilities, transcend traditional lecture-based instruction, and align with global trends toward technology-driven interactive learning practices ((Mang, Falck, & Woessmann, 2018).

Contemporary learners predominantly engage with digital platforms through group discussions, video content, and internet-based resources. Consequently, educators must develop proficiency in ICT skills to effectively engage these digitally native

students and enhance classroom participation (Amosa, Ogunlade, & Obielodan, 2016). Teachers who embrace innovative technological approaches can more effectively address educational challenges and facilitate meaningful student engagement in the teaching-learning process.

Evidence consistently demonstrates that the strategic implementation of ICT promotes positive educational outcomes. However, the implementation of ICT in education faces significant challenges. While educational institutions have access to various technologies, teacher reluctance remains evident even in well-resourced educational institutions. Alzahrani's (2017) study on ICT developments in Saudi Arabia revealed that despite adequate technological infrastructure, teachers' limited ICT competencies hindered effective implementation. This lack of expertise potentially constrains educators' creativity and confidence in incorporating technology into their teaching practices.

2.4 Individual Consideration of Transformational Leadership influence ICT Integration in Teaching and Learning.

Individualized consideration encompasses the practice of considering the employees' distinct needs and requirements within institutional contexts. In educational settings, teachers' needs vary significantly, ranging from limited ICT proficiency to inadequate access to technological infrastructure and insufficient technical support for implementing digital tools in classroom instruction. Transformational principals demonstrate heightened awareness of teachers' individual needs, understanding their challenges while carefully considering their concerns and recommendations regarding essential resources for ICT integration in teaching practices (Raman, Thannimalai, & Ismail, 2019).

Educational institutions staffed with well-trained and technologically proficient educators demonstrate higher rates of effective ICT resource utilization in academic settings. Conversely, teachers lacking experience and familiarity with ICT often display reluctance to incorporate these technologies into their curriculum. Nzoka (2023) found that educators possessing adequate ICT competencies are more likely to integrate these technologies into their instructional methodologies, leading to enhanced pedagogical effectiveness and improved student academic outcomes. Consequently, this research focuses on examining how the individualized consideration dimension of transformational leadership influences teachers' professional development, particularly in their utilization of ICT tools for teaching and learning.

Ferguson's (2021) empirical study conducted at an urban educational institution in Bogota, Colombia, investigated leadership support for professional development during the COVID-19 pandemic, with particular focus on individual consideration practices. Research findings indicated that most interviewed teachers confirmed receiving tutorial resources from principals specifically for platform utilization during remote instruction. Teachers who benefited from professional development in ICT implementation demonstrated enhanced service delivery and improved student learning outcomes, as documented through their interactions. These findings highlight the need for greater emphasis on individual consideration within transformational leadership approaches to develop staff skills in educational technology integration-a gap this current study aims to address.

Ferguson's research employed a qualitative methodology with convenience sampling of 29 primary teachers. Data collection utilized semi-structured interviews and focus groups. However, several limitations were apparent: the study was conducted in Colombia, representing a different context from Kakamega county; the sample size was limited to 29 teachers, compared to this study's broader sample of 62 public secondary schools in Kakamega county; the qualitative approach lacked verification mechanisms that quantitative methods might provide; and the convenience sampling technique potentially introduced bias by including only easily accessible participants who may have had limited experience with educational technology. Therefore this study sought to address objective one about determining principals individual consideration to educators utilizing innovative devices in instructions

Imran's (2017) research in Bangladesh examined digital tool implementation in secondary education under the nation's reformed education policy. The study analyzed classroom technology usage, its curricular impact, and barriers to effective ICT integration. Through educator interviews and focus groups, the investigation revealed that teachers primarily needed assistance with digital content creation. The findings highlighted the importance of principals intellectually stimulating teachers to develop independent problem-solving skills, particularly for educational content development, as students demonstrate greater engagement with innovative instructors.

Additionally, the research indicated that educational leaders require extended timeframes to facilitate behavioral changes among teachers and students for successful technology implementation. However, this study had several limitations: its focus on general technology inclusion in secondary education differs from the

current study's specific examination of transformational leadership's relationship to ICT integration; its setting in a developed country context potentially limits generalizability; and its methodological approach relied on limited research instruments, confined only to focus groups and interviewsIn contrast, the current research employed multiple research instruments, including document analysis, observations, interviews, questionnaires, and focus groups, thereby enabling more comprehensive and triangulated findings. Furthermore, Imran's focus group discussions often present challenges in eliciting candid opinions due to inherent biases.Therefore, the study looked at the extent to which transformational principals' intellectual stimulation of ICT implementation influences classroom instruction.

Ndiritu, Gichimu, and Ndiritu (2018) investigated the critical gap in digital tool implementation by transformational school administrators across 40 Kenyan secondary schools. Their research revealed a statistically significant correlation ($r = 0.560$) between teachers' utilization of digital technologies in instructional practices and administrative support levels. The researchers recommended prioritizing ICT training for school administrators and advocated for integrating technology-focused professional development within daily educational activities to establish sustainable digital tool implementation practices in educational settings.

Miima (2014) examined ICT integration in Kiswahili language instruction within Kakamega County high schools, employing Bruner's (1990) Constructivism Theory as the theoretical framework. The descriptive survey research targeted 45 public high schools equipped with computer technologies. The findings indicated ineffective ICT tool utilization in Kiswahili instruction, primarily attributed to teachers' limited technological proficiency. Notably, only 36% of teachers participated in professional

development workshops and seminars. The remaining educators expressed willingness to attend such training sessions contingent upon school leadership support, emphasizing on the crucial function of transformational principals in inspiring and encouraging ICT integration in curriculum instruction.

2.5 Principal's Intellectual Stimulation of Transformational Leadership on ICT Integration in Teaching and Learning

Intellectual stimulation is the capacity a person has to forster and advance instructors' creativity through the use of technology in the classroom (Yamamoto & Yamaguchi 2019). The primary responsibility of a transformational principal is to facilitate and enhance the professional growth of teachers by creating a favorable and productive work environment, which encompasses the provision of sufficient and effective technological resources. Principals that cultivate a conducive working atmosphere encourage their instructors to exhibit creativity and innovation in problem-solving endeavors .

Maria-Luisa et al. (2023) investigated how transformational school principals support teachers in leveraging digital technologies to enhance student engagement in intellectually challenging learning activities. The study examined multiple mediating factors: teachers' positive beliefs, technical competencies, digital school infrastructure, and pedagogical ability to integrate technology. The research surveyed 2,247 upper secondary teachers in Switzerland, revealing a strong positive correlation between transformational leadership and various aspects of digital school infrastructure, teachers' technological beliefs, technical proficiency, and pedagogical integration capabilities. The results revealed that all variables, excluding digital school infrastructure, significantly predicted increased technology integration

levels.The researchers noted that disparities in schools' computer access could potentially widen the digital divide in the knowledge-based economy if not addressed by school administrators.

Gyansah (2020) conducted research on transformational leadership in Ghana, examining how leadership impacts elementary students' academic performance. The research employed a convergent parallel design and included 19 school heads selected using Slovin's sampling formula. To determine causal relationships between variables, the study utilized ordinary least squares regression (OLS).

Results showed that transformational leadership characteristics positively affected student achievement. Among headteachers' practices, the emotional factor scored highest at 1.0. The researcher recommended that administrators implement innovative strategies to enhance students' academic outcomes.

The study had several limitations. First, it connected school heads' revolutionary practices to student’s performance, whereas the present investigation examines principals' transformational leadership influence on ICT implementation in teaching. Second, the sample of 19 head teachers was relatively small and may not adequately represent the research problem compared to the current study's population of 62 principals. Additionally, the convergent parallel design used may only be effective when quantitative and qualitative findings are not contradictory.

Kiwonde's (2020) research in Tanzania examined opportunities and challenges affecting primary school teachers' ICT integration. The study identified several key impediments: computer shortages, inadequate ICT training programs, insufficient technical support services, and limited ICT resources. Additionally, the research

determined that adequate ICT resources and support services significantly motivated teachers to implement technological tools in classroom instruction. Transformational leaders can positively influence teachers' ICT adoption through educational supervision and facilitation of technology integration (Dhuey & Smith, 2014). Effective educational institution management requires optimal utilization of both human and material resources for optimal integration of ICT in instructions.

Research conducted by Adegbenro et al. (2017) in South African secondary schools revealed a significant disconnect between technological infrastructure and effective implementation. Their study of 21 volunteer teachers from two technologically well-equipped schools found that despite available resources, most educators lacked proficiency in critical digital competencies. Teachers struggled with fundamental aspects of educational technology use, including operating learning management systems, utilizing educational software, organizing digital resources, and implementing technology-enhanced instructional methods. The findings highlighted that many educators required foundational digital literacy skills before they could effectively develop and deliver technology-integrated classroom content

Despite these competency gaps, teachers maintained positive attitudes toward digital tools and curriculum integration. The study found that teachers respond well to technology guidance, and visionary principals effectively encourage ICT adoption in teaching practices.

The research had limitations, particularly its small sample size of 21 teachers, which is less representative than the current research involving 186 educators selected from 62 high schools in Kakamega. Additionally, while the Adegbenro (2017) study

focused broadly on ICT needs assessment in education, the current research specifically examines how principals' transformational leadership influences technology integration in instruction process within public high schools in Kakamega County.

Muvango (2021) investigated about in- coperation e-tools in the instruction in Kakamega County public secondary schools. Bruner's (1990) Constructivism Theory served as the foundation for his research, which used a descriptive design. The findings revealed that e-tools were available but insufficient for recurrent use; 58% of teachers lacked computer and internet expertise. The study suggests that the government should offer ample e-tools to enhance school instruction. In consultation with stakeholders, he further suggested that the government organize correspondence courses on electronic tool usage in high schools. There were a few knowledge gaps; for example, the researcher assessed the incorporation of e-resources in instructing English as a subject as opposed to the current study that looks at principals' transformational leadership influence and integration of ICT across all the subjects, the research disclosed a large proportion of teachers who lacked ICT skills. Lastly, findings showed that teachers did not frequently use e-resources. This identifies a deficiency that must be remedied. Therefore, the present investigation will address the primary objective of this researchon Principals' transformational leadership influence on e-resources incorporation in curriculum instruction in public high schools in Kakamega county.

2.6 Principal's Inspiration Motivation approach on ICT Integration in Teaching and Learning

Motivation involves the process of instilling within an individual a sense of dedication and commitment towards a specific objective. Research has consitently demonstrated that Transformational leaders engage and motivate individuals by setting explicit and significant goals cherry (2023). Principals who are transformational are characterized by their ability to create ,communicate a compelling school vision and ICT policies that are in line with the institution's objectives and appealing to the teachers (Ferguson, 2021). Teachers are inspired by principals who actively engage with them and enthusiastically communicate the school's vision. This approach motivates teachers to willingly integrate ICT into their teaching and learning processes.The Principal should communicate and make teachers understand the School's policies on using ICT, Provide both software and hardware to the teachers and offer technical support. School ICT Policies reflect a great extent on occurrences within classrooms. A collective vision is essential for elevating individuals' ambitions, providing them with a common objective, and promoting collaboration among the teachers (Yamamoto & Yamaguchi, 2019). Principals that demonstrate inspirational motivation expect their staff to meet high expectations. They furnish teachers with precise information regarding the assigned tasks and demonstrate confidence in the school vision regarding ICT. If teachers are motivated, they will conscientiously incorporate ICT into the classroom. Therefore, principals should build a vision and set standards to guide other educators in incorporating ICT into education delivery. Lancefield andRangen, (2021) believe that transformational leaders can navigate the ever-changing educational landscape

by focusing on collaboration and innovation through a well-developed ICT vision that fosters continuous educational growth.

In Malaysia Ying and Alias (2021) carried an investigation on 202 primary teaching staff to determine the degree of headteacher Digital Governance and teacher enthusiasm to use technologies in education. The inquiry was of the quantitative kind. They discovered headteachers' digital governance had a great influence on educators enthusiasm to utilize digital devices in instructions . They discovered that teachers are more likely to bring technology into the classroom when the headteacher gives a technology strategy plan and supports teachers' professional development to improve their ICT skills. The implication is that the principal's actions have a considerable impact on instructors' willingness to incorporate digital technologies into their instruction. Their study faced some setbacks, first it was conducted in Malaysia, where the environment and culture differed from the current study. The study's specific emphasis on Kenya precludes the application of its findings to other contexts. The study topic differs from the present focus on inspiration, motivation, and the use of ICT in teaching and learning. Furthermore, the researchers only performed an online poll, which may not provide thorough information. In contrast, the current study adopts a pragmatic methodology, which includes both interview guides and questionnaires. As a result, a disparity needed to be addressed.

Bizimana, Andala, and Mugiraneza (2022) asssessed the influence of teacher motivation and ICT intergration in public secondary schools in Rwanda. The study participants who filled the questionnaires were 165 teachers and principal. The researchers identified a correlation between the drive of teachers and the utilization

of innovative devices in institutions. Highly motivated instructors utilize many strategies in integrating ICT in secondary schools. However, their investigation faced several constraints. The previous study examined the factors that drive instructors, but the current study explicitly explores the influence of transformational leadership on teachers' use of ICT in teaching and learning. Thus, it is plausible that the two studies manipulate identical factors and may not produce precise data. Moreover, it is imperative to recognize that this study was conducted in Kenya, whereas the prior study was conducted in Rwanda. Consequently, the conclusions of this study may not be relevant or transferable to different circumstances.

Ronoh, Iravo, and Wanjala (2020) conducted a descriptive and exploratory study examining the impact of visionary management on the implementation of a digital literacy program in Kenya. Their focus encompassed all four facets of transformative leadership, with inspiring motivation being among them. They targeted 300 project managers and collected a sample of 171 after administering a self-designed questionnaire. The investigation discovered a noteworthy moderating influence of the legislative framework on the connection between transformational leadership and the implementation of a digital literacy program in Kenya. The study had certain drawbacks, for example, it targeted project managers and failed to mention the implementers of the project and whose department, and secondly, the method employed to collect samples is unreliable because it does not represent the target demographic.

Musau, Cheloti, and Njue (2023) conducted a descriptive study on teacher motivation and secondary school learners' academic success in Kenya. They delivered questionnaires to 91 participants, including 18 purposely selected

principals and 73 instructors chosen using a stratified and simple random sampling procedure. The study found a strong and statistically significant link between instructor motivation and performance. Motivated instructors are euthanistic and enhance their efforts to use ICT as a supportive tool to benefit themselves, students, and the school as a whole, hence motivation was regarded a key factor in predicting student progress. Transformational principals should work with teachers to foster a positive ICT environment and successfully communicate the benefits of using government initiatives.

While the current study's findings were comparable, it is necessary to note several limitations. For example,the study used a descriptive design which is known to incorporate bias into respondents' information-giving processes, potentially influencing the cause-and-effect link. Furthermore, using only a questionnaire as a research instrument may result in a lack of thorough data. Furthermore, without adequate verification of the tool, respondents may struggle to grasp specific questions and may conceal detailed information. The study on teacher motivation and academic accomplishment differs from the previous study, which focused on the motivating aspects of leadership. Finally, their study was hampered by the use of the path-goal model, which has flaws such as the reliance on leadership having direct control over the rewards given to employees, as opposed to the current study of transformational leadership, in which the leader involves teachers in achieving the institution’s goals.

Otieno (2022) conducted a study in a public secondary school in Kisumu to examine the on how principals affect the incorporation of ICT in teaching and learning. The variables under investigation encompassed the support for teachers ICT

training,establishment of school ICT policy, maintenance of ICT equipment and provision of ICT eqquipment, all of which influenced the implementation of digital use in classroom setting. The study utilized a concurrent triangulation mixed research design, which was based on the Learning Organization Theory by Senge. The study focused on 1359 participants, stratified technique was used to choose 99 administrators while saturated sampling technique was applied in choosing 93 Head of departments and 28 Assisstant heads of schools . The research results demonstrated that the principal's facilitation of ICT training, provision of ICT equipment, and equipment maintanance had a desirable outcomes on the incorporation of ICT in school classroom setting in Kisumu County. The research results potray that the ICT policy has a undesirable results on the integration of ICT. This contradicts the current findings, where teachers said that the ICT policy really helped them use ICT equipment at the headteachers' office, therefore making their work more convenient. Teachers expect the introduction of rules to avoid any adverse outcomes or improper use when expanding ICT equipment (Giriraj, 2015).

However, the study faced significant drawbacks. Initially, the investigation purposed to ascertain the influence of administrators on the incorporation of technology, but it failed to clarify the particular aspect of leadership that was under investigation. Conversely, the present study investigates the influence of inspiration and motivation on transformational leadership, particularly within the framework of teachers incorporating ICT in their teaching and learning practices. Furthermore, the study was grounded on organization theory, which primarily focuses on transactions. This philosophy prioritizes employee effectiveness over situational and environmental factors. The narrow emphasis on environmental elements has the

potential to discourage teachers. The present study was motivated by the concept of transformational leadership, which involves inspiring and encouraging teachers to effect change in order to accomplish the school's objectives. The research utilized a convergent parallel design, which is effective only when quantitative and qualitative findings align.In contrast, the present study employed an explanatory sequential mixed methodology, which has been shown to have an advantage in that quantitative data enhance qualitative conclusions.

2.7 Principal's Idealized Influence Approach on ICT Integration in Teaching and Learning.

Idealised influence refers to the principal's ability to captivate and inspire teachers, students and those around them through exemplary behaviour. Principal's behaviour is measured with ethical management of teachers particularly,in areas related to utilization of ICT, school policy and vision in classroom. Successful intergration of ICT in teaching and learning starts with the principapls, beliefs, ICT vision and ethical values (Kholi 2021). It is worth to also note that transformational leaders influence their followers through traits that exhibit ethical values such as responsibility, respect, and commitment (Yamamoto & Yamaguchi, 2019). Teachers are attracted to principals responsible for their actions and transformational principals supporting technological change. The Principal's responsibility is to ensure that learning occurs in a conducive environment. They will win the trust of students and teachers in promoting ICT in the classroom.Dexter (2018) emphasizes that principals, in addition to developing a school vision aligned with ICT integration goals, should leverage individual skills and serve as role models for

teachers in using ICT for teaching and learning. Dexter also suggests that principals should encourage and collaborate with teachers to enhance educational outcomes.

Yukiko Yamamoto (2021) explored the relationship between ICT implementation in Mongolian primary schools and transformational leadership, focusing on idealized influence Using correlation analysis, The data was gathered from 222 school leaders across five regions.The study identified a correlation between the prevention of illegal and ethical issues in ICT use, the school's mission and vision, and ICT integration. Principals' behavioral attributes were found to be critical for ICT use in classroom teaching. Additionally, teachers' collaboration, which fosters innovation, was associated with both the use of ICT in teaching. This study will examine principals'idealized influence in integrating ICT in teaching and learning in public secondary schools in Kakamega county.

Afshari (2021) conducted comparative research examining about the Exemplary influence (idealized aspect) of visionary leadership and workforce dedication in American and Iranian contexts. Questionnaires were administered across all organizational levels in both countries. The study collected 189 completed questionnaires, achieving a 56.7% response rate.

The findings discovered a statistically significant associations between both forms of exemplary influence of visionary leaders and workforce dedication in the Iranian sample. In contrast, the Australian sample showed that only modeling aspect of the managers behavior had undesirable results on workers dedication. The research also determined that identified motivation served as an intervening factor in the association between exemplary influence behavior and the workers dedication. The motivating factors are likely the ethical values familiar to individuals. Teachers feel

respected when principals address their requests concerning ICT tools in an ethical manner.

Musyoki, Okoth, Kalai, and Okumbe (2021) investigated the principals' transformational leadership component of idealized influence and its impact on learners' performance-oriented. The research involved 12 Ministry of education officials, 729 educators, and 111 administrators. 729 teachers. The researchers used interview schedules and questionnaires as reserch instruments to gather data .Results showed that principals' attributes had a notable impact on students' academic performance. By demonstrating leadership from the front, principals serve as role models for their educational communities.Teachers are drawn to leaders who lead by example and are more likely to emulate their approach, including the integration of ICT into teaching activities without coercion. Exemplary influence is the way the subjects percive the behaviour or actions of their leaders be (Afshari, 2021). This study will therefore examine how principals' idealized influence affects teachers' integration of ICT in teaching and learning.

Kitur, Choge, and Tanui (2019) examined whether principals' transformational leadership influenced students' academic success in Kenyan secondary schools. Their research compared the supposed influence of principals on pupils' academic performance. The researcher recommended that principals must display idealistic behavioural qualities to encourage facilitators adoption of technology in classroom instruction. There are some restrictions on this study project. First, the current study focused on students' academic performance to transformational leadership style rather than the influence of transformational leadership and the use of ICT in instruction in public high schools. Second, the descriptive methodology used by the

investigator made it impossible to determine the cause-and-effect correlations for survey participants who might not have been completely truthful in their responses. A mixed methods approach will be used in my investigation, which could provide a clear picture of the study. resulting in a knowledge gap that needs to be filled. In order to ascertain whether the idealized feature affects the integration of ICT in curriculum instruction,. As a result, this study sought to examine the idealized aspect of Principals and its integration of ICT as well as their influence on learning outcomes

Gacicio (2022) conducted a study in Kenyan public primary schools, with a sample population of 6,150 to investigate the influence of transformational leadership, school environment, self efficacy and ICT integration in teaching and learning. The findings revealed that ICT integration was significantly influenced by leadership style, with self-efficacy and school environment serving as moderating variables that indirectly predicted ICT integration. These findings highlight the pivotal role principals play in implementing ICT in schools. Teachers are more responsive to leaders who are accessible, have clear ICT strategies, and actively involve them in decisions regarding ICT implementation. However, the study had several limitations. First, it focused exclusively on primary schools in Nairobi, which may present a different context from the current study conducted in public secondary schools in Kakamega. Additionally, the broad scope of the study, which investigated multiple variables (transformational leadership, self-efficacy, school environment, and ICT integration), may have affected the precision of the results. In contrast, the current study maintains a more focused approach by examining specifically the relationship between transformational leadership and ICT integration in teaching and learning.

2.8 Summary of Literature Reviewed and Research Gaps

Transformational Leadership continues to attract the attention of many scholars interested in the topic, especially during this digital era the 21st Century. Transformational leadership is beyond a system of rewards. It is more of charisma; the leader focuses on spearheading any identified organizational change guided by a well-shared vision. They inspire the teachers to work as a team towards achieving the set target.

Bass and Avolio (1994) identified four aspects of transformative leadership that characterize a leader's traits: "Individual consideration, intellectual stimulation, inspirational motivation, and idealized influence." They further described them, as the four "I" s. Leaders should have an insight into the new methodologies that come up with advanced technologies to urge teachers to use digital tools in the classroom. ICT in Education ensures that global information is at the student's quick reach and utilization, leading to good educational outcomes. Consequently, use of ICT stimulates the curiosity and discovery capacities of the learner. This has been applauded as a highly active approach to learning, where the teacher is considered a facilitator. Through ICT, teachers create interactive classes utilizing technology to explain complex instructions to the students, thereby assuring the enjoy ability of the lessons, improving the learner's ability to solve problems leading to excellent academic outcomes.

Several studies conducted on leadership in western and African contexts, reveal that extensive knowledge still needs to be researched. Though many studies have investigated leadership and ICT integration in developed and developing content, there is a lack in the existing literature that the present investigation intends to fill.

Therefore, this research intends to explore the role of the principal's transformational leadership in integrating ICT into classroom delivery in Kakamega county government-funded schools. The researcher will mainly use the Transformational leadership theory to fill the gap.

Table 2.1: Literature Gaps

Innovator	Focal -Point	Results	conceptual gap
	Principal' Individual consideration approach influence on ICT intergration in teaching and learning		
Ferguson, Mary E. (2021).	Focused on Transformational Leadership and ICT integration during the Covid -19 crisis. digital technology in primary schools' education in Columbia.	The study reported interconnections between the elements of transformational leadership and the integration of ICT in classrooms. Headteachers had a positive influence on teachers' use of ICT by providing tutorial links. A good number of teachers expressed a need for further professional development.	The study was conducted in Columbia and sampled 29 teachers sampled using convenience sampling, which could likely affect the results as they were dealing with accessible population, The skill gap was pointed out on ICT use by the teachers. Present study 186 teachers sampled Multistage sampling techniques used Conducted in public secondary schools.
	Principals' intellectual stimulation approaches influence on ICT in teaching and learning in public seconda		
Maria-Luisa at el.(2023)	Focused on Transformational leaders and empowering teachers to use technology in schools in Switzerland	findings reported a strong correlation between transformational leadership and the technology use in instructions. However, digital infrastructure was not a predictor of ICT integration in schools in Switzerland, suggesting that other factors may influence ICT integration.	The study was conducted in Switzerland under different environment, The study sample was large spreading in all upper secondary schools in Switzerland results may report different resource availability, research design was descriptive which has limitation on biasness, regarding it was an online survey The current investigation took place in Kenya and centred on transformational leadership and integration of ICT. Sample size was 186 from public secondary schools In Kakamega county

Innovator	Focal -Point	Results	conceptual gap
			Multi -stage sampling methods were used
Muvango (2021)	Focus was on in-cooperation e-tools in the instruction in public secondary schools in Kakamega County	The study reported that the English majority of teachers were not competent to use e-material in class even with the adequacy of the e-resources	The study focused on English teachers only and used constructive theory which is known to be difficult to implement on short time during a lesson of 40 minutes. The study investigated on factors failed to be specific on the problem. The present study used on transformational leadership approach on integrations of ICT and used the transformational theory which is known to advocate for change and involvement of the staff and all.
	Principals' inspirational motivation approaches influence on ICT integration in teaching and learning in public s		
Ying and Alias (2021) In Malaysia	Focused on headteacher technology leadership and teacher enthusiasm to use technologies in education.	The findings showed a relationship between technology leadership and ICT integration. The majority of teachers were willing to integrate technology if supported by a technology strategy plan. Additionally, many teachers expressed the need for professional development to improve their ICT skills.	Study was conducted in Malysia primary school, while this studywasconducted in Kenya under different environmental context where the results could not be generalized. The study looked into Principals' technology leadership while the present study is about principals' transformational leadership and ICT integration.
Gacicio .E (2022)	The Focus area was School environment, Teacher efficacy, Transformational leadership, and ICT	The study reported that ICT integration was influenced with leadership, also found self-efficacy and school environment as moderating variables were indirect predictors of ICT integration	The study was Conducted in Nairobi not Kakamega, looked to Transformational leadership, school environment, and self-efficacy and integration of ICT which could not clearly bring the aspect of transformational leadership and ICT integration as the

Innovator	Focal -Point	Results	conceptual gap
	integration in classroom within Nairobi primary schools.		research area was wide, I like the current study which look on Transformational leadership and ICT integration.
	Principals' idealized approaches influence on ICT integration in teaching and learning in public high schools i		
Adegbenro, Gumbo, and Olakanmi (2017)	The research focused on conducting a needs assessment in secondary schools in South Africa, to identify the challenges teachers face when implementing ICT in classroom instructio .	The majority of teachers lacked the necessary skills to use ICT applications, such as web design and electronic teaching tools. Many teachers reported a lack of competencies and expressed a need for professional development.	The investigation took place in South African elementary schools and 21 in-service instructors were sampled. The instructors engaged in professional development over a short period of 2-3 weeks.The findings from this study may not be generalized to the Kenyan context due to distinct features in educational environments and challenges. Additionally, the brief professional development period is insufficient to determine the impact of leaders' behavior on ICT usage. In contrast, the present took place with a sample of 62 public secondary schools in kakamega county in Kenya. The previous study focused on technological leadership and the challenges teachers faced in using ICT. However, the present study examines principals 'transformational leadership and ICT integration.
Gyansah (2020)	Study was based on Effects of Transformational	Results showed that the transformational leadership approach of principals influenced Pupils' educational performance.	The study was conducted in high schools in Ghana with a small sample size of 19 principals. The findings may not be generalized to the Kenyan

Innovator	Focal -Point	Results	conceptual gap
	leadership on students performance in Ghana high schools.		context due to the differences in educational environments and challenges. The present study was conducted in Kenya with a larger sample size of 62 public secondary schools. Additionally, the previous study only linked transformational leadership to academic achievements, without addressing the integration of ICT. The small sample size in the Ghanaian study may not be sufficient to determine the integration of ICT in teaching and learning
Kitur,choge and Tanui 2019 In Kenya	The research examined how secondary school principals' transformational leadership approaches affect student performance.	The results found that the idealized influence behaviour of principals' had a significant impact on learners' performance. It was recommended that principals should adopt and strengthen their idealized influence to further enhance performance.	The research examined connections between transformational leadership and student outcomes but overlooked how principals' transformational leadership influences ICT integration in educational practices. The research employed a descriptive approach, which tends to imply causation and potentially produces skewed survey responses. It neglected to implement a mixed-method sequential explanatory framework, which combines quantitative and qualitative elements to reinforce each other and potentially yield more thorough findings.

CHAPTER THREE

RESEARCH DESIGN METHODOLOGY

3.1 Introduction

Research methodology is a framework that outlines detailed information or procedure followed in a study. This is significant as it gives clear meaning to the facts in question Kothari (2011). The chapter focuses on the study design, study varriables, Location on the study, population targeted, sampling techniques and sample size, tools for collecting data, the pilot study, data collection procedure, analysis and presentation, and the ethical and legal considerations.

3.2 Research Design

The researcher utilized a sequential explanatory approach within a mixed-methods research design to investigate how principals' transformational leadership influences Information Communication and Technology integration in public secondary schools across Kakamega County. In this This technique both quantitative and qualitative data will be collected in two distictive phases and different dates as per the schedule.According to Olive and Abel (2019), the sequential explanatory approach integrates data from each phase to complement and strengthen one another, thereby minimizing the limitations and weaknesses inherent in both data that was qualitatively and quantitatively gathered. This design was adopted by the researcher because the quantitative results could be enriched and substantiated by qualitative insights, contributing to deeper understanding and stronger rationale for the research objective. The researcher collected data on transformational leadership influence on ICT integration using closed-ended questionnaires during the first phase. In the qualitative phase, constructivism was applied to analyze data gathered

from open-ended questions and interviews, considering theoretical assumptions regarding the constructs of transformational leadership (Exemplary influence (idealized) inspirationalmotivation, Cognitive stimulation and Personal attention) and their impact on the ICT integration in teaching and learning in Kakamega county public high schools.

The figure below depicts the Sequential Explanatory process

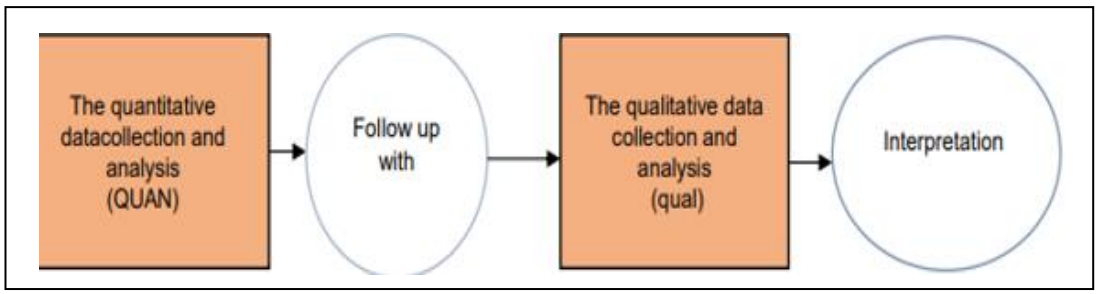

Figure 3.1: Sequential Explanatory Process Source Creswell (2014)

The figure above shows the procedure followed by the researcher using a mixed method sequential explanatory design. The researcher gathered quantitative data first through closed-ended questions, analyzed the findings and followed-up using interviews.

Data collected from participants filling the closed ended questions could influence the researcher's approach to the following sample, primarily where the respondents would not have understood some of the questions; the researcher developed and modified the interview guides to shape the reaction to the questions (Cohen, Manion, and Morrison 2018).

3.3 Study Variables

The study categorized variables in to three; Independent, dependent and Moderating variables

3.3.1 Independent Variable

The Predictive (independent) variable was the principals' transformative leadership approach. The indicators of transformational leadership were as follows:

Individual Consideration: Focused on principals' support for ICT infrastructure and the provision of digital resources to assist teachers in integrating technology into teaching.

Intellectual Stimulation: Examined staff development, fostering innovation, enhancing commitment, and building trust among teachers.

Inspirational Motivation: Assessed whether principals supported the development of a shared school vision, ICT policies, and communication structures aligned with school objectives to encourage ICT use among teachers.

Idealized Influence: Explored the ethical values established by principals and their role as exemplary leaders in spearheading the use innovative devices within the school environment.

3.3.2 The dependent Variable

Teachers' classroom integration of ICT for instruction was the dependent variable in this investigation. This was evaluated by assessing different dimensions of ICT implementation, including:

Frequency of ICT use: How often teachers utilized digital tools in their teaching practices.

Range of tools used: This included projectors, film clips, smartboards, educational apps, online platforms, and other digital teaching aids.

Innovative teaching approaches: The extent to which teachers leveraged ICT to create engaging, interactive, and student-centered learning environments.

Student engagement and participation: Observing how ICT tools were used to enhance students' involvement and collaboration in lessons.

Assignment and assessment: How teachers used ICT platforms for assigning tasks, conducting quizzes, and evaluating students' performance.

Resource creation and sharing: Educators' capacity to develop digital educational materials and distribute them to both students and peers.

3.6.3 Intervening Variables

The intervening variables included:

Teachers' competencies in ICT: Assessed their digital literacy proficiency and ability to seamlessly integrate technology into teaching.

School location: Influenced accessibility to ICT resources, particularly in rural versus urban areas.

CDF (Constituency Development Fund) and bursaries: These supported learners by ensuring consistent school attendance, indirectly enabling ICT integration.

Government ICT policies: Provided guidelines and frameworks for the adoption and utilization of ICT in schools, influencing both resources and practices.

These moderating variables played a critical role in amplifying the impact of the independent variable (transformational leadership) on the dependent variable by addressing potential barriers and enhancing ICT adoption in classrooms.

3.4 Location of the Study

This research took place in Kakamega County, situated in western Kenya, approximately 30 kilometers north of the Equator and 52 kilometers north of Kisumu city. With an average elevation of 1,535 meters, the county serves as a significant administrative center in what is traditionally known as Luhya land. According to the 2019 census, Kakamega County has a population of 1,867,579 residents.

The county is administratively divided into twelve constituencies: Matungu, Shinyalu, Lurambi, Ikolomani, Lugari, Malava, Navakholo, Likuyani, Mumias west, Mumias East,Butere and Khwisero.The region is characterized by high population density and diverse economic activities, primarily including small-scale businesses and subsistence farming, with some residents engaged in sugarcane and maize cultivation. The area receives substantial annual precipitation and is home to the Kakamega Forest, a preserved remnant of a rainforest that historically extended westward into Uganda.

Following Kenya's 2010 constitution and subsequent devolution, the county government has become a significant employer, with many residents working in county offices. The education sector in Kakamega County is predominantly public, with only two national schools and several county schools. This study specifically

focused on public schools due to two key factors: first, the county government's initiative to integrate ICT across all service providers, including educational institutions; and second, the clearly defined supervisory roles of principals in public schools, particularly in curriculum implementation. Private schools were excluded from the study as their administrative structure often differs, with principals sometimes serving dual roles as school directors, which could potentially affect the standardization of ICT implementation and supervision practices

3.5 Target Population

This research concentrated on 69 public secondary schools in Kakamega County that had ICT technologies installed, following Kenya Institute of Curriculum Development (KICD) recommendations. The study targeted a population of 6070 individuals, consisting of one county QualityAssurance and Standards Officer (CQUASO) ,4140 form three learners, 1860 educators and 69 administrators from public secondary schools,

Principals were included as part of the target population due to their role as heads of their respective schools. They were considered reliable sources of information on the extent of ICT usage in classrooms. Additionally, principals are responsible for maintaining key school records, such as KCSE results, ICT policy documents, and ICT inventory records, making them well-positioned to provide comprehensive and accurate data relevant to the investigation. Educators were included in the study as they represent the main executors of ICT within the classroom settings and operate under the supervision of their principals. Their input offered valuable perspectives on transformational leadership and ICTusage. Form Three students were selected as they had spent considerable time in their schools, enabling them to observe and

assess the implementation of ICT in teaching. Their feedback helped demonstrate whether teachers effectively utilized ICT in their instructional practices.

Finally, the County Quality Assurance and Standards Officer (CQASO) was included to provide oversight information, leadership insights, and evaluation reports on ICT integration in secondary schools within their jurisdiction.

Table 3.1: Target Population

Respondents	**Target Population**
Principals	69
Teachers	1860
Students	4140
CQASO	1
Total	**6070**

Source: Kakamega County Education Office.

3.6 Sampling Techniques and Sample Size

Sampling is the process of selecting a subset of cases from a larger population to draw conclusions that accurately represent the whole population (Orodho, 2017).In this study, census technique, simple sampling and purposive sampling, methods were utilized.

3.6.1 Schools

The researcher employed both census and purposive sampling techniques to study all 69 public secondary schools and their respective principals in Kakamega County. Stratified sampling was not necessary as the schools were already stratified within their administrative categories. The census approach was justified by the relatively small number of national and county schools in the region, as well as their

accessibility, which facilitated comprehensive data collection on transformational leadership and ICT integration in teaching and learning. This approach aligns with Kothari,(2013) recommendation that census sampling is appropriate for small, manageable populations. The decision to include all 69 schools and their principals was further justified as the principals' leadership behavior constituted the study's independent variable, necessitating comprehensive data collection. Additionally, Principals were purposively selected to participate in the interviews in order to strengthen the qualitative component of the mixed-method sequential explanatory research design.

3.6.2 Sampling of Teachers and Students

The researcher employed Slovin's (1960)Formula to determine the sample sizes for both teachers and students, as this method was appropriate when working with known population sizes and incorporating margin of error to ensure reliable data. The formula is expressed as:

$$n = \frac{N}{(1 + N * e^2)}$$

where:

N = Total population size

e = margin of error

n = Target sample size

For Teachers:

$$n = \frac{1860}{(1 + 1860 * 0.069^2)}$$

=188.7

Total Population (N) = 1,860

Target Sample Size (n) = 186

Margin of Error (e) = 6.9%

For Students:

Total Population (N) = 4,140

Target Sample Size (n) = 372

Margin of Error (e) = 4.87%

$$n = \frac{N}{(1 + N * e^2)}$$

$$n = \frac{4140}{(1 + 4140 * 0.0487^2)}$$

=382.67

The margins of error (6.9% for teachers and 4.87% for students) fall within the acceptable range of 5-10% for social science research. The sample size for teachers (186) represented 10% of the total teacher population, aligning with Kothari's (2004) recommendation that a minimum sample of 10% provides good representation for smaller populations.

To ensure equitable representation across schools, the researcher employed proportional allocation for both students and educators. For educators, with a sample size of 189 distributed across 69 targeted schools, the calculation yielded 2.7 teachers per school (189 ÷ 69), which was rounded up to 3 teachers per school for practical implementation. Similarly, the student sample of 383 was proportionately allocated across the 69 schools, resulting in 6 students representing each school (383 ÷ 69). For both teachers and students, simple random sampling was employed using an odd-even numbering system. Participants were selected through a process where numbers were placed in a sealed tin with a small aperture, and those who drew even

numbers were included in the study. For students, the selection was specifically focused on Form 3 students, who were chosen because they are key beneficiaries of ICT in education and could validate the teaching and learning practices in their schools. The sampling procedure aligned with guidelines recommended by Orodho, Khatete, and Mugiraneza (2016).

3.6.3 Sample Size

The total sample size was 621 participants, comprising 62 school administrators, 186 educators, 372 learners, and 1 CQUASO.

The results of the application of various sampling techniques are illustrated in Table 3.2 below to arrive at a representative sample of the study population. There after,One hundred and eighty-six (186) teachers were sampled, representing 10% of the teacher target population. From the student target population of 4,140, three hundred and seventy-two (372) students were sampled, representing 10% of the student target population. Sixty-two (62) principals were sampled, representing 89.85% of the principal target population.

Table 3.2: Sample Size

Respondents	**Target population**	**Actual sample**	**%**	**Method**
Principals	69	62	89.85%	purposiv
Teachers	1860	186	10%	Single r
Students	4140	372	8.98%	Single random
CQUASO	1	1	100%	Purposiv
Total	**6070**	**621**		

Table 3.3: Population Size

Category School	Number of Schools	Principals	Teachers	Students	County Educ. Officer
National	2	2	60	120	-
Extra-County	26	26	780	1560	-
County	41	41	1230	2460	-
Total	**69**	**69**	**2070**	**4140**	**1**

Source Kakamega County Education Office.

3.7 Description of Research Instruments

Creswell (2014) describes data collecton as the process of gathering information from the respondents participating in the study. The investigator used questionnaires to gather data from teachers and learners and interviews to generate data from the principals. The researcher also used Observation checklists to collect primary data on available ICT facilities in the institution.

3.7.1 Structured Questionnaires

The research methodology incorporated two key assessment tools. Administrators and educators completed the Multifactor Leadership Questionnaire (MLQ) Form 5X (Bass & Avolio, 2000), which was adapted to evaluate transformational leadership specifically within educational settings. Students participated through a separate, dedicated questionnaire.

The principals' and teachers' questionnaire were structured in two main sections: Section A gathered demographic information, while Section B assessed transformational leadership domains in relation to ICT integration. Responses were collected using a five-point Likert scale: Strongly Disagreed (1), Disagreed (2), Undecided (3), Agreed (4), and Strongly Agreed (5). Both administrators and

educators provided their perspectives on transformational leadership behaviors across four dimensions: cognitive stimulation, exemplary influence, inspiration motivation and individual attention on ICT integration in teaching and learning. The questionnaire was administered to 62 principals and 186 teachers across 62 schools. This instrument was particularly appropriate as it had been widely used in organizational settings where influence outcomes were measured (Bass and Avolio 1995), and it served as a foundation for developing interview questions for the subsequent qualitative phase of the study.

The students' survey tool was split in two parts . part A collected demographic information, while Section B focused on aspects of the principals's behaviour regarding ICT integration. Using the same five-point Likert scale, students responded to closed-ended questions regarding the frequency of ICT tool usage in their classrooms by instructors and principals, as well as their personal experiences with ICT. The questionnaire was administered to 372 students across the same 62 schools.

The choice of questionnaires as the primary data collection method was justified by their efficiency in reaching a large number of participants within a limited timeframe and their ease of completion. This approach aligned with the study's sequential explanatory mixed-method design, enabling comprehensive data collection from principals, teachers, and students to provide complementary perspectives on ICT integration and transformational leadership in schools.

3.7.2 Interview Schedules

The researcher collected data from selected participants who volunteered for interviews during the qualitative phase of the study. The Post-Positivism Paradigm places behavioral analysis at its core, reflecting the shared understanding among scholars like Creswell (2014) and Assalahi (2015) that positivist researchers understand knowledge as something that can be observed and measured quantitatively.

The investigator conducted interviews with administrators to gain insight into their impact on technology integration in schools. The CQUASO was also interviewed to validate the assessment tool's components regarding principals' transformational leadership influence on incorporating ICT into teaching and learning processes. Teachers and students were also interviewed for more clarification on the Principal's behavior and ICT integration. The instrument was suitable as it provided the investigator with the authority to interrogate the participants and make suggestions, encouraging participants to provide information . Mugenda and Mugenda, (2012). This approach aligned with the sequential explanatory design.

3.7.3 Observation Checklist

According to Kothari (2013), observational checklists serve as tools for researchers to gather data by systematically monitoring and documenting variables in their authentic environments, allowing for assessment of behavioral patterns as they naturally occur.The researcher employed this checklist to verify innovative devices and their applications in schools and to determine whether these technologies were in proper working condition for classroom use.The data was used in validating

educators and learner responses on various aspects of Principals'behaviour on technology executions in school.

3.7.4 Focus Group Discussions

The investigator conducted discussions with carefully selected groups of six members each - an optimal size for meaningful dialogue , Krueger and Casey, (2009) The discussions centered on transformational leadership's four dimensions (individual attention, cognitive stimulation, inspirational motivation, and exemplary influence) and their relationship to ICT integration.

Prior to discussions, the researcher established rapport to create a comfortable environment. Conversations were audio-recorded, transcribed, and the recordings were subsequently deleted for confidentiality. The focus groups included form three learners as key stakeholders since they are the primary beneficiaries of ICT integration in education. Their participation was crucial in validating principals' efforts in creating supportive ICT environments, acknowledging that effective ICT integration requires active student engagement in the learning and teaching process.

These discussions strengthened the quantitative component of the mixed-method explanatory design by providing rich, contextual insights into how transformational leadership practices influence ICT adoption in schools. The qualitative data gathered helped explain and elaborate on patterns observed in the quantitative findings.

3.7.5 Document Analysis Checklist

According to Corbin and Strauss (2008), document analysis represents a methodical approach that applies qualitative methodologies to examine both printed and digital materials within a defined geographical context.The technique was chosen by the

researcher because it is cost effective in data analysis. Inventories of The School ICT policies on digital tool use, KCSE result analysis, and classroom registers were among the data that had been analyzed. The data was analyzed thematically.

3.8 Pilot Study

To establish the reliability and validity of the research instruments, a pilot study was conducted in seven purposively sampled schools from the intended study group. These schools were excluded from the main study. The pilot sample consisted of 7 administrators, 21 educators, and 42 learners, all selected through simple random sampling. Participants provided feedback on principals' transformational leadership and its impact on ICT integration in teaching and learning processes within public secondary schools in Kakamega County.The sample size for the pilot study aligned with Orodho's (2017) recommendation that a pilot study should comprise approximately 10% of the target population.

3.9 Validity

Gay (2010) contends that a research tool's accuracy depends on how well it captures the desired variable. The study enlisted the aid of specialists from the department of education management policy and curriculum studies to validate questionnaire items by making sure that any undesired construct domains were excluded and the tool accurately represented the study's goals. They evaluated and scored the grammer and facts utilized in the interview guides , observation checks and questionnaires, for relevancy. Following that, the researcher calculated a content validity index using a Likert scale, with 4 denoting highly relevant, 3 denoting moderately relevant, 2 denoting somewhat relevant, and 1 denoting not. They provided feedback on how well the instruments captured the content related to the Exemplary

influence(Idealized), inspiration motivation,conginitive-stimulation, and individual attention influence on ICT integration in secondary schools in Kakamega county. This feedback was incorporated into the tool before use and determined the content index that the researcher used to establish the instruments validity (Orodho, 2009). Questions achieving a content validity score of at least 0.75 were retained, while those with a lower score were changed in accordance with the advice of experts. High reliability scores and rates for validity tests are signs of validity (Creswell, 2014).

3.10 Reliability

Reliability, as defined by Kothari (2011), measures an instrument's consistency across multiple trials. The purpose of conducting reliability testing was to identify and eliminate potential errors before the main study, thereby ensuring the accuracy and dependability of the research tools. The researcher determined questionnaire reliability by implementing a test-retest methodology. This process involved visiting the selected schools over a two-week interval and administering a set of questionnaires. In the first week, the instruments were given to 7 principals, 21 teachers, and 42 students. After collecting the initial responses, the same instruments were distributed again to the identical group of respondents two weeks later. The responses from both administrations were compared to assess the consistency of information and point out any key inconsistencies in the instruments. The quantitative reliability analysis utilized Statistical Package for Social Sciences (SPSS) version 21.0. To evaluate the consistency of statements within each component of transformational leadership and ICT integration in teaching and learning, the researcher applied Cronbach's Alpha testing. Cronbach (1951) suggests

that instruments with Alpha values of 0.75 or above demonstrate acceptable reliability. Analysis results confirmed internal consistency across all items, with Cronbach's Alpha coefficients surpassing the 0.70 threshold.

To assess the validity of the qualitative interview responses, the researcher conducted member-checking. Twenty individuals were tasked with reviewing the transcribed audio recordings from the interviews to affirm the correctness of the responses. This procedure helped validate the qualitative data collected during the interview phase. Following the results received, necessary corrections were applied to the instruments prior to their implementation in the main study.

3.11 Data Collection

According to Orodho's (2009) classification, the data gathering occurred across three sequential logistical stages: pre-field preparations, active fieldwork operations, and post-field processing.

3.11.1 Pre-Field Logistical Phase

The investigator requested a clearance letter from the Kenyatta University Graduate School as well as certification from the University's Ethics Review Board (KUERB) showing that the university sanctioned the study. The researcher then obtained a permission from the National Science and Innovation Research (NACOSTI) to collect data in Kakamega County. The commission notified the county commissioners and county directors. The directors alerted the sub-county directors, who then notified the principals of public secondary schools.

3.11.2 Fieldwork Logistical Phase

The researcher, accompanied by research assistants, became acquainted with the surroundings and met the respondents. The goal was to find out when they were available and to establish a rapport with them. When gathering data, the researcher obtained permission from the principals of public secondary schools, who then notified the various respondents drawn from their individual schools. Finally, the study instruments were distributed electronically to individual respondents with the assistance of research assistants.

3.11.3 Post-Field Logistics Phase

Data extracted from questionnaires, interview schedules, and observation checklists can be difficult to interpret and understand; therefore, the researcher cleaned the data collected, edited and examined all completed questionnaires to eliminate errors by respondents, and transcribed it with the help of research assistants. She thanked the research assistants for their contributions and disbanded the group

3.12 Data Analysis and Presentation

The researcher utilized the Statistical Package for Social Sciences (SPSS) to analyze data collected through questionnaires. The analysis was conducted in alignment with the study objectives to test the hypotheses.The research employed a dual analytical approach across all five objectives: quantitative findings were organized in tables and subjected to linear regression analysis, while qualitative information underwent thematic examination and was presented through narrative descriptions.The study employed both inferential and descriptive statistics for comprehensive data analysis.

The research utilized a sequential explanatory mixed-method approach, implementing a two-phase data collection strategy. In the first phase, the researcher administered quantitative survey instruments to Principals , educators , and focus groups who completed them. Based on responses gathered in the quantitative phase, the researcher organized a second phase consisting of in-depth discussions with principals and educators, along with focus group discussions involving selected learners who were specifically sampled for this qualitative component. The questions were organized according to the study objectives and analyzed using both descriptive statistics (such as frequencies, percentages, means, standard deviations) and inferential statistics (including regression, multiple regression model, and Pearson correlation analysis).

The quantitative data was analyzed using SPSS and presented in tables. The participants responded to statements that aligned with the subconstructs of transformational leadership and ICT integration in teaching and learning. These statements were placed on a five-point Likert scale ranging from 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree to determine the influence of a transformational principal's leadership on the incorporation of ICT in curriculum instruction. The researcher calculated the weighted average by obtaining the mean of the various components of transformational leadership using SPSS..Table 3.3 clarifies the weighted average for the Likert scale. The interval used is 0.8 (4/5). The formula used to arrive on the interval was, Interval = Range/ Number of scales Where, range = highest – lowest = 5-1 =4 and, number of scales: 1, 2,3,4,5

Weighted average of 1.00-2.59 indicates disagreement to a statement while a range of 3.40-5.00 indicates agreement to a statement. Specifically, weighted average of 1.00-1.79 represents strongly disagree; 1.80-2.59 represents disagree; 2.60-3.39 represents neutral; 3.40-4.19 represents agree and 4.20-5.00 represents strongly agree.

Table 3.4: Analysis of Weighted Means for Likert Scale

Weighted average	Result	Result interpretation
4.20 – 5.00	Strongly Agree	Very influential
3.40 - 4.19	Agree	Influential
2.60 - 3.39	Neutral	Do not know
1.80 - 2.59	Disagree	uninfluential
1.00 - 1.79	Strongly Disagree	Very uninfluential

Source: Abd-Elfattah (2008), Salem (2015)

In inferential analysis, the study used correlations and regression to examine the strength of the study variables: principal's transformational leadership components (Individual consideration, Intellectual stimulation, inspirational motivation, and Idealized influence) as independent variables and ICT integration in teaching and learning as the dependent variable.

The study employed Linear Multiple regression analysis, which can be represented by the equation:

$Y=\beta0+\beta1X1+\beta2X2+\beta3X3+\beta4X4+\varepsilon Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon Y=\beta0+\beta1X1+\beta2X2+\beta3X3+\beta4X4+\varepsilon$

Where:

Y = ICT integration in teaching and learning (dependent variable)

β_0 = Constant (Y-intercept)

β_1X_1 = Individual consideration

β_2X_2 = Intellectual stimulation

β_3X_3 = Inspirational motivation

β_4X_4 = Idealized influence

ε = Error term

The selection of this regression model was based on its ability to assess model fitness, specifically its capacity to quantify what percentage of ICT integration variance could be attributed to transformational leadership factors. Statistical significance of the relationship between principals' transformational leadership elements and technology integration in educational practices was determined through analysis of variance (ANOVA). To evaluate both the intensity and directionality of each transformational leadership component's effect on ICT integration, regression coefficients were employed, which subsequently facilitated hypothesis testing. The hypothesis underwent significance testing with results displayed in tabular format.

3.12.1 The following objectives guided the data analysis.

The study investigated five objectives focusing on transformational leadership's influence on ICT integration in teaching and learning in public secondary schools in Kakamega County. The first four objectives examined specific constructs of transformational leadership, while the fifth objective provided a comprehensive analysis of their interconnected influence.

Objective One investigated principals' individual consideration and its influence on ICT integration in teaching and learning. This dimension explored how principals addressed individual needs, provided personalized support, and created opportunities for professional growth in technology integration. Teachers rated their principals' behaviors using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

This way mainly to establish if there was a link between the principal's behavior and the teacher's integrating ICT in teaching and learning. Principals self-rated on the same assertions. Learners validated principals' behavior regarding ICT instruments' availability and accessibility. To validate and deepen the quantitative findings, principals and teachers participated in interviews to clarify areas from the questionnaires. Focus group discussions were also conducted to examine whether schools had adequate ICT facilities and if students and teachers could access them effectively. This qualitative component was particularly important in validating principals' behaviors regarding their consideration of stakeholder needs, as teachers cannot effectively implement technology without student access in the classroom. All responses were recorded with consent and transcribed into detailed narrations. For statistical analysis, hypotheses of significance were tested, and a model summary was developed to determine if individual consideration served as a predictor variable for ICT integration. ANOVA was conducted to establish the variance in the responses

Objective Two focused on principals' intellectual stimulation and its impact on ICT integration, examining how principals encouraged innovation, creative problem-solving, and new approaches to incorporating technology. Teachers completed qualitative questionnaires rating principals' intellectual aspects using the five-point Likert scale. Principals provided self-ratings, while learners validated ICT instrument accessibility. The methodology mirrored Objective One's approach, including interviews, focus groups, and statistical analyses.

Objective Three analyzed principals' inspirational motivation and its effect on ICT integration, investigating how principals communicated technological vision and

motivated staff to embrace digital transformation. Data collection and analysis methods matched previous objectives, with teachers and principals rating inspirational motivation aspects, supported by learner validation and qualitative data gathering through interviews and focus groups.

Objective Four examined principals' idealized influence and its role in ICT integration, exploring how principals modeled technology use and demonstrated commitment to digital innovation. The methodology followed the same structure as previous objectives, using quantitative questionnaires, interviews, focus groups, and statistical analyses.

Objective Five provided a comprehensive analysis of how these four transformational leadership constructs interconnected and collectively influenced ICT integration. Data analysis incorporated descriptive statistics (frequencies, percentages, means, standard deviations) and inferential statistics (regression and correlations) to analyze participant responses and determine relationships between leadership constructs and ICT integration. This comprehensive approach examined how transformational leadership behaviors influence technology integration in educational settings, providing insights into leadership's role in successful ICT implementation .This methodological approach provided a thorough examination of The multi-stakeholder perspective and mixed-methods approach ensured a comprehensive understanding of how transformational leadership influences technology integration in schools, while highlighting the practical manifestation of transformational leadership principles in driving educational innovation and change.

3.13 Logistical and Ethical Considerations

To comply with institutional mandates, the researcher obtaned a clearance letter from Kenyatta University's graduate school, which facilitated securing a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI). This permit authorized data collection on principals' transformational leadership influence on technology integration in publc secondary schools in Kakamega County. The commission communicated with county offices, who then informed the respective sub-counties and selected schools.

Prior to data collection, the researcher conducted preliminary visits to explain purpose of the research. Participation was voluntary, and all participants were provided with consent forms. They were assured of their right to withdraw from the study at any time without consequences. To maintain confidentiality, participants were not required to provide personal identification on questionnaires.

The researcher maintained professional conduct throughout the study by: Ensuring equal treatment of all participants,avoiding use of discriminatory or offensive language, respecting participants' right to respond or decline and Properly acknowledging other researchers' work through appropriate citations to prevent plagiarism (Creswell, 2013).

CHAPTER FOUR

PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This chapter delivers a comprehensive interpretation, critical analysis, and in-depth discussion of the research findings examining the significant influence of principals' transformational leadership practices on successful ICT integration across public secondary schools in Kakamega County. The findings are methodically organized in alignment with the study's key objectives, with rigorous examination of corresponding null and alternative hypotheses conducted throughout to establish statistical significance and practical implications.

The Objectives which guided the study were as follows;

1. To establish the extent to which principals' individualized consideration of staff skill development influences ICT integration in teaching and learning in public secondary schools in Kakamega County.
2. To examine the extent to which principals' intellectual stimulation of teachers influences ICT integration in teaching and learning in public secondary schools in Kakamega County.
3. To explore how principals' inspirational motivation to teachers inflences ICT integration in teaching and learning in public secondary schools in Kakamega County.
4. To determine the degree to which principals' idealized influence on teachers influences ICT integration in teaching and learning in public secondary schools in Kakamega County.

5. To assess the extent to which Principals Transformational leadership approaches influences ICT integration of ICT in teaching and learning in public public schools in Kakamega County.

The Null Hypotheses which were in tested were as follows;

H_{01}: There is no relationship between principals' individual consideration of staff skill development and ICT integration in teaching and learning in public seondary schools in Kakamega County

H_{02}: There is no relationship between principals' intellectual stimulation on teachers and ICT integration in teaching and learning in public secondary schools in Kakamega County.

H_{03}: There is no relationship between principals' inspirational motivation on teachers and ICT integration in teaching and learning in public secondary schools in Kakamega County

H_{04}: There is no relationship between principals' idealized influence to teachers and ICT integration in teaching and learning in public secondary schools in Kakamega County.

H_{05}:: There is no relationship between principals' transformational leadership approaches and ICT integration in teaching and learning in public secondary schools in Kakamega County.

The Alternative hypotheses which guided the study were as follows.

H_{01}: There is a relationship between principals' individual consideration of staff skill development and ICT integration in teaching and learning in public seondary schools in Kakamega County

H_{02}: There is a relationship between principals' intellectual stimulation to teachers and ICT integration in teaching and learning in public secondary schools in Kakamega County.

H_{03}: There is a relationship between principals' inspirational motivation to teachers and ICT integration in teaching and learning in public secondary schools in Kakamega County

H_{04}: There is a relationship between principals' idealized to teachers and ICT integration in teaching and learning in public secondary schools in Kakamega County.

H_{05}:There is a relationship between principals' transformational leadership approaches ICT integration in teaching and learning in public secondary schools in Kakamega County.

4.2 General and Demographic Information

This section presents a detailed profile of the study participants, encompassing the demographic characteristics of school administrators, teaching staff, and student population who contributed to the research, as well as the return rate of the data collection. The research discussion was built on an analysis of the participants.

4 2.1 Response Rate

The response rate is calculated by dividing the total number of participants sampled initially to fill out the questionnaire or be interviewed by the total number of eligible respondents who filled out the questionnaire and were interviewed, according to Mitchell (1989), Morton, Bandara, Robinson, and Atatoa (2012). The researcher distributed surveys to three groups of respondents: 372 students, 186 teachers, and 62 principals. The filled and returned questionnaires included those from 132 teachers, representing 71% of the total; 276 students, representing 74.1%; and 54 principals, representing 87%. Overall, there was a 74.51% response rate. This high return rate supports Mugenda & Mugenda's (2012) contention that a 50% return rate is reasonable, a 60% return rate is good, and a 70% return rate is great for reporting findings. Consequently, the survey response rate provide insights to the study. Due to unpredictable weather patterns in Western Kenya and restrictions in schools during the examination period, the researcher was able to interview 10 principals, 15 teachers, and 12 students to strengthen the qualitative strand.

Table 4.1: Instrument Return Rate

Target Category	Target Number	Return Rate	Percentage (%)
Principals	62	54	87
Teachers	186	132	71
Students	372	276	74.1
CQASO	1	1	100
Total	**621**	**463**	

Source: Researcher 2023

4.2.2 Demographic Details of Participants

The study examined the demographic statistics of Kakamega County's public secondary school principals, teachers, and students. Principals and instructors' characteristics included their age, gender, education level, and work experience. Students' characteristics included their school type and gender.

4.2.3 Participants Gender

The participants were requested to indicate their gender on an optional basis. The results of this demographic information are fully presented in Table 4.2.

Table 4.2: Gender of Respondents

Characteristic	Frequencies (n)	Percentages (%)
Principals		
Female	19	35.2
Male	35	64.8
Total	**54**	**100**
Teachers		
Female	72	54.5
Male	60	45.5
Total	**132**	**100**
Students		
Female	159	57.61
Male	117	42.39
Total	**276**	**100.00**

Gender of Principals

As detailed inTable 4.2 a greater number of principals 35(64.8) were male and 19 (35.2) were female in their respective schools. The results revealed a significant gender disparity in school leadership roles within Kakamega County, with men predominantly occupying these positions. This phenomenon may be attributed to the challenges female teachers face, such as balancing leadership responsibilities with

household roles. These factors may contribute to the limited presence of women in leadership roles, perpetuating male dominance in this field.

Gender of Teachers

Of the total respondents 72 were female, constituting 54.5% of the sample, while 60 were male, representing 45.5% of the total.The findings indicated a discrepancy in the composition of the teaching personnel, which can be attributed to the lower representation of male instructors who tend to gravitate towards leadership roles in Kakamega County Studies. The results of the investigation indicated that more women choose teaching as a career compared to men. Intergration of ICT in instructional practices requires commitment for it to be effectively intergrated in classroom.

4.2.4 Age of Respondents

The ages of principals and teachers were rquested and the results presented in table 4.3.

Table 4.3: Age of Respondents

Age	**Female**	**Male**		
	N	**%**	**N**	**%**
Principals				
25 – 34	0	0.00	1	1.85
35 – 44	3	5.56	3	5.56
45 – 54	16	29.63	23	42.59
Above 55	0	0.00	8	14.81
Total	**19**	**35.19**	**35**	**64.81**
Teachers				
Under 30	2	1.52	6	4.55
31 – 40	61	46.21	37	28.03
41-49	8	6.06	14	10.61
Above 50	1	0.76	3	2.27
Total	**72**	**54.55**	**60**	**45.45**

Principals' Age

The data presented in Table 4.3 sheds light on the age distribution of principals, categorized by gender. Among female principals, the most prominent age group is between 45 and 54 years, representing 29.63% of the total, followed by the 35-44 age group at 5.56%. Notably, there are no female principals under the age of 35 or above the age of 55 in the sample. Conversely, male principals exhibit a slightly different pattern, with 42.59% falling in the 45-54 age range and 14.81% aged above 55. Both male and female principals in the 35-44 age range stand at 5.56%. Interestingly, there is only one male principal in the 25-34 age group, accounting for 1.85% of the male sample.

These findings suggest that 70.4% Principals' ages ranged from 45 to 54, indicating that they were mature enough to make decisions and influence teachers' usage of ICT in the classroom. In Kenya, a principal may have risen through the ranks from classroom teacher to director of studies, deputy principal to the current position. As a result, they were acquainted with the context and understood what was required of them in order to provide a conducive environment for ICT use in their schools.

Age of Teachers

The findings presented in Table 4.3 provide insights into the age distribution of teachers, categorized by gender. Among the female teachers, the largest age group falls between 31 and 40 years, accounting for 46.21% of the total, followed by the 41-49 age group at 6.06%. Only 1.52% of female teachers are under 30 years old, and 0.76% are above 50 years old. In contrast, male teachers show a somewhat different distribution, with 28.03% falling in the 31-40 age range, and 10.61% in the 41-49 age range. A smaller proportion of male teachers are under 30 years old

(4.55%), and 2.27% are above 50 years old. Overall, the data indicates that a significant portion of both male and female teachers belong to the 31-40 age group. The findings indicate that the majority of teachers are young. Therefore, these youthful teachers are expected to be energetic and skilled in integrating ICT into their teaching and learning .

Gender of Students

Table 4.2 demostrates that 159 female students represented 57.61% of the total respondent to the questionnaire, while 117 male students represented 42.39%.The inclusion of this variable holds significance as it serves to alleviate any biases arising from gender perceptions. The results demonstrate that both genders were represented and that study believed both genders to be a reputable source of knowledge regarding ICT integration in the classroom.

4.2.5 Highest Level of Education of the Participants

The managers and educators were requested to specify their professional qualification level , which were divided into the following categories: PhD, Masters, Degree, Diploma, and any other qualifications not listed. The findings are reported in Table 4.4.

Table 4.4: Level of Education

Level of Education	Principals				Teachers			
	Female		Male		Female		Male	
	n	%	n	%	n	%	n	%
Diploma	0	0	0	0	2	1.52	6	4.55
Degree	4	7.41	18	33.33	54	40.91	45	34.09
Masters	15	27.78	17	31.48	16	12.12	9	6.82
PHD	0	0	0	0	0	0.00	0	0.00
Total	**19**	**35.19**	**35**	**64.81**	**72**	**54.55**	**60**	**45.45**

4.2.5.1 Highest Level of Education of Principals

In terms of educational attainment, 4 female principals accounted for 7.41% of the total population, whereas 18 male principals accounted for 33% of those with a degree. Furthermore, 15 female principals represented 27.78% of those with a master's degree, while 17 male principals represented 31.48%. According to the findings, principals of Kakamega public secondary schools held bachelor's and master's degrees in their respective professions, as required by the Teachers Service Commission (Teachers Service Commission, 2017).They had a strong educational foundation for leadership in this situation, and their influence on the use of ICT in teaching and learning might be considerable for they may cultivate an innovative culture of stimulating teachers utilizing ICT in classroom (Yamamoto & Yamaguchi (2019). There were no principals with PhDs, highlighting the reality that following graduation, educators seek betterpossibilities.Nang'unda(2019).

4.2.5.2 Highest Teachers'Level of Education

Concerning the education level for teachers, the study found that 54 female teachers (40.91% of the participants) and 45 male teachers (34.91% of the participants) held a

degree in education. Master's degree holders included 16 female teachers, accounting for 12.12% of the participants, and 9 male teachers, accounting for 6.82%. Two female instructors (1.52%), and six male teachers (4.55%), held diploma credentials.There were no PhD-holding instructors in Kakamega County schools. According to the findings, both genders had good qualifications to be employed by the Teachers Service Commission, and they also had knowledge and could recognize if the headteacher was displaying the traits of transformational leadership. Literature review showed that a key factor that causes low intergration of ICT in teaching and learning is in sufficient expertise in in technology use, Miima(2014);Imran and Imon(2017). Therefore, based on this findings teachers have professional qualifications and skills to use ICT in school, as ICT is taught as a prerequisite subject at universities.

4.2.6 Working Experiences

Administrators and teaching staff were requested to specify their professional tenure, including both classroom experience and duration in leadership roles, and the outcomes indicated in Table 4.5.

Table 4.5: Working Experiences

Number of years served in the current post	**Principals**				**Teachers**			
	Female		**Male**		**Female**		**Male**	
	n	%	n	%	n	%	n	%
Less than 5 years	6	11.11	10	18.52	33	25.00	37	28.03
Between 5 -15 years	13	24.07	24	44.44	39	29.55	23	17.42
More than 15 years	0	0	1	1.85	0	0	0	0
Total	**19.00**	**35.19**	**35.00**	**64.81**	72.00	54.55	60.00	45.45

4.2.6.1 Principals' Working Experience

In terms of job experience, Table 4.3.4.1 shows that 6 (11.5) female principals and 10 (18.52) male principals had less than 5 years of experience in their position of leadership, while the majority of the principals had five to fifteen years of experience in the following composition: Female 13 (24.07) and Male 24 (44.44). A small proportion of male principals (1.9%) have worked for more than fifteen years. These findings suggest that Kakamega secondary public school principals have managerial experience, putting them in an excellent position to implement government initiatives such as the use of ICT in classsroom.

4.2.6.2 Teachers' Working Experience

In terms of working experience, the data revealed that the majority of female instructors, 39 (29.55), had classroom teaching experience ranging from 5 to 15 years, while their male counterparts were 23 (17.42). The composition of educators with fewer than 5 years of experience was Female teachers made up 33 (25)of those working for less than 5 years, while male teachers made up 37 (28.03). The results did not include any teachers who had worked for more than 15 years. This is an excellent finding because both genders are represented in teaching. Furthermore, most of the teachers are young, and studies have shown that young teachers are more familiar with technology than older teachers.This observation revealed that most instructors had remained in their schools for a longer period of time, which could highlight the nature and practice of transformative leadership. This confirms that teachers' desire to use ICT or stay at a specific school is dependent on their relationship with the principal and a conducive ICT environment. (Polizzi, 2011; Mendel, 2012)

4.3 Descriptive Statistics

This section provides a comprehensive analysis of transformational leadership dimensions-including personalized consideration, cognitive stimulation, motivational inspiration, and exemplary influence-and their consequential effects on technology integration within educational practices. The research employs robust descriptive statistical methods, encompassing percentage distributions, variance measurements, and central tendency calculations. Respondents' perceptions were captured using a sophisticated five-point Likert assessment instrument, ranging from strong Disagreement (1) to strong Agreement(5). The interpretation framework for the mean scores follows the established methodological protocols developed in seminal studies by Abd-Elfattah (2008) and Salem (2015), which provide the following standardized benchmarks for analysis;

Mean rating	**Interpretation**
1.00-1.79	Strongly disagree
1.80-2.59	Disagree
2.60-3.39	Neutral
3.40-4.19	Agree
4.20-5.00	Strongly agree

4.3.1 Principal's Individual Consideration Influence on Integration of ICT in Teaching and Learning

To fulfill the first objective, the study examined how principals' personalized attention and support (individual consideration) affects technology adoption in educational processes across public secondary institutions in Kakamega County. The findings are presented in table 4.6.

Table 4.6: Principals' Individualized Consideration Responses on ICT Integration

Items	Responses										Mean	Std. Dev
	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
	n	%	n	%	n	%	n	%	n	%		
Guide and develop educators' skills through Mentoring and coaching, on the utilization of innovative devices during instruction.	0	0	3	5.6	18	33.3	26	48.1	7	13	3.69	0.773
Support and motivate teachers to engage in proffesional development and excel in their teaching roles	0	0	0	0	2	3.7	44	81.5	8	14.8	4.11	0.42
Provide teachers with adequate computers for effective classroom instructions.	0	0	0	0	22	40.7	26	48.1	6	11.1	3.7	0.662
I am attentive to each teacher's unique needs and readily available for consultations and support to improve their instructional performance.	0	0	1	1.9	22	40.7	24	44.4	7	13	3.69	0.722
The school ICT technician provides prompt assistance to teachers who encounter difficulties with technology during instructions.	0	0	4	7.4	16	29.6	22	40.7	12	22.2	3.77	0.883
The school provides dependable Wi-Fi connectivty	1	1.9	4	4.4	11	20.4	25	46.3	13	24.1	3.83	0.947

Table 4.6 presents the assessement items for individual consideration: the results demonstrate that principals evaluated all items recorded regarding the extent to which principals' individual consideration influences the use of ICT in teaching and learning.

Regarding the principal's approach of mentoring and coaching teachers on classroom technology use.According to Table 4.6, 26 (48.1%) agreed with the mentoring and coaching component, 7(13%) strongly agreed, 18(33.3%) were neutral, and 3(5.6%) disagreed. The data interpretation on these aspects of mentoring and coaching shows that principals in Kakamega practice it. The mentoring and coaching component is critical to capability enhancements since it symbolizes the administrator’s supportive attitude towards the staff. Teachers' abilities in the use of ICT vary, for example, those who have recently graduated from college and may want support in the professional demand. Teachers want collaborative assistance from a transformative principal who understands their needs and guides them in integrating ICT in the classroom. Tenai (2017).

Concerning encouraging and assisting teachers to pursue professional advancement and be effective instructors, the majority of respondents (81.5%) agreed with the statement, while 8(14.8%) strongly agreed and only 2(3.7%) were neutral. This component of assisting teachers in pursuing professional advancement received the greatest mean 4.11. These results showed that principals in Kakamega were aware that teachers' abilities varied and encouraged their professional development in the use of ICT. Innovations in teaching methods and technological advancements demand classroom teacher training. Principals that recognize the creative component provide an enabling climate and allow teachers to grow professionally, placing their

school in a position to integrate ICT in teaching and learning. These findings are consistent with those of Gacio (2022), who conducted a study to investigate transformational leadership and employees self-eficacy in public secondary schools. The individual consideration element of the principal's practice of encouraging teachers to pursue professional development. The most essential metric was the individualized consideration characteristic. The research established a connection between leaders who champion self-guided professional improvement and heightened performance metrics. When a teacher is professionally developed, he is eager to use ICT into the classroom.

About the practice of assisting teachers by providing appropriate computers for use during teaching and learning the results were mixed , with 26 (48.1%) of the repondents agreeing with the statement, 6 (11.1%) strongly agreeing, and 22 (40.7%) were neutral. The principal's responsibility is to guarantee that government programmes, including the integration of ICT in teaching and learning in public schools. Teachers may have faith in their principals if their specific needs are prioritized. According to Kariuki (2021), transformational principals demonstrate genuine concern for their teaching staff, treat them with individual respect, comprehend the difficulties they face, and remain receptive to their feedback and ideas regarding classroom ICT implementation.

Concerning the behavior of principal of being aware of personal attention on his availability for engagement and guidance received mixed results, as 24(44.4%) Agreed, 7(13%) strongly disagreed and 1 (1.9) participant disagreed with the assertion. engagements is essential in everyday life; teachers feel valued when they are heard. When principals speak with their teachers, they are able to grasp their

needs since the instructors will freely propose areas where ICT integration may be enhanced. These results reflect the situation in educational institutions across Kenya, where school administrators juggle multiple responsibilities that restrict their availability for open dialogue with teaching staff.This type of collaboration can take place in a variety of ways, as seen by the Document analysis on staff minutes and ICT committe minutes where teachers' requirements are required.

Regarding the extent to which the school's Information and Communication Technology (ICT) technician provides support to teachers encountering technological difficulties. The respondents exhibited a range of responses towards the statement, with 22 individuals (40.7%) expressing agreement, 12 individuals (22.2%) strongly agreeing, 16 individuals (29.6%) remaining neutral, and 4 individuals (7.4%) expressing disagreement. The significance of principals' support for teachers in terms of technical variables cannot be overstated.To strengthen this agreement the current results concur's with Nangandu (2019) who emphasized the importance of schools providing necessary technical support to address any technical issues that may arise while teachers are utilizing classroom facilities. In cases where the problem persists, classroom teachers were permitted to seek assistance from external service providers or other administrative staff, such as the secretary, to aid in tasks such as entering marks.

Based on the research carried by Kimuyu, Kalai, and Okoth (2016), it was noted that a significant proportion of schools, specifically 57.1%, did not employ an ICT technician. The researchers noted that this trend was mostly due to the preference of principals to outsource ICT services rather than hiring an in-house technician, since the latter was perceived as being less cost-effective. Transformational leaders in the

role of principals must possess a comprehensive understanding of the needs of teachers, particularly in relation to their technological proficiency, in order to effectively support and facilitate the integration of technology within the school environment.On the other,opposing perspectives have argued that technical support does not have any impact on the integration of information and communication technology (ICT), as long as there is adherence to rigorous ICT protocols. According to Nangadu (2019),

This data reveals that some schools did not require the assistance of an ICT technician because their teachers were ICT literate, whilst others did, as evidenced by principal responses during the interviews: Several principals believed that teacher training was a constant process, so they hired a school ICT technician to assist the teachers.

> "*There have been no official trainings, but the technician is always addressing teacher-training needs." The ICT technician is always available at the school level to advice teachers in any area where they are lacking”.*

According to the observation checklist and document analysis on staff minutes and BOM, it was obvious that teachers sought assistance from the school technician, and some of the teachers who were ICT proficient assisted the older generation.

Ferguson's (2021) research showed that principals shared ICT tutorial links with teachers, allowing them to teach in South African schools during the COVID-19 crisis.

Concerning the reliability of the school's Wi-Fi connectivity, the statement elicited a variety of reactions. 25 (46.3%) agreed that Wi-Fi access was dependable, 13 (24.1%) strongly agreed, 11 (20.4%) were neutral, 4 (4.4%) disagreed, and 1 (1.9%)

strongly disagreed. While there were considerable variations in the responses regarding Wi-Fi availability, a few schools did not completely agree with the assertion. According to Molly at,el (2020), while the Kenyan government has been working to establish nationwide internet connectivity and optical fiber infrastructure to improve accessibility, connectivity challenges continue to exist, particularly in rural areas.Inadequate Wi-Fi may have an impact on teachers' use of ICT in the classroom.

During the interviews, one of the principals stated,

> *"we face challenges especially with the unpredictable weather of rain in the evening, our electricity is interrupted thus affecting the teacher who is using the computer to teach her lesson",*

These findings are consistent with Ferguson's (2021) discovery that teachers who received links to instructions on how to use specific platforms during online sessions. They improved their service delivery and the educational outcomes of their students. These findings could be viewed as teachers preferring an environment that is supportive of their unique needs. Kariuki (2021) asserted that transformational principals exemplify exceptional leadership by cultivating deep personal connections with their teaching staff, honoring each educator's unique professional identity, thoroughly grasping the complex challenges they navigate daily, and actively soliciting and incorporating their insights and innovative proposals concerning technological integration in instructional practices. This approach creates an environment where teachers feel valued as essential contributors to educational technology advancement rather than mere implementers of administrative directives.

Table 4.7: Teachers Responses for Principals' Individualized Consideration for ICT intergration

Items	Responses										Mean	Std. Dev
	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
	n	%	n	%	n	%	n	%	n	%		
The school provides comprehensive training for teachers on computer use.	1	0.8	5	3.8	50	37.8	68	51.5	8	6.1	3.58	0.699
The administrator enables teachers to participate in scheduled ICT training sessions whenever such opportunities arise.	0	0	3	2.3	45	32.1	70	53	14	10.6	3.72	0.68
The school's technician provides assistance to teachers with technology resources whenever needed.	0	0	2	1.5	75	56.8	50	37.9	5	3.8	3.44	0.596
There are sufficient internet service providers available which ensures consistent and high speed connectivity.	0	0	2	0	31	23.5	52	39.4	49	37.1	4.14	0.769
My computer is protected by comprehensive, antivirus software that regularly updates to defend against the latest security threats.	0	0	7	5.3	36	27.3	66	50	23	17.4	3.8	0.789
I extensively utilize my computer for developing lesson plans, creating varied assessment materials, and maintaining accurate digital records of student progress.	1	0.8	4	3	39	29.5	55	41.7	33	25	3.87	0.851

Table 4.7 displays the responses of Teachers to the individual consideration statements provided.

Concerning the school training teachers on how to operate and use ICT tools in the classroom,68 (51.5%) agreed, with 8 (6.1%) highly agreeing, 50 (37.8%) neutral, 5 (3.8%) disagreeing, and 1 (0.8%) strongly disagreeing. Based on these findings, the development of teachers' skills is vital and necessitates the participation of the principal and the board of management. Some teachers may be apprehensive to use ICT since they did not receive adequate instruction during their initial college education. As a result, the school principal should create an innovative environment for teachers to receive ICT training to assist classroom delivery.

Concerning the practice of school technicians assisting instructors in the usage of ICT materials when needed, 50 (37.9%) agreed 5(3.8%) of respondents strongly agreed, 75 (56.8%) were Neutral, and 2 (1.5%) of teachers opposed. The findings showed that the principals' in Kakamega understood the needs of teachers, particularly those who use ICT in the classroom, by offering help; nevertheless, more has to be done to ensure that all teachers are supported through school development.

Concerning the of computers by instructors for the purposes of designing lesson plans, setting assessments, and tracking important outcomes, the survey findings indicate that 55 (41.7%) respondents agreed, 33 (25%) strongly agreed, 39(29.5%) remained neutral, and 4 (3%) disagreed. The development of a lesson plan is commonly perceived as an essential educational tool that is expected to be created by every teacher in a professional capacity. In order to enhance educational effectiveness within the classroom setting.

The current study's findings are consistent with Nanguda's (2019) research, which investigated the extent of information and communication technology (ICT) integration in classrooms as one of its research objectives. Nanguda's findings revealed that a significant majority of teachers (86%) were involved in various activities including creating teaching materials and managing administrative tasks such as maintaining student academic records and monitoring grades. However, the research showed that 40% of these educators utilized cyber facilities or online platforms during this process. This pattern may be explained by the ready availability and accessibility of downloadable online resources, as demonstrated in Nanguda's (2019) study.The study found that a considerable majority of participants, 55%, expressed optimism about their capacity to modify and organize existing knowledge. Upon scrutinizing the documents, it was observed that a number of them had undergone the procedure of photocopying and were deemed suitable for adaptation by educators. The suggestion was that educators encountered challenges in utilizing computers, which impeded their ability to effectively develop instructional curricula. In contrast to the preceding assertion, Tenai (2017) conducted a qualitative investigation that offers an alternative viewpoint. The researcher's findings revealed that a notable percentage of educators, specifically 30.4%, shown a deficiency in computer proficiency and encountered challenges when attempting to generate audio or video clip presentations. A survey was undertaken by the Teachers Service Commission in a purposefully sampled group of 1200 educational institutions, The findings of the study revealed that a significant proportion (86.2%) of educators in public educational institutions acknowledged encountering challenges in the implementation of innovative devices within the classroom setting. Consequently,

these difficulties were identified as the primary factor contributing to the deficiency in teachers' professional skills, thereby impacting the quality of educational services provided (Wanzala & Nyamai,2018; Oduor, 2018). In the case of Imran and Imon (2017), a considerable number of instructors demonstrated limited skills in creating digital materials. This suggests educators require collaborative support from transformational leaders who can comprehend and address their unique concerns. According to document analysis of staff minutes, teachers participated in in-house training sessions conducted by the school's technology specialist, Receiving assistance from the school technology demonstrates that the principal cares about the teachers and understands their demands. Teachers are unlikely to request assistance from the technician without the principal's involvement. Observation checklist data showed that a majority of teachers made their lesson plans using school computers and photocopiers, which could be reached from the secretary's office, the computer lab, and personal laptops.

Concerning the assertion, that virus protection software was running on the teacher's PC. the statement elicited various responses: 66(50%) agreed, 23(17.4%) strongly agreed, 36(27.3%) neutral, and others did not react. The findings revealed that those who did not respond to the question were unfamiliar with some of the software given by the institutions. It could be taken that the school principal should examine the specific abilities of the instructors in order to coach and mentor them appropriately. Individual consideration is described in this study as transformation principals paying attention to teachers' expectations, which include technology difficulties addressed in the classroom by ICT specialists. Effective teachers with ICT knowledge, according to Hennessy (2010), will most likely integrate them into

courses, increasing personal efficacy. Furthermore, the investigation supported the findings of Ndiritu and Gichimu (2018). Their study produced a correlation coefficient of 0.560, which was regarded positive between the use of ICT by teachers in instruction and the level of management support at the school.

4.3.2 Intellectual Stimulation

The second objective was about examining the extent to which Principal intellectual stimulation to teachers influence the integration of ICT in teaching and learning in secondary schools in Kakamega County.

Yamamoto and Yamaguchi (2019) define intellectual stimulation as an individual's ability to inspire and improve instructors' creativity through the incorporation of technologies in the classroom. The role of a transformative principle is to support teachers by establishing a favorable working environment that includes enough and effective technology. Principals that create a positive working atmosphere encourage their teachers to be creative and innovative when tackling difficulties. Employees that are inspired work hard and become dedicated to attaining the organization's goals. Transformational leaders encourage their staff to be imaginative by recognizing their achievements.

Intellectual stimulation had 4 items to measure, the items were scored on a five-point Linkert scale, with 5 representing strong agreement and 1 representing strong disagreement. The interpretation of mean rating on likert items according to studies by Abd-Elfattah (2008) and Salem (2015) was as follows;

Mean rating	Interpretation
1.00-1.79	Strongly disagree,
1.80-2.59	Disagree,
2.60-3.39	Neutral,
3.40-4.19	Agree, and
4.20-5.00	Strongly agree.

Table 4.8: Principals' Intellectual Stimulation for ICT integration of ICT

Items'	Responses										Mean	Std. Dev
	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
	n	%	n	%	n	%	n	%	n	%		
Provide access to Wi-Fi in school without any restrictions.	0	0	1	1.9	27	50	11	20.4	15	27.8	3.74	0.894
I trust teachers' abilities when they apply their innovative skills to the learner's achievement.	0	0	2	3.7	25	46.3	23	42.6	4	7.4	3.54	0.693
Works towards consensus with the educators on ICT resources that must be prioritized in the school budget.	0	0	2	3.7	23	42.6	25	46.3	4	7.4	3.57	0.69
Encourage teachers to review their practices in Information Technology usage.	0	0	1	1.9	6	11.1	40	74.1	7	13	3.98	0.566

Table 4.8 presents the survey results on Intellectual Stimulation among principals in the educational setting.

Firstly, when asked about providing unrestricted access to Wi-Fi in school, it is apparent that a great number of participants affirmed, with 27(50%) expressing a neutral stance, 11(20.4%) agreeing, and 15(27.8%) strongly agreeing. This indicates that the provision of Wi-Fi without restrictions is viewed positively by a significant portion of principals, with a relatively high mean score of 3.74, suggesting general support for this approach.

Teachers' require the principal's help to have access to reliable Wi-Fi in order to use ICT. This access to the internet by other schools may result in a digital gap; Kidombo, Gakuu, and Ndiritu (2012) discovered that schools lacked sufficient computers in their study. For example, Githunguri which had 800 pupils had fourteen computers and Musa Gitau with a population of 437 pupils, had twenty PCs with no Internet access. Furthermore, when teachers have difficulty obtaining Wi-Fi, they may be reluctant to use the service. Findings from the document analysis suggested that wifi had been budgeted for, which could be confirmed from the ICT committee minutes and the ICT Budget. Principals can use their responsibilities as Secretary of the Board to implement budget plans for ICT technology and engage teachers in determining what to prioritize during the school year.

Secondly, principals were asked about their trust in teachers' innovative abilities to enhance learner achievement. The results show a distribution where 25 (46.3%) were neutral, 23 (42.36%) agreed and 4 (7.4%) strongly agreed. The mean score of 3.54 indicates a generally positive outlook among principals in this regard. When teachers' inventive abilities are fostered, they become more motivated and dedicated

to using ICT in the classroom (Plom, Law, & Quale 2009; Zhou & Ren, 2011). Teachers have trust in leadership when the organization goals match with their personal abilities. These findings collaborated with the results of Klinc, Polatanc, and Er (2022) who investigated how transformational leadership promotes teacher dedication and innovative practices. The study looked at teacher dedication as a moderator and Trust in the principal as a mediator. The survey included 611 teachers from 56 schools in Turkish schools. The findings provided evidence of the indirect benefits of transformational leadership on teacher creative practices via the strong mediator function of teacher dedication. They also discovered evidence that confidence in principal worked as a substantial mediator of the indirect influence of transformational leadership on teacher creative practice through teacher commitment. Teachers want to work in a setting that recognizes and values their abilities; in this scenario, teachers' commitment and inventive practice are based on how much they trust their principals.

Thirdly, regarding consensus-building on prioritizing ICT resources in the school budget, the responses were quite evenly distributed. Approximately 23(42.6%) had a neutral stance, 25 (46.3%) agreed, 4(7.4%) strongly agreed and only 2(3.7%) strongly disagreed. This suggests that a substantial number of principals are actively engaging with educators in making decisions about ICT resource allocation, resulting in a mean score of 3.57.

Lastly, when it comes to encouraging teachers to review their practices in Information Technology usage, the majority of principals, 40(74.1%), agreed, while 7(13%) strongly agreed, indicating strong support for this initiative. The mean score of 3.98 reflects a high level of encouragement provided by principals to teachers in

terms of reflecting on their Information Technology practices. These findings show that principals in Kakamega encourage innovative teachers to increase their inventiveness. The principal, who has great expectations for the employee, encourages the teacher to work hard in order to be recognized.According to Maria at.el (2023) , innovative school leaders accomplish their objectives by fostering critical thinking environments where followers demonstrate dedication and diligence. Intellection stimulation is a good practise for integrating ICT in the classroom because it is tied to the principal's transformational leadership (Muia, 2018). Positive leadership will allow the instructor to acquire the teachers' trust and urge them to think beyond the box in their efforts to integrate ICT in the classroom.

These results also suggested that principals in Kaka mega consulted their teachers on ICT budgeted. This adheres to the Documents analysis as shown in the staff minutes and ICT Budget Committee Minutes, as well as the observation checklist of computers, projectors, and e-learning resources found in school. Engaging teachers in their requirements is considered ethical, and it can strengthen the work-employee connection and raise output. Principals that provide a positive working atmosphere inspire their educators to be imaginative and novel in issue solutions.This practice of intellectual stimulation has a desirerable results on ICT use in teaching and learning.

In one of the interviews about the state of ICT in schools, the principal noted,

> *"Most educators are utilizing digital devices in their lessons, although some, particularly the older educators over 50 years old, have opted to stick to their old system of teaching and are ICT illiterate."*

This implies that a great number of the young instructors had integrated ICT, whilst the elderly needed to be instructed on how to use it in the classroom. This corresponds with Miima (2017), who found that using ICT tools in Kiswahili

language instruction was inefficient since Kiswahili teachers' experience in technology use was relatively poor.

The principal of another school responded *many of her teachers were ICT compliant and eager to incorporate ICT into their teaching, despite the challenges of limited capacity to accommodate all learners.* She went on to say that the material supplied is limited.'

Another principal from another school told the same story. "In school, we only have enough ICT materials for the computer class." *Some teachers take the initiative to include ICT into their courses by employing personal laptops and the school projector. Some teachers do not use ICT."* This is related to the issue of some instructors being unqualified to use ICT in the classroom. The administration is in charge of providing hardware since the principal, as a board member, can utilize his position to make purchases.

The examination of documentation showed that institutions without adequate technology infrastructure-such as internet connectivity or insufficient computers relied on external cyber cafés or sought assistance from teachers and technical staff who had access to these resources. This finding was substantiated by evidence in official records, including staff meeting minutes. Data collected through observational checklists indicated that various technological tools—computers, laptops, storage devices, projection equipment, and internet connectivity devices—were utilized by individuals who had access to such resources. The key insight drawn from this evidence suggests that school leaders, regardless of classroom technology availability, devised methods to incorporate digital tools into educational practices.

Table 4.9: Teachers Responses on Principals' Intellectual stimulation for ICT intergration

Items'	Responses										Mean	Std. Dev
	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
	n	%	n	%	n	%	n	%	n	%		
I access the internet promptly at school without restrictions	0	0	5	3.8	55	41.7	52	39.4	20	15.2	3.66	0.78
The school principal has trust in my abilities and supports ICT usage in the in-classroom instructions	0	0	2	1.5	84	63.6	36	27.3	10	7.6	3.41	0.653
Teachers are consulted about type of hardware and software needed for teaching by the school principal.	1	0.8	5	3.8	105	79.5	18	13.6	3	2.3	3.13	0.53
The principal involves teachers in the decision-making process to improve the quality of classroom delivery in school	0	0	7	5.3	102	77.3	16	12.1	7	5.3	3.17	0.599
Teachers are stimulated to reflect upon the value of using ICT because of students' success.	0	0	2	1.5	53	40.2	68	51.5	9	6.8	3.64	0.633

Table 4.9 findings demonstrated discrepancies in replies to assertions asked. Regarding the first statement I access internet without restriction significant 55(41.7%) of teachers reported a neutral , 52(39.4%) agreed and 20(15.2%) strongly agreed, while a relatively small proportion 5(3.8%) disagreed, and no respondents strongly disagreed. These results show that while internet access was accessible to instructors in Kakamega and that they could use it in the classroom, the connection was constantly disrupted, according to observations, because to the erratic weather in the country's western area. The report emphasized the necessity for schools to improve internet access by utilizing dependable methods and sources of electricity such as generators and solar panels.

As for the statement on the school principal trust in the teacher's abilities and supports ICT usage in classroom a significant 85(63.6%) of teachers reported a neutral stance when asked if the school principal trusts their abilities and supports ICT usage in in-classroom instructions 37 (27.3%) agreed, 2(1.5%) strongly agreed, and 10(7.6%) disagreed, and no respondents strongly disagreed. These findings indicate that teachers believed their principals did not completely trust their ability to use ICT. Transformational principals are required to support their teachers' use of ICT by providing them with appropriate ICT materials to allow them to be inventive. Intellectual stimulation is the ability of an individual to inspire and improve instructors' creativity via the use of technology in the classroom. Yamamoto and Yamaguchi (2019)

In school, trust is essential for good leadership. The school administrator should promote a culture of trust among teachers by providing a healthy working environment; this will enable teachers to be innovative and imaginative in problem

solving, Jandaghi (2009). Having little faith in teachers' abilities may have a negative impact on the principal's actions when it comes to implementing ICT in the classroom.

In response to the statement, which inquired about teachers' involvement in decisions concerning hardware and software for teaching, 84(63.6%) of the respondents were neutral, while 36(27.3)% agreed, and 10(7.6%) strongly agreed. Only 2(1.5%) disagreed, and no respondents strongly disagreed. According to the findings, teachers considered they were not completely included in the decision-making process. However, this contradicts the findings of the document analysis, which revealed that teachers participated in ICT-related conversations, as demonstrated by staff minutes. Nonetheless, in Kenyan schools, teachers may discuss in the staffroom, but the administrator makes the final decision. Leadership is not a one-man show; rather, it is about persuading others to work towards a common objective. In this sense, the principal should speak with and collaborate with teachers to integrate ICT in the classroom.

Obioma (2015) investigated a method for understanding leadership decision-making in organizational leadership and management activities. The emphasis was on understanding the leadership decision-making process (LDMP) among organizational leaders and managers. The survey included 216 organizational leaders from North American cities and states (Canada, Mexico, and the United States). According to the findings of this investigation, organizational leaders should delegate authority to capable subordinates. The main finding is that when teachers are involved in decision-making, they are more inclined to use ICT resources in the classroom.

The fourth statement explored the extent to which principals involve teachers in decision-making processes to enhance classroom delivery quality. Here, 105(79.5%) of teachers had a neutral stance, 18(13.6%) agreed, and 10(7.6%) strongly agreed, highlighting a generally positive perception of involvement. 5(3.8%) disagreed, and only 1(0.8%) strongly disagreed.

From the findings majority of the teachers had a neutral stand which implied they were silent as most of the final decision maker on ICT requirements is the principal.

> *After close follow up on an interview one person said we only see the principal during the staff meeting and in staff we fear to raise our concerns as the principal feels that they know it all and fails even to engage the accademic master. This demorolizes teachers to intergrate ICT in classroom.*

The fifth statement addressed whether teachers are stimulated to consider ICT's value due to students' success. 16(12.1%) of teachers agreed, 102(77.3%) expressed a neutral stance, and 7(5.3%) strongly agreed. No respondents strongly disagreed, and only 1.52% disagreed. This outcome is a reflection of the transformative principal's job, which is to excite teachers and increase their creative abilities by consulting on the types of software and hardware that can be incorporated in the classroom (Yamamoto and Yamaguchi, 2019). Teachers become motivated and committed to implementing ICT in the classroom when they receive clear information on specific hardware and software they require to use for their teaching activities.

> *During an interview ,one of the teachers said though "I go an extra mile in using my own laptop to teach and assist some technical issues to other teachers, the principal does not trust my abilities ,I feel more demorolized".*

Lastly, the sixth statement explored the extent to which teachers are stimulated to reflect upon the value of using ICT because of students' success. An impressive 68(51.5%) of teachers agreed, 9(6.8%) strongly agreed highlighting a generally positive perception of involvement. 53(40.2%) had a neutral stance while only 2(1.5%) disagreed. According to these findings, teachers in Kakamega County clearly value their students' success. While there is room for improvement in certain areas, most responses reflect positive attitudes towards principals' involvement in sharing best practices for ICT integration. Additionally, the role of the administrator is critical as they encourage teachers to reflect on the benefits of ICT, particularly in light of students' achievements.

4.3.3 Inspiration Motivation

The third objective was about examining how principal' inspire teachers to integrate ICT in teaching and learning in public schools in Kakamega County.

Inspiration refers to the process of being mentally stimulated to create or achieve something. The process of transforming or changing something is commonly referred to as "transformation.".A leader can inspire their followers by helping them to understand the shared mission , vision and policies of the company. Developing ICT policies for schools that align with the school's mission is the responsibility of principals, according to Ferguson (2021). Educators exhibit higher levels of motivation when their endeavors are duly recognized and when they are provided with a conducive and agreeable professional setting.

Inspiration motivation had 6 items to measure. The items were scored on a five-point Linkert scale, with 5 constituting to strong agreement and 1 strong disagreement. Standard deviation and average weighted mean from the participants were used in

the study. The analysis of mean rating on likert items according to Abd-Elfattah (2008) and Salem (2015) studies were as follows;

Mean rating	**Interpretation**
1.00-1.79	Strongly disagree,
1.80-2.59	Disagree,
2.60-3.39	Neutral,
3.40-4.19	Agree, and
4.20-5.00	Strongly agree.

Table 4.10: Principals' Inspiration motivation Responses for ICT intergration

Items'	Responses										Mean	Std. Dev
	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
	n	%	n	%	n	%	n	%	n	%		
The school has a clear vision for ICT.	0	0	0	0	22	40.7	19	35.2	13	24.1	3.83	0.795
We have a flexible school ICT policy in Place that enables teachers to access the ICT tools for teaching.	0	0	0	0	27	50	20	37	7	13	3.63	0.708
We have created an enabling ICT environment for both teachers and students.	0	0	0	0	21	38.9	26	48.1	7	13	3.74	0.678
We share good practices of teaching with ICT in our staff meetings.	0	0	0	0	15	27.8	35	64.8	4	7.4	3.8	0.562

The data presented in Table 4.10 reflects the responses of the participants pertaining to objective three, inspiration motivation. Firstly, when asked about the school's vision for ICT, 19(35.2%) indicated agreement, with 22(40.7%) in neutral and none disagreed or strongly disagreed, resulting in a mean score of 3.83, reflecting a positive sentiment.

From these findings, it is clear that the schools in Kakamega are well-acquainted with the concept of utilizing ICT in their educational practices. It's important to highlight that the principal's role is significant in formulating a school vision that aligns with goals that are well communicated to the teaching staff Ferguson, (2021).notes that, an inspirational and motivating leader excels in communication, making the vision accessible, concrete, and impactful in line with the school's goals. The success of integrating ICT into the classroom largely hinges on the principal's potentialities to effectively convey the vision to the teachers.

The document analysis and observation checklist further confirm the presence of an ICT vision within the schools in Kakamega. This signifies that there is a solid foundation in place for implementing and promoting ICT within the educational institutions, driven by a shared vision that can inspire and motivate educators and students alike.

In terms of the flexibility of the school's ICT policies, 26(48.1%) agreed, 27(50%) were neutral, and 7(13%) strongly agreed. These responses collectively generated a mean score of 3.63, indicating a generally positive perception regarding the school's ICT policies.

In the this review, ICT policies are considered to be rules established by the school to prevent the misuse of ICT tools. Insights gathered from interviews with the school principals highlighted certain challenges, such as theft and damage to ICT tools when they were left unmonitored.

This favorable perception regarding the flexibility of the school's rules is valuable for nurturing better relationships with the school's stakeholders, ultimately serving as a inspiration aspect to teachers to successfully integrate ICT into their classrooms Benta Awori & Namada, (2018). It indicates that a balance between flexibility and security in ICT policies can positively impact the willingness of teacher to embrace and utilize ICT tools within the learning environment, thereby promoting enhanced educational outcomes.

Additionally, concerning the establishment of a conducive ICT environment, a notable 26 individuals (48.1%) expressed agreement, while 21 (38.9%) held a neutral stance. Furthermore, 7 respondents (13%) strongly agreed with this notion, resulting in a mean score of 3.74, which signifies a predominantly positive outlook.

Lastly, when it comes to sharing teaching practices involving ICT, a substantial 35 individuals (64.8%) strongly agreed, with 15 (27.8%) adopting a neutral stance, and 4 (7.4%) expressing strong agreement. This resulted in a mean score of 3.8, reflecting an overwhelmingly positive response.

It's important to acknowledge that school managers are significant in guiding and supporting instructors who utilize ICT in their teaching and learning, as emphasized by Gacicio(2022) .A leader who fosters an enabling environment has the power to motivate their followers. Chung (2015) while examining the link between student’s

academic optimisim and technology innovation in Taiwanese primary schools proposed that principals should allocate finances for ICT equipment and cultivate a vision of technology integration. These results corresponds with the correlation investigations carried Mugiraneza (2022) in Rwanda, which highlighted that teachers who received greater ICT support from their head teachers perceived computers as essential tools for enhancing learning outcomes, in contrast to those who received limited support. In such an environment, teachers tend to be revitalized and gain confidence in their instructional practices.

During the interviews: Principals were asked whether they supported their teachers with an ICT environment. The majority agreed that they had ICT infrastructure in place. However, some challenges were highlighted:

Interviewer 1: The issue of infrastructure is complex. In my school, we have only a few computers, and they are inadequate for sharing among students and learners."

Interviewer 2: "Though we have ICT resources, they keep breaking down, incurring substantial repair expenses."

Interviewer 3: "We work with what we have, but it's challenging."

Principals' were aso interrogated about the ways in which they have supported instructors in integrating ICT into classroom instruction. One head teacher candidly shared *that they have been actively aiding teachers by providing essential ICT resources and ensuring that training opportunities are readily available to technicians, tailored to the specific training needs identified among the teaching staff.*

Additionally, principals shared their commitment to a school vision that is in alignment with the broader national framework, Vision 2030. As part of this vision, they expressed their belief that by the year 2025, all subject teachers should seamlessly incorporate ICT during instructions in the school setting. This forward-looking perspective underscores their dedication to fostering an education system that is prepared for the demands of the future.

Nonetheless, it is crucial to recognize the difficulties faced on the ground. The majority of interviewed principals reported a range of difficulties hindering seamless ICT integration. These obstacles encompassed issues such as unreliable connectivity, inadequate infrastructure, instances of tool vandalism, and resistance from certain teachers who displayed reluctance to embrace technologies in instructional activities.

Specifically, the challenge of "lack of funding for acquiring additional ICT materials to meet the diverse needs of learners" emerged as a significant hurdle. Vandalism by students also posed a considerable concern. Additionally, the presence of teachers who exhibited inflexibility in acquiring ICT skills was noted.

'Sourcing for ICT resources due to funding constraints; some teachers are not ICT compatible and are being educated rigorously.'

These challenges underscore the multifaceted nature of the ICT integration process within the educational landscape, demonstrating the need for targeted interventions and support mechanisms to address these issues effectively.

Table 4.11: Teachers Responses on Principals' Inspiration motivation for ICT integration.

Items'	Responses										Mean	Std. Dev
	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
	n	%	n	%	n	%	n	%	n	%		
There exists a clear vision of ICT in Our school	2	1.5	3	2.3	71	53.8	51	38.6	5	3.8	3.41	0.676
Works with teachers to arrive at the consensus on which initiative can be implemented in the ICT Budget	0	0	1	0.8	112	84.8	15	11.4	4	3	3.17	0.465
There is uninterrupted power supply within the school premises	1	0.8	15	11.4	66	50	34	25.8	16	12.1	3.37	0.868
There is a clear description of the policy in place	2	1.5	10	7.6	69	52.3	47	35.6	4	3	3.31	0.722
I take less time in picking the ICT materials from the Office of the Principal	2	1.5	13	9.8	91	68.9	24	18.2	2	1.5	3.08	0.631
Motivates teachers by focusing on attitude change on the use of ICT	0	0	6	4.5	37	28	85	64.4	4	3	3.66	0.616
Good practices of teaching with ICT are shared widely across the school	1	0.8	4	3	49	37.1	73	55.3	5	3.8	3.58	0.654

The results presented in Table 4.11 shed light on the inspiration and motivation levels among teachers within the context of ICT implementation.

Firstly, when asked about the clarity of the vision for ICT in their school, the data shows a majority of teachers 71(53.8%) hold a neutral stance, while 51(38.6%) agree, and 5(3.8%) strongly agree. The mean score of 3.41 indicates that, on average, teachers perceive the school's ICT vision somewhat positively, but with a notable level of neutrality. This suggests that there might be room for improving communication and understanding of the school's ICT vision among the teaching staff.

In terms of working together to arrive at a consensus on ICT initiatives to be included in the budget, a significant 112(84.8)% of teachers were neutral, 15(11.4%) agreeing and 4(3%) strongly agreeing. The mean score of 3.17 suggests a lower generally positive sentiment, indicating a collaborative approach in budgetary decisions related to ICT initiatives.

Regarding uninterrupted power supply within the school premises, 66(50%) of teachers hold a neutral stance, while 15(11.4%) disagree, 34(25.8%) agreeing and 16(12.1%) strongly agree. The mean score of 3.37 indicates a somewhat favorable perception. However, the variation in responses suggests that power supply reliability may be an area that requires attention for effective ICT implementation.

When asked about the clarity of policies in place, 69(52.3%) of teachers are neutral,47(35.6%) agree, and 4(3%) strongly agree, with a mean score of 3.31. This suggests a moderate level of satisfaction with the clarity of ICT policies, although there is a notable proportion of teachers who remain neutral.

Regarding the ease of access to ICT materials from the Office of the Principal, 91(68.9%) of teachers are neutral, 13(19.8%) disagree, 2(1.5%) strongly disagree, while 24(18.2%) agree, and 4(3%) strongly agree. The mean score of 3.08 indicates that, on average, teachers perceive a reasonable level of accessibility to ICT materials, but some challenges are still apparent.

When it comes to motivating teachers by focusing on attitude change regarding ICT use, 85(64.4%) of teachers agree, while 37(28%) are neutral, and 4(3%) strongly agree, resulting in a mean score of 3.66. This reflects a highly positive response, suggesting that motivational efforts aimed at changing teachers' attitudes toward ICT are generally effective.

Lastly, regarding the sharing of good teaching practices with ICT across the school, 73(55.3%) of teachers agree, 49(37.1%) are neutral, and 5(3.8%) strongly agree, with a mean score of 3.58. This indicates a positive perception of the extent to which teaching practices involving ICT are shared within the school.

In summary, the data indicates that while there is generally positive sentiment among teachers regarding ICT-related motivation and practices, there are areas such as the clarity of the school's ICT vision and power supply reliability that might benefit from further attention and improvement. The results also highlight the success of motivational efforts in fostering a positive attitude toward ICT use among teachers.

Further interrogation on school ICT policy revealed the following insight from a teacher at another school:

> "*In our school, we have rules that guide us on when to sign out and return the projectors. However, I find these rules unfavorable because the projector is kept in the principal's office, which takes a lot of time and demotivates*

most of us. I often wonder whether I should wait for the secretary or continue with my lessons."

Another teacher said we actually do note have a back up for power sulply,so my answer is no there is no adequate power supply this affects my lessons especially of the unpredictable whether where rains starts as early as 1100am.

4.3.4 Idealized Influence

Idealized influence had four items to measure; the items were scored on a five-point Linkert scale, with 5 representing strong agreement and 1 representing strong disagreement.

The interpretation of mean rating on likert items according to studies by Abd-Elfattah (2008) and Salem (2015) was as follows;

Mean rating	**Interpretation**
1.00-1.79	Strongly disagree,
1.80-2.59	Disagree,
2.60-3.39	Neutral,
3.40-4.19	Agree, and
4.20-5.00	Strongly agree.

Table 4.12: Principals' Idealized influence Responses for ICT intergration.

Items'	Responses										Mean	Std. Dev
	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
	n	%	n	%	n	%	n	%	n	%		
Use ICT tools during my lessons and demonstrate exemplary management skills for learners' success.	0	0	0	0	30	55.6	19	35.2	5	9.3	3.54	0.665
Communicate to teachers regularly and encourage them to embrace teamwork	0	0	1	1.9	23	42.6	26	48.1	4	7.4	3.61	0.656
Handle matters concerning ICT ethically by promoting moral values in the learning environment.	0	0	2	3.7	21	38.9	25	46.3	6	11.1	3.64	0.731
Promote collaborative learning that encourages teachers to share their skills in using ICT.	0	0	0	0	10	18.5	39	72.2	5	9.3	3.91	0.524

The results in Table 4.12 pertain to the aspect of "Idealized Influence" as perceived by principals.

For the first statement, "Use ICT tools during my lessons and demonstrate exemplary management skills for learners' success," it is noteworthy that 30(55.6%) of principals indicated a neutral stance, while 19(35.2%) agreed, and 5(9.3%) strongly agreed. The mean score of 3.54 suggests a relatively moderate level of agreement. This indicates that while a significant portion of principals appreciates the importance of using ICT tools and demonstrating exemplary management skills, there is still room for improvement in this aspect.

In the second statement, "Communicate to teachers regularly and encourage them to embrace teamwork," 26(42.6%) of principals had a neutral stance, while 48.1% agreed. The mean score of 3.61 reflects a generally positive sentiment, suggesting that principals are actively engaged in communicating with their teaching staff and fostering a culture of teamwork, specifically in the context of utilization of technilogies.

Regarding the third statement, "Handle matters concerning ICT ethically by promoting moral values in the learning environment," the majority of principals 25(46.3%) agreed, with 21(38.9%) in neutral and 6(11.1%) strongly agreeing. The mean score of 3.64 indicates a positive perception. This implies that principals are conscious of the ethical aspects related to ICT and are proactive in promoting moral values within the learning environment.

Lastly, for the statement "Promote collaborative learning that encourages teachers to share their skills in using ICT," a significant 39(72.2%) of principals agreed, with 10(18.5%) in neutral and 5(9.3%) strongly agreeing. The mean score of 3.91 reflects a highly positive response. This suggests that principals are actively promoting collaborative learning among teachers, particularly when it comes to sharing skills related to ICT usage.

Table 4.13: Teachers Responses on Principals' Idealized Influence for ICT intergration

Items'	Responses										Mean	Std. Dev
	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
	n	%	n	%	n	%	n	%	n	%		
Principal handles our requests concerning ICT tools ethically.	0	0	2	1.5	91	68.9	34	25.8	5	3.8	3.32	0.571
The principal develops slides and projects her work during her lessons.	3	2.3	2	1.5	112	84.8	11	8.3	4	3	3.08	0.553
The Principal provides a model of collaborative learning with students and teaching staff.	2	1.5	0	0	88	66.7	37	28	5	3.8	3.33	0.624
Communicate to teachers regularly and encourage them to embrace teamwork	3	2.3	0	0	88	66.7	37	28	5	3.8	3.33	0.624

Table 4.13 findings indicated that teachers views regarding the behavior of principals as expressed in the three statements of idealized influence by teachers.

Firstly, concerning the ethical handling of requests related to ICT tools, a significant 91(68.9%) of teachers had a neutral stance, and 34(25.8%) agreed, reflecting a positive perception of their principal's approach. Only 1.52% disagreed, and no respondents strongly disagreed. When the principal handles teachers' demands ethically, it instills confidence in the administration and encourages instructors to freely utilize ICT in the classroom.The procedural guidelines established by a transformative leader serve as a framework for teachers, as shown by analysis of the protocols they follow when requesting ICT resources from the Principal's office.Principal’s idealized practice of incorporating ICT tools in Schools may positively influence teachers utilization of tools in classroom Ogola (2017).

Secondly, when it comes to the principal's engagement in developing slides and projecting work during lessons, 112(84.8%) of teachers were neutral, and 11(8.3%) agreed. Conversely, 4(3%) strongly agreed, 3(2.3%) strongly disagreed with only 2(1.5%) disagreeing. One of the responsibilities of the principal is to instruct and oversee instruction. The principal's proficiency in employing ICT is likely to influence teachers' use of these technologies in the classroom.

Concerning the principal's communication practices and promotion of collaborative teaching approaches, survey results revealed that 88 teachers (66.7%) maintained a neutral position, while 37 teachers (28%) expressed agreement. The mean score of 3.33 indicates that communication practices require significant enhancement, particularly in relation to ICT integration. This finding suggests a notable opportunity to strengthen leadership communication channels and foster a more

collaborative teaching environment that effectively leverages educational technology.

In evaluating the principal's role as a model for collaborative learning, a concerning trend emerged where 66.7% of teachers maintained a neutral stance. Only 31.8% expressed positive perceptions, with 28% (n=37) agreeing and 3.8% (n=5) strongly agreeing that the principal effectively demonstrated collaborative practices among students and staff. The high percentage of neutral responses suggests potential gaps in leadership visibility or effectiveness in modeling collaborative approaches. A minimal 1.5% (n=2) strongly disagreed, with no teachers indicating simple disagreement. While these findings suggest that teachers generally viewed their principals as ethical leaders who promoted collaborative learning, the substantial neutral response coupled with ambivalence regarding the principals' expertise in facilitating ICT integration within classrooms points to areas requiring strategic intervention.

Follow-up interviews with teachers provided deeper insights into the ethical dimension of principal leadership, particularly focusing on how principals addressed and resolved teacher concerns. The qualitative data reinforced the quantitative findings regarding ethical leadership while offering nuanced perspectives on principal-teacher interactions.

> *"In our school, we have no issues with the way our principal handles our concerns, because before we reach the principal, the Academic Master would have already sorted them out. Therefore, we have minimal interactions with the principal. The only time we see each other is during her routine class checks or staff meetings."*

The principal handles our concerns effectively, especially regarding network and e-resource issues. We are always informed about when problems will be resolved, which I find ethical. However, I face challenges when collecting projectors from the secretary, as this process cuts into my lesson time."

"Although the principal never misses following the lesson timetable, they have not been observed using slides while teaching. The principal has a computer in their office for administrative work, but for teaching, only uses lesson notes."

These teachers' result is consistent with Muia (2018) investigations about transformative leadership and learning outcomes in Kenya. One of the objectives was to see how much the principal's idealized practice affects student achievement in Machakos County schools. Ethical values are critical components of management. When a principal demonstrates ethical values, he or she might acquire the trust of instructors, who will gladly join with him to attain organizational goals. Gyansah (2020); Ogolla (2017) to acquire the trust of others, transformational leaders must display ethical values such as accountability, respect, and devotion. Teachers may not be able to use the instrument successfully if transformational principals are not at the forefront of programme implementation as implementers. Furthermore, Kitur (2019) recommended that principals adopt and demonstrate idealised influence in the examinations to improve KCSE performance. The emphasis is on idealised aspects that have a significant influence on use of technonologies enhancing creativity among learners during instructions.

4.4 ICT Integration

4.4.1 Teachers' Competencies on ICT usage in Classroom

The question was whether teachers were competent in utilizing the technologies during teaching activities in Kakamega secondary schools. The statements about teachers' skills on ICT usage were graded on a five-point Linkert scale, with 5 being Excellent and 1 being No Expertise. The analysis was based on weighted average of responses and the standard deviation.

The interpretation of mean rating on likert items according to studies done by Abd-Elfattah (2008) and Salem (2015) was as follows;

Mean rating	**Interpretation**
1.00-1.79	No expertise
1.80-2.59	Fair
2.60-3.39	Good
3.40-4.19	Very good
4.20-5.00	Excellent

Table 4.14: Teachers' Competencies on ICT usage in Classroom

Items'	Responses										Mean	Std. Dev
	No Expertise		Fair		Good		Very Good		Excellent			
	n	%	n	%	n	%	n	%	n	%		
I can use office applications (word processor, spreadsheet, PowerPoint) to enhance my content development.	1	0.8	2	1.5	13	9.8	56	42.4	60	45.5	4.3	0.771
I am comfortable surfing the internet and share pertinent information to my learners	1	0.8	1	0.8	6	4.5	46	34.8	78	59.1	4.51	0.693
I am good at using the computer and its software in and other ICT tools to access updated information for learning	1	0.8	0	0	10	7.6	38	28.8	83	62.9	4.53	0.704
I use my computer to write emails.	1	0.8	0	0	5	3.8	16	12.1	110	83.3	4.77	0.587

Table 4.14 shows that teachers agreed with all of the computer-use statements.

Notably, a substantial majority of teachers demonstrate a high level of competence. Only a small proportion 1(0.8%) reported having no expertise and being unable to use the computer at all. In contrast, a significant number of teachers reported having good to excellent ICT skills. For instance, 60 (45.5%)stated that they were excellent at using the computer and its software for research and downloading files, while 110 (83.3%)mentioned using their computers for writing emails.

Additionally, a substantial percentage of teachers 83(62.9%) reported feeling comfortable surfing the internet, and a significant number 60(45.5%) stated that they could use office applications proficiently, such as word processors, spreadsheets, and PowerPoint. These results show that the majority of the sample's instructors have a high level of ICT proficiency, which can help them successfully incorporate technology into their teaching and learning contexts.

This study supports a scenario where principals encourage a supportive ICT environment. Teachers can improve their abilities, move past the conventional talk-based teaching method, and satisfy the demand for current technology-based collaborative learning methodologies on a worldwide scale (Muia 2021)

4.4.2 ICT usage by Teachers in Specific Purposes

The question was how frequently teachers in Kakamega secondary schools used ICT devices in the classroom. The statements were scored on a five-point Linkert scale, with 5 representing Excellent and 1 representing No Expertise. The weighted average of replies and the standard deviation were used in the analysis.

The interpretation of mean rating on likert items according to studies done by Abd-Elfattah (2008) and Salem (2015) was as follows;

Mean rating	**Interpretation**
1.00-1.79	No expertise
1.80-2.59	Fair
2.60-3.39	Good
3.40-4.19	Very good
4.20-5.00	Excellent

The results are presented in Table 4.15.

Table 4.15: ICT usage by Teachers in Specific Purposes

Purpose	**Responses**								**Mean**	**Std. Dev**
	Never		**Rarely**		**Often**		**Very Often**			
	n	%	n	%	n	%	n	%		
Teaching specific subjects	0	0	13	9.8	82	62.1	37	28	3.18	0.59
Communicating with stakeholders	1	0.8	6	4.5	6	4.5	119	90.2	3.84	0.522
Preparing lesson plans	1	0.8	6	4.5	59	44.7	66	50	3.44	0.621

The study aimed to determine the frequency of ICT device utilization by instructors in high schools in Kakamega for various purposes. The findings, as presented in Table 4.15, provide valuable insights into this aspect.

The majority of instructors 82(62.1%) said they used ICT often for teaching particular subjects, while 37(28%) said they did it very frequently. Additionally, 13 (9.80%) said they didn't use ICT often, and none said they only occasionally utilized

it for this purpose. This category had a mean rating of 3.18 and a standard deviation of 0.59.

Concerning the statement of using ICT to communicate with stakeholders, 4.5% of teachers said they used it frequently, while 90.2% said they used it very often. 4.5% of users indicated infrequent use, while 0.8% were neutral. Only 0.76% of respondents stated that they have never utilized ICT for this reason. The mean score for communicating with stakeholders was 3.84, with a standard deviation of 0.222.

In terms of using ICT for developing lesson plans, 66 (50%) of instructors said they did it frequently, 59(44.7%) said they did so very frequently, and 6(4.5%) were neutral. ICT usage for lesson planning was never reported by 1(0.8%) of respondents. This category's mean score was 3.44, with a 0.621 standard deviation.

According to these findings, instructors in Kakamega secondary schools use ICT devices on a regular basis for a number of purposes, including teaching specific subjects, communicating with stakeholders, and planning lesson plans. This result could be attributed to fundamental knowledge of applications such as Microsoft Office and Excel (Mwangi & Khatete, 2017). Although some instructors may have received training, it was insufficient for ICT integration, according to Muinde and Mbataru (2019). Transformational principals can support teachers' professional development by fostering innovation in the classroom and providing a computer-enabled atmosphere.

4.4.3 ICT Tools usage by Teachers in Classroom

The question was how frequently teachers in Kakamega secondary schools used ICT devices in the classroom. The statements were scored on a five-point Linkert scale, with 5 representing Excellent and 1 representing No Expertise. The weighted average of replies and the standard deviation were used in the analysis. A weighted average of 1.00-2.59 suggests disagreement with a statement, but a range of 3.40-5.00 implies agreement. A weighted average of 1.00-1.79 indicates that there is no competence. 1.80-2.59 is considered fair, 2.60-3.39 is considered good, 3.40-4.19 is considered very good, and 4.20-5.00 is considered excellent. The results are shown in Table 4.16.

Table 4.16: ICT Tools usage by Teachers in Classroom

ICT Resources	Responses										Mean	Std. Dev
	Not Used		Less Used		Rarely Used		Moderately Used		Mostly Used			
	n	%	n	%	n	%	n	%	n	%		
CDS	1	0.4	5	1.8	5	1.8	152	55.1	113	40.9	4.34	0.645
DVDS	2	0.7	7	2.5	45	16.3	181	65.6	41	14.9	3.91	0.687
You-Tube	1	0.4	8	2.9	217	78.6	40	14.5	10	3.6	3.18	0.549
Smart Boards	0	0	15	5.4	124	44.9	78	28.3	59	21.4	3.66	0.874
Projectors	1	0.4	3	1.1	23	8.3	145	52.5	104	37.7	4.26	0.685
Computers	0	0	1	0.4	22	8	115	41.7	138	50	4.41	0.652
Radio	19	6.9	118	42.8	134	48.6	3	1.1	2	0.7	2.46	0.673
Internet	0	0	3	1.1	12	4.3	76	27.5	185	67	4.61	0.627

Table 4.16 findings show that 152 (55.1%) of the teachers used CDs in the classroom primarily, 113 (40.9%) moderately, 5(1.8%) indicated neutral use, and a negligible 1(0.4%) did not utilize CDs. Interpretations of the results suggested that Kakamega schools offered instructional materials as a means of supporting their teachers. The electronic content of the Kenya Institute of Curriculum Development (KICD) can be stored and preserved using compact discs (CDs). These findings are comparable to those of Mavango (2021), who evaluated the use of ICT e-resources in English language instruction in Kakamega County and found that teachers were familiar with the CDs since they were readily available in the classroom. The use of ICT in teaching and learning may be hampered by his further criticism of computer labs/rooms, mobile phones, whiteboards, CD-ROM discs, and film strip slides as insufficient teaching tools. Transformational principals should prioritize taking into account of teachers' requirements by ensuring the provision of both hardware and software resources to facilitate effective instruction.

Regarding the utilization of projectors Majority of the respondents **145 (**52.5%) said it was mostly used, 104(37.7%) said it was moderatelly used, 23(8.3%) said it was rarely used, and 1(0.4%0 said it was not used in schools. According to the observations, most schools had two to three projectors, which was probably due to the expensive nature of the equipment. Some of these devices were therefore broken, which made ICT integration less effective.

In terms of computer usage, the study discovered that 138(50%) of teachers mostly used the tools,104(41.7%)used it moderately, and very few ranked it as rarely used. This positive outcome can be attributed to computer accessibility in numerous areas, such as the staff room, library, and computer laboratories, which has been made

possible by supporting leadership on the needs of teachers for successful ICT integration in teaching and learning. These findings are congruent with Nang'unda's (2019) investigation about principal's leadership in integration of technologies in school management, which discovered that 68.9% of teachers had access to computers, however some were damaged. Consequently, Shikomera (2024) noted that some earlier studies had made reference to the problem that schools lacked appropriate functional computers. According to the observation sheets, some computers were broken, therefore the principals of the schools without ICT technicians had to hire outside technicians to fix them. Providing timely access to learning resources is a duty of a transformational principal. The inclusion of ICT in classrooms could suffer from malfunctional computers.

In terms of YouTube application usage, a small number of instructors 40 (14.8%) and 10 (3.6%) stated that they utilized it, however majority of teachers 217(78.6%) claimed they rarely used it. a notion that principle support was required because teachers lacked the essential skills to use the application. These findings back with Muvango's 2021 study in Kakamega, which revealed that while e-resources were available in classrooms, teachers rarely used them. The teacher's reluctance to use the resources is most likely due to a lack of ability. According to the researchers, instructors sought to participate in skill development but were thwarted by school management (Mwawasi, 2014; Muvango, 2021). Sharples and Moldeus (2014) also conducted a comparative study to assess instructors' preparedness inco-operation of technologies in elementary schools in Nairobi, Nakuru, and Mandera, as well as rural Mandera and Turkana. Despite 78% of respondents stating computers were easy to use, just 8% of instructors felt appropriately prepared for using technology in

the classroom. The researcher determined that the disconnect between actual use and perceived ease of use in classrooms was due to inadequate skills in ICT integration.

Radio was the least popular choice, with 118 (42.8%) and 134 (48%), respectively, indicating that it was used less frequently or not at all, attracting a mean of 2.41. Radio is an interactive teaching and learning medium that helps to disseminate information across the country. In Kenya, the KICD creates printed and electronic resources to supplement the educational curriculum. These findings indicate that teachers are hesitant to use radio tools, which may be due to insufficient training on how to use the facility as an ICT resource. It is the responsibility of a transformative administrator to meet the unique requirements of educators and students in the classroom. The observation checklist found that a lot of schools had radios that were broken or difficult to use, which is likely why teachers were hesitant to use the equipment. In Regard to internet accessiabilty in school majority of the teachers 185 (67%) of teachers claimed to access and use the internet, while 3(1.1%)claimed not to. Despite the fact that most administrators acknowledged that schools with internet connectivity benefited from EPS, they asserted that power disruptions and unreasonably high membership costs are the true problems Nang'unda's (2019).

4.4.4 Availability of ICT Devices in School

The study utilized an observation guide to check-out the suitability and functionality of technologies used during instructional activities across schools. This observational data served to triangulate findings from questionnaires and interviews. The key findings were as follows

Table 4.17: Availability of ICT Devices

ICT devices	Avaliable		Adequate		Not functional	
	f	%	f	%	f	%
Desk top computers	54	100	27	50	14	25.9
Lap tops	22	40.7	22	40.7		
Mobile phones	54	100	54	100		
Internet	45	83.3	25	46.3		
Projector	54	100	35	64.8	19	
Photo copiers	45	83.3			25	46.3
Radio	54	100			20	37
Computer lab	54	100	25	46.3		
CDs,DVDs	54	100				
Electricity	54	100				

Source observation guide of the Researcher.

Infrastructure and Basic Equipment:

All schools (100%) had access to electricity and were equipped with desktop computers, though only 50% reported having adequate numbers, and 25.9% of existing units were non-functional. This inadequacy and functionality issues could potentially hamper ICT integration if not addressed.

Regarding laptops, 40.7% of schools had access to them, with all available units reported as adequate and functional. However, these were primarily personal devices that teachers brought due to insufficient desktop computers.

All staff members (100%) owned personal mobile phones, reflecting the broader technological advancement and increasing reliance on electronic transactions and communication.

Internet Connectivity:

83.3% of schools had internet connectivity, though only 46.3% reported adequate service. The inadequate internet service was attributed to provider issues and poor connection infrastructure in certain areas.

Presentation and Learning Tools:

All schools (100%) had projectors, but only 64.8% reported having adequate numbers, limiting simultaneous usage by teachers.

While 83.3% of schools had photocopiers for duplicating office work and student learning materials, 46.3% were non-functional, forcing teachers to rely on external copying services at additional cost.

All schools (100%) were equipped with radios, though 37% were non-functional. This is significant as radios are used for programmed lessons, and their dysfunction can impede ICT integration in teaching and learning.

All schools (100%) possessed CDs/DVDs containing subject content from the Kenya Institute of Curriculum Design and revised question papers.

The findings indicate that secondary schools were making efforts to implement technology in school settings. However, the effectiveness of this integration was limited by the functionality and adequacy of devices, as ICT tools are interdependent in creating a comprehensive learning environment. This observation aligns with Gacicio (2022), who reported that many classrooms lacked essential equipment such as projectors and computers, creating significant barriers to effective ICT integration and highlighting the need for transformational leadership.

Due to time constraints and the coinciding national examination period, classroom observations could not be conducted. However, through interviews with teachers and students regarding device usage frequency, several notable challenges emerged:

One teacher reported, *"I don't often utilize the devices because of the time required to set up the equipment in class."* This suggests that logistical challenges present a significant barrier to regular technology integration.

Another educator stated, *"I use the devices regularly as we have e-learning resources provided by the Kenya Institute of Curriculum Development*." This indicates that when appropriate digital content is available, teachers are more motivated to incorporate technology.

Interviewer 3 explained, *"I use technology sometimes, but power disruptions due to weather conditions are problematic." T*his challenge was corroborated by the researcher's observations of rainfall patterns that frequently began before midday, potentially causing electrical interruptions.

Interviweer 4 : "*The weather is unpredictable, so our power is off and affecting the usage of ICT."*

This testimony helps explain why even available and functional devices might not translate to effective ICT integration, providing context to the disparity between availability and adequacy rates in the quantitative data.

Interviweer 5: *"We are faced with the high cost of maintenance, so it takes time for us to repair."*

This testimony strengthens the quantitative data showing 25.9% non-functional desktop computers and significant non-functionality rates in photocopiers (46.3%) and radios (37%). It explains why equipment remains non-functional for extended periods, adding depth to the statistical findings.

Interviwer 6: "*They are not adequate for our students especially with the surging population."*

This narrative validates the quantitative gap between availability and adequacy across devices. While availability rates are high (83-100%), adequacy rates are significantly lower (40-65% for most devices), with the interview providing crucial context about growing student populations.

Interviweer 7: *"Theft is rampant not sure of getting the tools although we do report the cases."*

This account helps explain the fluctuation in availability and functionality rates, offering insight into why schools might report having devices but not adequate numbers for student use.

These findings suggest that while technological infrastructure exists to some degree, multiple factors-including setup time, power reliability, and resource availability—continue to hinder consistent ICT integration in classroom instruction.

4.4.5 ICT Available Documents

An anaysis of a vailable documents was evaluated and the findings exhibited in table 4.18

Table 4.18: Availablability of Records of Documents

Documents	**Available**	
	f	**%**
Staff development	32	59.3
ICT committee minutes	22	40.7
Staff minutes	54	100
Internet payment records	45	83.3
Lesson plans,schemes of work	54	100
School ICT policy	44	81.1
Expert support	36	66.6
Records on ICT infrustructure	54	100

Principals are expected to provide a clear vision and policy framework to guide teachers in integrating ICT in school. When the document is not there, it may demotivate the teachers as teachers need to have a structure or framework for them to use ICT willingly. The relatively low availability of staff development documentation (59.3%) indicates potential shortcomings in professional growth opportunities for ICT skills. Transformational leaders prioritize capacity building and individual consideration - the lack of documentation suggests this may not be consistently implemented.

The analysis of available documents of ICT in public secondary schools in Kakamega brought to light different findings, particularly on policy documents. All the schools (100%) had staff minutes, infrastructure records, lesson plans and schemes of work, while it was established that 32 (59.3%) had staff development, 45 (83.3%) had records on internet payment, and 22 (40.7%) had ICT committee minutes. Expert support was documented in 32 (66.6%) of schools.

All schools maintain records on ICT infrastructure, but fewer document staff development. This suggests a potential imbalance toward technical resources over human capacity development - transformational leadership requires attention to both. The document analysis reveals a mixed picture of transformational leadership for ICT integration. While operational aspects of ICT appear well-documented, the governance, policy, and professional development aspects that would indicate comprehensive transformational leadership are inconsistently present across schools. This suggests a potential need for strengthening transformational leadership approaches, particularly in areas of staff development, formal ICT governance structures, and universal policy implementation.

These results align with interview and questionnaire findings on transformational leadership, which indicated varied levels of inspirational motivation and intellectual stimulation among principals. The triangulation of document analysis with interview and questionnaire data strengthens the conclusion that transformational leadership is unevenly practiced in ICT integration across Kakamega public secondary schools. Where documentation of staff development and ICT committees exists, teachers reported higher levels of individualized consideration and intellectual stimulation from their leaders. Conversely, schools lacking these documents showed lower scores on transformational leadership dimensions in the questionnaire data.

The findings concur with Nang'unda (2019) findings , about leadership influence on automation of technologies in school management and found that the majority of schools (69.5%) did not have an ICT policy and a significant number of schools did not have functional support for staff development in school.

4.4.6 ICT Resources in Schools

The availability and use of computers in school was critical to the study; the inquiry attempted to determine if computers were available at school and whether students and teachers used them. They were to answer each query with yes or no. Table 4.19 shows the results.

Table 4.19: ICT Tools Usage by Students

Computer and ICT tools usage in schools	Responses			
	No		Yes	
	n	%	n	%
Do you have any computers in your school?	1	0.36	275	99.64
Are you competent in using a computer?	21	7.61	255	92.39
Do teachers use ICT tools in classrooms?	2	0.72	274	99.28

According to the results in Table 4.33, Majority of students (275)99.64% reported having computers in their individual schools. In terms of being proficient in computer use, the majority 255 (92.39%) reported being competent, and 274 (99.28%) indicated that their teachers use technology in the classroom. However, 0.36%, 7.61%, and 0.72% of respondents disagreed with having computers, being competent, and teachers using computers in the classroom. Those who disagreed with the statement that teachers were not using ICT tools should have their perspectives heard; consequently, training teachers in the use of ICT tools in the classroom was a vital issue that a transformational leader should not overlook. When students have concerns about their education, the main person to address them is the Principal, (Kinyanjui, 2019).

Only, 2(0.72%) of those who responded to an open-ended question about the availability of computers in their schools. They stated that their schools possessed computers, but that they were insufficient to meet the demands of the students. Transformational principals earn students' trust by catering to their needs; students see the principal as someone who can handle their worries about learning,

Inadequate infrastructure and inadequate internet could stymie the success of ICT integration in the classroom (Ferguson, 2021).

Therefore, demands for the intervention of government officials and others to invest in equipping public secondary schools with ICT tools Gimenez and Calero, (2020). The findings demonstrates that students and teachers in Kakamega secondary schools received strong assistance from transformational principals in integrating ICT in the classroom. The study's findings suggested that teachers who received more ICT support from their head teachers saw computers as a necessary instrument for improved learning outcomes than those who did not. In her examination of digital technology integration in Kiswahili language education, Miima (2014) discovered that technological implementation was compromised primarily because Kiswahili instructors lacked adequate proficiency in utilizing digital resources effectively.

4.4.7 ICT Expertise of Students in Schools

The researcher sought to establish where students obtained their computer skills. The question asked was: Where did you learn your expertise in computers?

Table 4.20: Source of Computer Expertise of Students in Schools

Where did you learn your expertise in computers?	Responses	
	n	%
Media	1	0.36
The School	175	68.84
The School, Friend	36	14.12
The School, Home	43	16.86

Table 4.18 shows that 255 students responded to open-ended questions about where they learned their talents, while 21 students did not. According to the 255 responses, 68.84% learnt their abilities at school, 14.12% in school and with friends, 16.86% in school and at home, and 0.36% at home. These results were promising, particularly among school administrators; because learning to utilize ICT tools can help students enhance their reading abilities, expand their grasp of information, and help them think critically, solve issues, and compete in the job market. Delen & Bulut, 2011. Transformational principals create a welcoming climate, encourage skill development, and assist educators and learners in realising individual potentiealities in technology use,(Cuadros, Reche, & Lusena, 2016).

4.4.8 ICT Resources Accessibility Frequency by Students in Identified Locations

This section delves into the accessibility of ICT resources by students in specific locations within our study.

Table 4.21: ICT Resources Accessibility Frequency by Students in Identified Locations

Location	Responses										Mean	Std. Dev
	Never at all		Sometimes		Twice a week		Frequent		Very frequent			
	n	%	n	%	n	%	n	%	n	%		
Library	51	18.5	211	76.4	3	1.1	5	1.8	6	2.2	1.93	0.678
Computer Lab	9	3.3	8	2.9	14	5.1	58	21	187	67.8	4.47	0.959
Classroom	43	15.6	217	78.6	3	1.1	11	4	2	0.7	1.96	0.625

Table 4.21 provides valuable insights into the frequency of ICT resource accessibility by students in specific locations, which is essential for understanding the extent to which students can access ICT tools and facilities.

In the context of the library, the data reveals that a significant portion of students 211 (76.4%) reported "Sometimes" accessing ICT resources, while 51(18.5%) mentioned "Never at all." Only a small percentage reported more frequent access. The mean score of 1.93 indicates a moderate level of accessibility. These findings suggest that while the library serves as a source of ICT resources for some students, there is room for improvement to ensure more consistent access for all.

For the computer lab, the results are notably different. A large majority of students 187(67.8%) reported "Very frequent" access, while 58(21%) mentioned "Frequent" access. This high level of access is reflected in the mean score of 4.47, indicating a strong and consistent accessibility of ICT resources in the computer lab. These findings suggest that the computer lab is a well-utilized and easily accessible location for students to engage with ICT resources.

In contrast, regarding the classroom, the data indicates that a great number of students 217(78.6%) reported "Sometimes" accessing ICT resources, while 43(15.6%) mentioned "Never at all." The mean score of 1.96 suggests a moderate level of accessibility, but there is a notable proportion of students who face limitations in accessing ICT resources within the classroom environment. This highlights the need to enhance ICT resource availability in classrooms to ensure more equitable access for all students.

In summary, the study highlights varying degrees of ICT resource utilization across different locations, with the computer lab demonstrating the highest frequency of access, with a significant number of respondents accessing it very frequently. The library and classroom, on the other hand, see less frequent usage, with occasional access being the most common pattern in these locations. School principals are critical to the success of school projects because they can utilize their influence on the Board of Management to provide adequate ICT infrastructure, resulting in the positive impact sought for successful technology integration in a school. Learners are driven to use resources that are conveniently accessible, which can foster trust in leadership.

These findings are congruent with Njathi, Ngaruiya, and Maithya, (2018)'s descriptive study on the way principals' of public schools in Kiambu county perceive the computer usage in school administration. 205 principals filled out the questionnaires. The attitude of the principals was the most important consideration. The findings revealed that school principals' attitudes about computer use influenced their computer use. The principals' positive approach towards computer use benefits other technical users in the school. Furthermore, a study conducted in Italy to assess school principals' support for ICT integration discovered that principals' encouragement for technologies is dependent on context variables which include the adequacy technologies and the Administrators' perceptions towards ICT integration.

4.4.9 ICT Impact on Student Learning in Classroom

This part evaluates ICT usage among learners within the classroom setting. Table 4.22 presents responses from students, offering insights into how access to technology forsters learning experiences.

Table 4.22: ICT Impact on Student Learning in Classroom

Items'	Responses										Mean	Std. Dev
	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree			
	n	%	n	%	n	%	n	%	n	%		
I find learning interesting when ICT tools are used during classroom instructions.	0	0	3	1.1	127	46	112	40.6	34	12.3	3.64	0.707
ICT compels me to take part in classroom activities.	0	0	1	0.4	77	27.9	169	61.2	29	10.5	3.82	0.606
ICT supports me in retrieving shared information and boosts my participation in class	0	0	2	0.7	75	27.2	152	55.1	47	17	3.88	0.678
ICT makes me cooperate with other learners in other schools.	0	0	1	0.4	67	24.3	162	58.7	46	16.7	3.92	0.647
I understand more when my teacher uses ICT in the classroom.	2	0.7	11	4	210	76.1	41	14.9	12	4.3	3.18	0.6
I fear using the computer whenever I am given a task by my teacher	12	4.3	58	21	160	58	42	15.2	4	1.4	2.88	0.763
I cannot access the computer lab to complete my assignments on time, and it's affecting my schoolwork.	8	2.9	37	13.4	196	71	32	11.6	3	1.1	2.95	0.639
There is no internet access in my school, which makes it difficult to complete my assignments and access important resources."	21	7.6	29	10.5	62	22.5	99	35.6	65	23.6	3.57	1.178

The data in Table 4.22 reflects students' perceptions of the impact of ICT on their learning experiences in the classroom.

In the first statement, "I find learning interesting when ICT tools are used during classroom instructions," the data indicates that a substantial portion of students 112(40.6%) agreed, with an additional 34(12.3%)strongly agreeing. The mean score of 3.64 suggests a positive sentiment, indicating that a significant number of students find their learning experience more engaging and interesting when ICT tools are integrated into classroom instruction. This demonstrates the probable of technology to forster students' interest and participation during classroom sessions. The resuts collaborate with prior investigations which demonstrated that fruitful use of ICT promotes students' reading levels, deepen their understanding of content, and help them think critically, solve problems, and compete in the job market,Mang, et.al (2018).The duty of the principal is to foster an ICT culture by advocating for technology and securing end-user acceptance of these tools in classroom instruction. This is the principal's ability to support and act.

For the statement, "ICT compels me to take part in classroom activities," the majority of students 169(61.2%) agreed, with 29(10.5%) strongly agreeing. The mean score of 3.82 suggests a strong positive impact, indicating that ICT has a compelling effect on student participation in classroom activities. This suggests that students are motivated and actively involved when ICT tools are employed in their learning environment.

Regarding the statement, "ICT supports me in retrieving shared information and boosts my participation in class," a significant 152 (55.1%) of students agreed, with 47 (17%) strongly agreeing.The mean score of 3.88 reflects a highly positive

response, demonstrating that ICT facilitates information retrieval and actively contributes to increased student participation in class discussions and activities.

In terms of cooperation among learners, the statement "ICT makes me cooperate with other learners" received agreement from 162(58.7%) of students, with 47(16.7%) strongly agreeing. The mean score of 3.92 indicates a strong positive impact of ICT on fostering cooperation and collaborative learning among students.

However, in the statement "I understand more when my teacher uses ICT in the classroom," the majority of students 210(76.1%) were neutral, 41(14.9%) agreed and 14 (4.3%) strongly agreeing. The mean score of 3.18 suggests a positive but less pronounced impact compared to the previous statements.

In contrast, when it comes to the statement "I fear using the computer whenever I am given a task by my teacher," the data shows that 58 (21%) of students disagreed, while 42 (15.2%) agreed while 160 (58%) were neutral on fearing doing assignments given by the teacher.The mean score of 2.88. Based to the data, most students are afraid of utilizing computers for assigned work. This could be because computers are considered an elective subject in Kenyan schools. When pressed further, some claimed that it was owing to internet outages and inadequate facilities that they were unable to complete their assignments. Nang'unda (2019) ; Oluoch, Ajowi, & Bosire (2015).

Similarly, for the statement " I cannot access the computer lab to complete my assignments on time, and it's affecting my schoolwork."majority 71% of students indicated neutral, 32 (11.6%) agreeing while 37(13.4%) disagreed. The mean score of 2.95 is low, indicating that students were not given enough opportunity to use

computers. The differences in responses imply that students were unsure if they had enough time for computer use. According to previous research, teachers and students raised concerns about insufficient time because most of the lesson was spent connecting and testing if the computers were working before the class began. Mbataru & Muinde (2019). Transformational leaders support an ICT environment by providing electronic devices in the classroom, such as laptops, projectors, and appropriate wifi for teaching and learning. This could lead toward successful ICT integration in teaching and learning.

Lastly, in terms of internet access, the statement "There is no internet access in my school" received varying responses, with 99(35.6%) of students agreeing, 62 (22.5%) were neutral while 29(10.5%) disagreed. The high standard deviation (1.178) suggests significant variability in the availability of internet access across different schools, which could impact students' experiences with ICT.

In summary, Table 4.36 underscores the multifaceted impact of ICT on student learning within the classroom. These findings supported earlier research: ICT can improve collaborative learning, help teachers' subject development, boost teachers' efficiency, and foster positive relationships between teachers and students,Laaria (2013). Access to knowledge can also assist students in thinking critically and effectively solving problems (Khan, Hasan, & Clement, 2012). The researcher suggested transformational principal to enhance the practice of supporting teachers and students to access information through provision of Adequate ICT facilities.

Focus group responses

‘’ Although we have access to the computer lab at our school, the time allotted for us to use the resources is not sufficient, making it difficult for us to complete our assignments."

"While we can access the computer lab, the network issues are a significant challenge, preventing us from utilizing the resources effectively."

4.5 Inferential Analysis Results

A statistical examination through regression analysis was conducted to assess how Visionary Governance (transformational) practices predict levels of ICT integration. The analysis specifically investigated how the transformational subconstructs(cognitive stimulation, individual attention inspirational motivation, and exempary influence) influenced ICT integration and its subconstructs in instruction. To test the hypothesis of the relationships of these subconstructsPearson correlation coefficient was used. A model summary was generated to identify predictor variables for ICT integration and to detect potential unmeasured variables affecting the relationship. Analysis of Varriance was employed to establish statistical significance in mean varriations among various subconstructs of both transformational leadership and information and communication technology integration.Multiple regression analysis was performed to comprehensively analyze the relationships between all subconstructs. Statistical Package for Social Sciences software (SPSS) was applied on all statistical analysis.

4.5.1 Hypothesis Testing

The researcher investigated the potential relationship between a principal's personalized attention to educators and the incorporation of technologies in educational practices.

H_{01}: There is no relationship between principal's Individual consideration and integration of ICT in teaching and learning in public secondary schools in Kakamega County

The relationship between individual consideration (independent variable) and ICT integration in classroom (dependent variable) is detailed in Table 4.23, which contains results from Pearson moment correlation coefficient analysis.

Table 4.23: Correlation Anaysis: Principal's Individualized Consideration and ICT Integration

	ICT Integration in Classroom	**Individualized Consideration**
ICT Integration in Classroom	1	
Individualized Consideration	.584**	1
N	.000	
	108	108

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

Based on the exhibited in Table 4.23, a statistically significant positive association exists between these two variables ($r(108) = 0.584$, $p<0.001$). This finding demonstrates a moderately strong positive correlation between classroom ICT integration and Principals' individualized consideration practices. This suggests that as educators incorporate more technology into their teaching, they tend to show

greater individualized consideration toward their students, indicating that technology implementation may positively influence personalized instructional approaches.

4.5.2 Regression Model Summary for Individualized Consideration on ICT Integration in Classroom

Regression analysis was conducted to establish the extent to which predictor variable individual consideration can be used to predict the response variable ICT integration in classroom. Cohen's (1988) effect size guidelines were applied to interpret the correlation strength: strong correlation (0.50 to 1.0), moderate correlation (0.30 to 0.49), and weak correlation (0.10 to 0.29). Additionally, the analysis calculated the percentage of variance in the dependent variable attributable to the independent variable. Table 4.24 presents these findings.

Table 4.24: ANOVA Summary for Individualized Consideration

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.584	0.341	0.334	1.31571

The regression analysis summarized in Table 4.24 indicates a moderate predictive relationship between variables, with principals' individualized consideration explaining 34.1% of the variation in classroom ICT integration (Adjusted R^2 = 0.334). Notably, this model leaves 65.9% of the variance unexplained by the measured factor. This inplies that teachers' classroom technology usage may be influenced by additional external factors. The findings indicate that addressing teachers' specific ICT-related needs may enhance technology implementation in teaching and learning processes.

Table 4.25: Individualized Consideration Predictive Model

Model		Sum of Squares	Degrees of freedom	Mean Square	F	Sig.
1	Regression	94.765	1	94.765	54.743	0.000
	Residual	183.497	106	1.731		
	Total	278.262	107			

Dependent Variable: Integration of ICT

Predictors(constant) Individual consideration

A linear relationship between individualized consideration (predictor variable) and classroom ICT integration is confirmed through regression ANOVA testing, as shown in Table 4.25. The relationship achieves statistical significance at $p<.05$ (specifically $p=0.00$), with $F(1,106) = 54.743$, exceeding the predetermined 0.001 significance threshold.

Table 4.26: Predictive Values for Individualized Consideration Components

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	5.380	0.890		6.047	0.000
Individualized Consideration	0.284	0.038	0.584	7.399	0.000

Table 4.26 contains regression coefficients used to develop a univariate regression model between individualized consideration (explanatory variable) and classroom ICT integration (response variable). The model reveals individualized consideration's statistically significant impact on classroom ICT integration (P-value = 0.00, below the 0.05 significance level). With a beta coefficient of 0.284, each unit increase in individualized consideration yields a corresponding 0.284 unit improvement in classroom ICT integration. After null hypothesis rejection, the findings confirm that

individualized consideration practices significantly influence classroom technology integration. The resulting equation is expressed as: IT = 5.380 + 0.284IC, where IT represents ICT integration and IC represents individualized consideration.

These findings strongly align with Ferguson's (2021) comprehensive study on leadership support for teachers' professional development, which emphasized the critical role of individual consideration practices. Teachers consistently reported receiving targeted tutorial resources from principals specifically designed to enhance platform utilization during remote instruction. Notably, teachers who participated in structured professional development focused on ICT implementation demonstrated significantly enhanced service delivery and measurably improved student learning outcomes, as thoroughly documented through systematic observation of their classroom interactions. These compelling findings underscore the urgent need for educational institutions to prioritize individual consideration within transformational leadership frameworks as an essential strategy for developing robust technological competencies among teaching staff in contemporary educational settings.

Further evidence comes from Ndiritu et al. (2018), who examined the gap in digital tool implementation among transformational school administrators in 40 Kenyan secondary schools. Their research established a significant positive correlation (r = 0.560) between administrative support and teachers' use of digital technologies in instruction. The researchers recommended targeted ICT training for school administrators and integration of technology-focused professional development into daily educational activities.

Principals who address the unique demands of their teachers earn greater trust. As Ogola (2017) notes, transformative leaders who attend to teachers' specific needs

successfully build trust regarding classroom technology integration. These effective principals actively promote professional development while ensuring adequate computer resources for instruction. Schools that employ dedicated ICT technicians provide crucial support for teachers struggling with technology implementation. Notably, teachers in the study rated principals highly for their availability and mentorship, underscoring the importance of individual consideration in technology leadership.

H_{02}: There is no relationship between Principals' Intellectual stimulation and ICT integration in Public secondary schools in Kakamega county

The Researcher applied correlation analysis to evaluate whether intellectual stimulation (independent variable) exhibits a significant relationship with classroom ICT integration (dependent variable).

Table 4.27: Correlation Analysis : Principal's Intellectual Stimulation and ICT Integration

	ICT Integration in Classroom	**Intellectual Stimulation**
ICT Integration in Classroom	1	
Intellectual Stimulation	.534**	1
N	.000	
	108	108

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

The results presented in Table 4.27 indicate a moderate positive correlation between intellectual stimulation and classroom ICT integration that reached statistical significance ($r(108) = 0.534$, $p < 0.001$). This result suggests that higher levels of intellectual stimulation are associated with increased integration of information and

communication technologies in classroom environments. The correlation coefficient represents a moderate effect size according to conventional interpretations, accounting for approximately 28.5% of shared variance between the variables. This relationship underscores the potential importance of intellectual stimulation as a factor influencing technology adoption practices in educational settings.

4.5.3 ANOVA Summary of Intellectual Stimulation

Regression analysis examined how well the predictor variable "intellectual stimulation" could predict ICT integration in classrooms. To interpret correlation strength, Cohen's (1988) scale was applied: 0.10-0.29 indicating weak correlation, 0.30-0.49 medium correlation, and 0.50-1.0 strong correlation. The analysis also determined the percentage of variance in the dependent variable explained by the independent variable. Results are presented in Table 4.28.

Table 4.28: ANOVA Summary for Intellectual Stimulation

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.534	0.285	0.278	1.37036

The R-squared value of 0.285 shown in Table 4.28 reveals that intellectual stimulation accounts for only 28.5% of the variance in ICT integration, indicating a weak predictive relationship. This means that the remaining 71.5% of variation in classroom ICT integration is attributable to varriables not shown in this ANOVA summary.

Table 4.29: Intellectual Stimulation Predictive Model

Model		Sum of Squares	Degrees of freedom	Mean Square	F	Sig.
1	**Regression**	79.206	1	79.206	42.178	0.00
	Residual	199.056	106	1.878		
	Total	278.262	107			

Dependent Variable: Integration of ICT

Predictors(constant) Intellectual stimulation

The linear relationship between intellectual stimulation and classroom ICT integration demonstrated statistical significance according to the regression Analysis of Variance results in Table 4.29. Statistical testing produced $F(1,106) = 42.178$ with $p < 0.001$, indicating that the observed significance value was substantially lower than the 0.001 threshold established for this analysis.These findings provide robust statistical evidence supporting the existence of a meaningful linear association between intellectual stimulation and teachers using innovative devices in classroom settings. The notable F-statistic indicates that the regression model explains a meaningful amount of variation in the dependent variable beyond what would be expected by random fluctuation.

Table 4.30: Predictive Values for Intellectual Stimulation components'

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	6.644	0.819		8.108	0.000
Intellectual Stimulation	0.536	0.083	0.534	6.494	0.000

The regression coefficients presented in Table 4.30 were employed to construct a univariate regression model examining the relationship between intellectual stimulation (explanatory variable) and classroom ICT integration (response variable). The developed model revealed that intellectual stimulation exerted a significant influence on classroom ICT integration, as confirmed by its P-value of 0.000, which is below the 0.001 significance threshold. The beta coefficient (β = 0.536) demonstrates that for each unit increase in intellectual stimulation, there is a corresponding 0.536 unit increase in classroom ICT integration. Consequently, the null hypothesis was rejected, establishing a statistically significant relationship between principals' intellectual stimulation and educators utilizing innovative devices in secondary schools within Kakamega County. The resulting univariate regression model was formulated where IT represents ICT integration and IS represents principals' intellectual stimulation, a dimension of transformational leadership. **IT**=6.644+0.536**IS**

This finding aligns with research by Pulumbart (2020) at Bulacan State University that examined how department heads' transformational leadership affected faculty research productivity with ICT integration. The study found that each unit increase in maintaining high performance expectations and offering intellectual stimulation corresponded to increases of .356 and .674 in faculty research efficiency, respectively. These results indicate that faculty members become more productive when supported by their department leaders. Furthermore, teachers develop greater trust in principals who express confidence in their capabilities.Nyaomitta, Namsonge, and Ahaya's (2019) in their study found out that their was a significant relation ship between intellectual stimulation and employees performance. When

given challenging assignments, encouraged to enhance their skills, and given feedback, employees' daily productivity increased. Transformational leaders foster creativity by presenting tasks to their employees that inspire them to seek new ways and solutions to problems (Yamamoto & Yamaguchi, 2019). Teachers gain confidence in their duties when administrators praise their innovative qualities.

Some research, however, have questioned whether transformational leadership has a major impact on the integration of ICT in teaching and learning. They contend that the leader's behavior on the four components of idealized influence, inspiration motivation, intellectual stimulation, and individual considerations operate separately. Kitur (2021), for example, discovered intellectual stimulation had no statistically significant link with KCSE results, on teachers performance. Hyde, and Kushwaha (2019) did a similar study on the effects of transformational leadership characteristics on employee performance in Malaysia. Only two components of transformational leadership, namely idealized influence and inspired motivation, were found to have a significant positive influence on employee performance. This implies that transformational leaders should empower teachers, communicate with them, and build trust by engaging and delegating duties, as well as encouraging them to be innovative and problem solvers.

H_{03}: There is no influence between Principals' Inspirational Motivation and ICT integration in teaching and learning in Public secondary schools in Kakamega County.

4.5.4 Correlation Analysis for Inspiration Motivation

A statistical investigation into the association between inspirational motivation (independent variable) and classroom ICT integration (dependent variable) was conducted using correlation analysis. The results are summarized in Table 4.31.

Table 4.31: Correlation Analysis: Principal's Inspirational Motivation and ICT Integration

	ICT Integration in Classroom	**Inspiration Motivation**
ICT Integration in Classroom	1	
Inspiration Motivation	.569**	1
N	.000	
	108	108

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

The relationship between inspirational motivation and ICT integration in the classroom was found to be moderately positive and statistically significant ($r(108) = 0.569$, $p<0.001$), as shown in Table 4.32.

4.6 Regression Analysis for Inspiration Motivation

A regression analysis was performed to determine how effectively the predictor variable "inspirational motivation" could predict "ICT integration in classroom" (the response variable). The study used Cohen's (1988) correlation scale where 0.10-0.29 indicates weak correlation, 0.30-0.49 indicates moderate correlation, and 0.50-1.0 indicates strong correlation. The analysis also calculated the percentage of variance in the dependent variable that could be explained by the independent variable. All findings are presented in Table 4.32.

Table 4.32: ANOVA for Inspiration Motivation

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.569	0.324	0.317	1.33240

Analysis of the summarized model of regression showed in Table 4.32 demonstrate a moderate relationship between the variables under study. The correlation coefficient (R = 0.569) indicates a moderate positive relationship between principals' inspirational motivation and ICT integration in teaching and learning, according to Cohen's (1988) scale. The coefficient of determination (R^2 = 0.324) demonstrates that 32.4% of the variance in classroom ICT integration can be directly attributed to principals' inspirational motivation. After adjusting for sample size and predictor variables (Adjusted R^2 = 0.317), the model maintains consistent explanatory power. The remaining 67.6% of variance in ICT integration is attributable to factors not captured within this specific model, suggesting opportunities for future research to identify these additional influential variables.

Table 4.33: Inspirational Motivation Predictive Model

Model		Sum of Squares	Degrees of freedom	Mean Square	F	Sig.
1	Regression	90.082	1	90.082	50.742	0.000
	Residual	188.180	106	1.775		
	Total	278.262	107			

Dependent Variable: Integration of ICT

Predictors(constant) Inspiration Motivation.

Table 4.33 Analysis of Variance (ANOVA) results reveal compelling evidence of a linear relationship between principals' inspirational motivation and classroom ICT integration. Statistical testing produced an F-statistic of 50.742 (df = 1, 106) with

significance at $p < 0.001$. With the observed p-value (0.000) substantially below the critical 0.001 threshold, the data provides robust statistical justification for rejecting the null hypothesis in favor of the alternative hypothesis. These findings confirm that principals' inspirational motivation has a statistically significant influence on ICT integration in public secondary schools in Kakamega County.

Table 4.34: Predictive Values for Inspiration Motivation components'

	Unstandardized Coefficients		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	6.620	0.752		8.807	0.000
Inspiration Motivation	0.297	0.042	0.569	7.123	0.000

Drawing from the regression coefficients presented in Table 4.34, a univariate regression model was developed examining the relationship between inspiration motivation (explanatory variable) and ICT integration in classroom (response variable). The model revealed that inspiration motivation had a statistically significant influence on ICT integration in classroom, with a P-value of 0.00, which falls below the 0.001 significance threshold. The beta coefficient ($\beta = 0.297$) indicates that for each unit increase in inspiration motivation, there is a corresponding 0.297 unit increase in ICT integration in classroom. The null hypothesis was rejected in these findings. The resulting univariate regression model used IT to represent ICT integration and IM to represent inspiration motivation.

IT=6.620+0.297**IM**

The findings of this study align with research by Maria-Luisa et al. (2023), who examined how transformational school principals support teachers in leveraging innovative devices. Their research revealed that technological leaders effectively inspired teachers to integrate technology in classrooms, enhancing student engagement in intellectually challenging learning activities. The presence of a transformational leader proved vital, as such leaders inspire innovation, encourage problem-solving, and motivate teachers. According to Maria-Luisa et al. (2023), the principal's greatest influence within the organization manifests through actively involving and empowering individuals while fostering a conducive ICT environment. This approach inherently motivates educators to prioritize their professional responsibilities.

Ying and Alias (2021) conducted a survey of 202 primary teachers in Malaysia to determine the degree of headteacher technological innovation and eductors enthusiasm to use technologies in education. The inquiry was of the quantitative kind. They identified a significant positive correlation between leadership in technology and educators' drive to implement ICT solutions in their instructional practices.They discovered that educators could more likely bring technology into the classroom when the headteacher gives a technology strategy plan and supports teachers' professional development to improve their ICT skills.Transformational leaders motivate their people by communicating, sharing a vision, and supporting their skill development.As potrayed by the results of this investigation, a great number of educators had job experience ranging from 5 to 13 years, making them more competitive when given a supportive working environment .Work experience

and motivation are important varriables in offering ICT solutions during instruction. Busro, (2019).

Kitur (2021) disagreed with the findings, claiming that leaders' inspirational motivation component had no statistically significant relationship with KCSE results. Other elements, when used, may impact the integration of ICT in teaching and learning. Transformational leaders empower educators, interact with them, develop trust by engaging and delegating responsibilities, as well as encouraging them to be innovative and problem solversHasija, Hyde, and Kushwaha (2019) performed a comparable study in Malaysia examining how transformational leadership characteristics affect employee performance. Their findings revealed that inspirational motivation from managers alone was insufficient to enhance employee productivity without the presence of other transformational leadership attributes.

H_{04}: There is no influence between Principals' Idealized influence and ICT integration in teaching and learning in public secondary schools in Kakamega county.

4.6.1 Correlation Analysis for Idealized Influence

To assess the potential relationship between principals' idealized influence (independent variable) and educators' incorporation of ICT in instruction (dependent variable), a correlation analysis was conducted. This statistical approach the investigation connections between these two variables to understand how principals' leadership behaviors might impact technology adoption in teaching and learning.

Table 4.35: Correlation Analysis : Priciplal's Idealized Influence and ICT Integration

	ICT Integration in Classroom	Idealized Influence
ICT Integration in Classroom	1	
Idealized Influence	.557**	1
N	.000	
	108	108

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

Drawing from the results shown in Table 4.35, principals' idealized influence demonstrates a moderate positive relationship with classroom ICT integration ($r(108) = 0.557$, $p<0.001$

4.6.2 Regression Analysis for Idealized Influence

Analysis of regression was conducted to determine whether the predictor factor idealized influence can be used to predict the response variable ICT integration in classroom. Cohen's (1988) effect size guidelines were applied to interpret the correlation strength: strong correlation (0.50 to 1.0), moderate correlation (0.30 to 0.49), and weak correlation (0.10 to 0.29). Additionally, the analysis calculated the percentage of variance in the dependent variable attributable to the independent variable. Table 4.36 presents these findings.

Table 4.36: ANOVA Summary for Idealized Influence

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.557	0.310	0.304	1.34539

Analysis of regression summarized results presented in Table 4.36 demonstrate a meaningful relationship between the predictor and response variables under examination. The correlation coefficient (R = 0.557) indicates a moderate positive relationship between principals' idealized influence approach and the integration of ICT in teaching and learning processes. The coefficient of determination (R^2 = 0.310) reveals that 31% of the variance in classroom ICT integration can be directly attributed to principals' idealized influence. This finding suggests that principal leadership style plays a substantial role in technology adoption within educational settings. Notably, the remaining 69% of variance in ICT integration is attributable to other factors not captured in this model, highlighting the complex and multifaceted nature of technology implementation in educational contexts and suggesting areas for further investigation.

Table 4.37: Idealized Influence Predictive Model

Model		**Sum of Squares**	**Degrees of freedom**	**Mean Square**	**F**	**Sig.**
1	**Regression**	86.393	1	86.393	47.729	0.000
	Residual	191.869	106	1.810		
	Total	278.262	107			

Dependent Variable: Integration of ICT

Predictors(constant) Idealized influence

Table 4.37 provide compelling statistical evidence of a significant linear relationship between principals' idealized influence (Predictor variable) and ICT integration in classroom settings (dependent variable) as demonstrated by the analysis of Variance (ANOVA).The analysis yielded a robust F-statistic of 47.729 with 1 and 106 degrees of freedom ($F(1,106) = 47.729$, $p < 0.001$). The obtained p-value of 0.000 is substantially below the stringent significance threshold of 0.001, indicating an

extremely low probability that this relationship occurred by chance. Based on these definitive statistical findings, the null hypothesis was conclusively rejected in favor of the alternative hypothesis, confirming that principals' idealized influence significantly predicts the level of ICT integration in educational environments. This underscores the critical role of leadership qualities in technological adoption within instructional settings..

Table 4.38: Predictive Values for Idealized Influence components'

	Unstandardized Coefficients		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	6.219	0.832		7.476	0.000
Idealized Influence	0.239	0.035	0.557	6.909	0.000

The regression coefficients presented in Table 4.38 provided the foundation for developing a precise univariate regression model examining the relationship between principals' idealized influence (explanatory variable) and ICT integration in classroom settings (response variable). Statistical analysis revealed that idealized influence exerts a significant impact on ICT integration, as evidenced by a p-value of 0.000, which falls well below the critical point of 0.001. The standardized beta coefficient ($\beta = 0.239$) quantifies this relationship, indicating that for each unit increase in principals' idealized influence, there is a corresponding 0.239 unit increase in classroom ICT integration, holding all other factors constant. This coefficient demonstrates the substantive practical significance of leadership style on technological adoption in educational contexts. Based on these empirical findings, a predictive univariate regression model was formulated, expressed as $IT = \beta_0 +$

0.239(II), where IT represents ICT integration and II represents idealized influence. This model provides a valuable tool for educational administrators seeking to enhance technology implementation through leadership development.

IT=6.219+0.239**II**

This research builds upon Gyansah's (2021) investigation into transformational leadership practices among school leaders and their impact on student academic performance across 19 public senior high schools in Ghana's Kumasi metropolitan area. While demonstrating statistical significance, the relationship between idealized influence and student academic achievement revealed a moderate correlation coefficient of 0.248. Transformational leaders who embody ethical principles position themselves at the vanguard of technological innovation in educational settings, thereby cultivating trust, respect, and commitment from both teachers and students toward effective classroom ICT integration.

In a related study, Kitur et al. (2019) examined the influence of transformatic principals on students' outcomes in national examinations in Kenya. Their analysis confirmed that principals' idealized influence significantly predicted KCSE performance. This suggests that diminished idealized leadership practices may compromise ICT integration efforts, as educators tend to respond more positively to supportive leadership models.

Muiia's (2018) research corroborates these findings, highlighting headteachers' behavioral attribute of idealized influence as a strong predictor of students' outcomes. The study attributes the high ratings of idealized influence to

headteachers who serve as effective role models by demonstrating commitment, employing consultative approaches, and establishing clear objectives.

These collective findings underscore the importance of investigating how principals' transformational leadership approaches specifically influence teachers' integration of ICT in instructional practices within Kakamega government sponsered high schools

4.6.3 Multiple Regression Analysis on Transformational Leadership and ICT Integration in Classroom

Table 4.39 provides the model summary for the regression analysis between the explanatory variables individualized consideration, intellectual stimulation, inspiration motivation and idealized influence and the response variable ICT integration in classroom.

Table 4.39: Multiple Regression Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.705	0.497	0.477	1.16574

The summarized ANOVA of varriance results indicate that the explanatory variables account for 49.7% of the variance in ICT integration in classrooms (R^2 = 0.497). This represents a substantial proportion of explained variance, suggesting that the model captures many attributes of transformational leaders influencing technology integration. However, 50.3% of the variance remains unexplained, indicating that additional variables not included in the current model may influence teachers' technology use in classroom settings. This moderately strong explanatory power is consistent with the complex, multifaceted nature of educational technology adoption, which is likely influenced by a combination of individual, institutional, and systemic factors beyond those measured in this study.

Table 4.40: ANOVA for the Multiple Regression Model

Model		Sum of Squares	Degrees of freedom	Mean Square	F	Sig.
1	**Regression**	138.290	4	34.572	25.441	0.000
	Residual	139.972	103	1.359		
	Total	278.262	107			

The regression Analysis of Variance (ANOVA) was conducted to definitively establish the existence of a linear relationship between the explanatory variables and ICT integration in classroom settings. The results presented in Table 4.38 provide compelling statistical evidence of a highly significant linear relationship between transformational leadership practices and classroom ICT integration. The analysis yielded a robust F-statistic of 25.441 with 4 and 103 degrees of freedom ($F(4, 103) = 25.441$, $p < 0.05$). The obtained p-value of 0.000 falls substantially below the conventional 0.05 significance threshold, indicating an extremely low probability that this relationship occurred by chance. This statistical finding provides strong empirical support for the theoretical framework linking leadership approaches to technological implementation in educational environments, and confirms that transformational leadership serves as a valid and reliable predictor of ICT integration in instructional practices.

Table 4.41: Coefficients of the Multiple Regression Model

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	VIF
	B	**Std. Error**	**Beta**			
(Constant)	2.893	0.909		3.181	0.002	
IC	0.119	0.047	0.245	2.561	0.012	1.847
IS	0.236	0.085	0.235	2.778	0.006	1.465
IM	0.104	0.049	0.200	2.129	0.036	1.806
II	0.088	0.039	0.206	2.256	0.026	1.709

The regression coefficients were analyzed to precisely quantify the impact of each transformational leadership dimension (intellectual stimulation, , individualized consideration , idealized influence and inspiration motivation) on ICT integration in classroom settings. As presented in Table 4.42, all four explanatory variables demonstrated statistically significant influence on classroom ICT integration ($p < 0.05$), establishing a clear causal relationship between leadership practices and technological implementation.

The multicollinearity assessment yielded Variance Inflation Factor (VIF) values below the critical threshold of 5 for all explanatory variables, confirming the statistical independence of the predictor variables and validating the structural integrity of the regression model. Based on these robust statistical findings, the following multiple regression equation was formulated:

IT = 2.893 + 0.119**IC** + 0.236**IS** + 0.104**IM** + 0.088**II**

In this empirical model, IT represents ICT integration in teaching and learning (dependent variable), while 2.893 constitutes the baseline intercept. The standardized coefficients for each transformational leadership dimension are: Individual Consideration (IC = 0.119), Intellectual Stimulation (IS = 0.236), Inspirational Motivation (IM = 0.104), and Idealized Influence (II = 0.088).

This mathematical model offers several key interpretations: The constant value (2.893) represents the foundational level of ICT integration that would exist independent of the measured leadership factors. Each coefficient quantifies the marginal contribution of its respective transformational leadership dimension to ICT integration, controlling for all other variables. Specifically, a one-unit increase in

Individual Consideration yields a 0.119 unit increase in ICT integration; Intellectual Stimulation demonstrates the most substantial impact with a 0.236 unit increase; Inspirational Motivation contributes a 0.104 unit increase; and Idealized Influence shows the smallest yet still significant positive effect with a 0.088 unit increase.

The comparative analysis of these coefficients reveals that while all four transformational leadership dimensions positively influence technological adoption in educational settings, Intellectual Stimulation emerges as the predominant driver of ICT integration, while Idealized Influence, though still significant, exerts the least relative impact among the four variables.

The findings of the current research collaborate with previous investigation which examined the four components of transformal leaders..

Muia (2018) investigated the influence of transformational principal on the contextual performance of teachers in schools in Kenya. The findings of the research revealed a significant favorable association between intellectual stimulation, individualized consideration, inspirational motivation, and idealized impact, and contextual performance. The findings suggest that there is a mutual relationship between the four factors, which collectively contribute to the improvement of contextual performance. Furthermore, the researchers posited that their findings possessed practical implications for the domain of educational administration. Transformational leadership is a leadership approach that enables executives within educational institutions to effectively inspire and encourage instructors. This is accomplished through several methods, including mentorship, coaching, active participation, and fostering the development of problem-solving abilities. Furthermore, leaders offer support by establishing a conducive atmosphere that

integrates information and communication technology (ICT) tools and resources. This phenomenon serves to increase the level of motivation among educators to include innovative devices into the teaching process and the acquisition of knowledge.

Gacicio (2022) investigated on school environment Teachers' self-efficacy,Transformational leadership practices, and application of technologies instructions in elimentary schools in Kenya. The variable of interest that was moderated in this study was the efficacy of teachers, the school environment, and the integration of information and communication technology (ICT). The topic of transformational leadership encompassed an examination of all four fundamental characteristics associated with this leadership style. The study found transformational leaderhip had significant effects on ICT intergration (β=0.207, t=3.623, p=.000<.05). Additionally,the results established that the school environment significantly affects ICT integration (β=0.282, t=4.993, p=.000<.05). Additionally, it was discovered that teacher self-efficacy significantly affects ICT integration in teaching and learning (β=.534, t=10.616, p=.000<.05).The Principal's behaviour determines the successful Integration of ICT in schools; transformational leaders encourage their team by encouraging them to take on difficult assignments by providing an enabled ICT environment, which may lead to effective ICT integration.

Some research, however, have questioned whether transformational leadership has a major impact on the integration of ICT in teaching and learning. They contend that the leader's behavior on the four components (4 "I"s) operate separately.

Kitur (2021), for example, discovered that idealized influence and individual concern had a substantial influence on performance, although inspiring motivation and intellectual stimulation had no statistically significant link with KCSE results. This results imply that transformational leadership needs to be stregthened for effective ICT intergration in school.Transformational leaders are expected to enhance the empowerment of teachers through effective communication, trust-building strategies, and delegation of responsibilities. Additionally, they should foster an environment that encourages teachers to be inventive and develop problem-solving skills, thereby gaining their trust and support. Teachers' willingness to integrate ICT in teaching and learning is contingent upon their confidence in the leader.

Muia (2018) investigated principals' transformative management techniques and students outcomes in national examinations in Machakos .The results discovered idealized, Intellectual stimulation,inspirational motivation, and individual consideration elements potrayed by transformative leader had a significant and positive impact on KCSE performance. However, intellectual stimulation was the most effective transformational leadership practice predictor for KCSE exams. This analysis confirms that the principals' implementation of certain aspects of transformational leadership was inadequate and need improvement. Transformational principals support teachers by assigning challenging tasks, fostering receptiveness to novel concepts, and enhancing their proficiency in information and communication technology (ICT) to ensure their successful utilization of ICT in the classroom.

Kariuki (2018) carried a study on Teachers' performance and Principal'sTransformational Practices in Kenyan high schools Nyandarua . The study looked at how the four elements of innovative leaders, which are inspirational motivation, individual consideration, intellectual stimulation, and idealized influence, affected instructors' performance. The researcher discovered that each of the four dimensions had a great influence on teachers' productivity. Nevertheless the researcher established that principals scored the lowest in individualized consideration. The study came to the conclusion that teacher performance was critical to school performance and that principals were crucial in helping teachers perform better, particularly by setting an example for others to follow. The study suggested that principals should actively engage in challenging instructors on the intergration of ICT in classroom.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter is structured in two main parts . The first part highlights the study objectives and hypothesis testing. The second section presents the research findings and their interpretations as they relate to the study objectives, followed by a comprehensive summary of the investigation's results and subsequent recommendations. The chapter concludes by offering evidence-based suggestions for policy implementation and practical applications, as well as proposing directions for future research based on the study's outcomes.

The investigator aimed to determine ways in which principals' who exhibited transformational traits influenced intergration of innovative devices in government funded high schools in Kakamega as well as to give Practical recommendations for improving teachers' use of ICT in the classroom.

The investigator examined five objectives, primarily to establish the extent to which principals' individual consideration of staff skill development, intellectual stimulation, inspirational motivation, and idealized influence, as well as their overall transformational leadership approaches, influence on ICT integration in teaching and learning in public high schools in Kakamega County.

The research utilized a mixed methods design rooted on sequential explanatory approach. The research participants included 62 school administrators from public secondary schools in Kakamega County, 186 educators, and 372 Form 3learners. Comprehensive qualitative and quantitative data were gathered through interviews, surveys, and other data gathering tools. The Mixed methods design ensured data

dependability while providing comprehensive insight into the connections between transformational leadership and the incorporation of ICT in educational processes throughout Kakamega county. Data analysis employed and inferential statistics (regression analysis and correlation) and both descriptive statistics (standard deveations, mean) to accomplish the study's goals and test its hypotheses. Furthermore, the qualitative information was systematically coded and organized into thematic categories to support analysis addressing the research objectives.The chapter concludes by highlighting the investigations results ,recommendations and conclusions.

5.2 Summary of Study Findings

Objective one which assessed how principals' individualized consideration of staff professional development impacts ICT integration revealed that a great number of administrators asserted to have helped educators by taking into account their distinctive demands while utilizing technological devices during instructions by ranking all the elements on individual consideration. Educators , on the other hand, concurred that having access to technologies makes it simpler for them to plan lessons, assign homework, and enter test results. They also acknowledged that their respective principals had provided them with some support in using and operating ICT equipment with the help of school technicians. They also had access to Wi-Fi, but additional questioning revealed that the connection was weak and frequently interrupted due to power outages and unpredictably bad weather. The use of computers by students at the designated areas was also noted.

The qualitative study showed that Kakamega's administrators were conscious of teachers' needs, particularly those of those who use ICT in the classroom, and they

were eager to help. To ensure that all teachers are supported through school development, greater effort must be put forward.

Inferential statistical analysis demonstrated a strong positive correlation between principals who addressed teachers' distinctive needs and enhanced ICT utilization in teaching activities ($r(108) = 0.584$, $p<0.001$). The ANOVA summary conclusively established that principals' individualized consideration practices accounted for 34.1% of the variance in teachers' ICT implementation (Adjusted $R^2 = 0.334$), while the remaining 65.9% was attributed to factors outside the current model's parameters. These statistically significant findings provided compelling evidence to accept the alternative hypothesis and definitively reject the null hypothesis, confirming the substantial impact of individualized leadership attention on technological adoption in educational settings.

Objective two, which examined how principals' intellectual stimulation of educators influences ICT integration in teaching, revealed that the majority of administrators actively supported their teaching staff. These principals reported fostering teacher creativity and demonstrating confidence in educators' capabilities to effectively implement ICT in instructional processes, as evidenced by consistently positive ratings across all intellectual stimulation behavior components.Teachers on the other hand acknowledged that their respective principals had encouraged them to think critically about the added advantages of utilizing technological devices during instructions. They also agreed to have been consulted by their principals regarding the hardware and software that should be used in the classroom. These findings showed that whereas principals evaluated this behavior as high, teachers assessed it as moderate.

Intellectual stimulation and the intergration of ICT in teaching and learning were found to have a significant positive relationship using inferential statistics on correlation (r (108) = 0.534, p<0.001). The R-squared value of 0.285 between the principal's transformational component of intellectual stimulation and the integration of ICT in teaching and learning indicates that 28.5% of the variability in ICT integration can be explained by variations in intellectual stimulation.

The third objective, which examined the extent to which principals' inspirational motivation influences ICT integration in instruction, revealed notable findings. Principals in Kakamega County consistently endorsed their leadership behavior in encouraging educators to utilize innovative technological devices in the classroom. These administrators rated themselves highly on inspirational motivation measures, whereas educators assessed this leadership element more moderately, indicating a perception gap between leadership self-evaluation and teacher experience regarding technology-related motivation.The statements were taken into account in terms of the motivational inspiration component. Our school has a clear vision for ICT. each program covered by the ICT budget is decided by the principal and the teachers, power is always available. There is a thorough overview of the current policy available, and it takes me less time to pick up the ICT supplies from the principal's office. Lastly, the school as a whole offers efficient ICT teaching methods, which further inspires teachers by highlighting a change in viewpoint on the use of ICT.

The qualitative research revealed that Kakamega's administration encouraged and were eager to support their teachers as they used ICT in the classroom. More work needs to be made into making sure that teachers completely feel motivated by their respective principals.

Inferential statistical analysis revealed a significant positive correlation between principals who inspired their teachers and increased ICT utilization in their respective schools, as demonstrated by hypothesis testing results ($r(108) = 0.569$, $p<0.001$). The regression model fit confirmed this relationship, leading to accepting the alternative hypothesis and rejecting null hypothesis: there exists a significant relationship between the principal's transformational leadership component of inspirational motivation and ICT integration in teaching activities

The fourth objective, which determined the degree to which principals' idealized influence affects ICT integration in instruction, established that principals in Kakamega County actively demonstrated technology use in their own practices. These administrators served as positive role models by personally utilizing innovative devices in the classroom, thereby setting a practical example for both educators and learners to emulate.They rated themselves on the assertions made as compared to the teachers' mixed reactions to their idealistic influence-peddling behavior. In terms of the idealized component, the statements were taken into consideration. During her classes, the principal creates slides and presents her work. The principal demonstrates collaborative learning with students and faculty. The ramifications of the research drew mixed responses. Teachers who believed principals managed the ethical integration of ICT said there was room for improvement in principals' ICT integration skills. It was necessary, in the opinion of the quality assurance officer, to actively dissuade individuals from referring to ICT as something else.

The use of ICT and sustaining ethical conducts in regard to utilizing innovative devices during instructions were praised by Kakamega's principals as being positive

examples for teachers and students. In comparison to teachers, who had mixed reactions to their words, they gave themselves better scores. Regarding the idealized component, the statements were taken into account. When teaching, the principal prepares slides on which she will present her work. The principal demonstrates collaborative learning with students and the teaching staff. There were differing opinions on the results' consequences. The ability of principals to integrate ICT needs to be strengthened, according to teachers who believed that principals handled it in an ethical manner. In the opinion of the quality assurance officer, it is crucial to actively prevent individuals from referring to ICT as anything other than what it is.

Inferential statistical correlation analysis revealed a significant positive relationship between idealized influence and the integration of ICT in instructions ($r(108) = 0.557$, $p<0.001$). The coefficient of determination (R-squared value of 0.310) indicated that principals' idealized influence explained 31% of the variance in ICT integration, while the remaining 69% was attributed to variables not captured in the current model. These findings provided sufficient statistical evidence for schools in Kakamega County to accept the alternative hypothesis—that there exists a significant relationship between principals' idealized influence practices and innovative devices utilization in instructional processes—while decisively rejecting the null hypothesis.

The fifth objective comprehensively integrated all four transformational leadership components, with robust regression statistics demonstrating that principals in Kakamega schools exhibited transformational leadership characteristics that systematically influenced ICT integration in classroom delivery. The ANOVA results conclusively established that principals' transformational leadership

components accounted for a substantial 49.7% of the variance in ICT integration in instruction ($R^2 = 0.497$). The remaining 50.3% of unexplained variance indicates potential additional factors beyond the scope of the current model that may influence technology adoption in educational settings. Multiple regression coefficient analysis revealed that all four transformational leadership variables exerted statistically significant influence on classroom ICT integration ($p < 0.05$), firmly establishing a causal relationship between specific leadership practices and technological implementation outcomes. Based on this compelling statistical evidence, the study definitively accepted the alternative hypothesis—that a significant relationship exists between principals' transformational leadership approaches and ICT integration in teaching activities in secondary schools throughout Kakamega County—while categorically rejecting the null hypothesis

5.3 Conclusion

Following thorough data examination, this research determines that educational administrators in Kakamega County routinely exhibit all dimensions of transformational leadership practices-including idealized influence, individualized consideration, intellectual stimulation, and inspirational motivation.

The statistical evidence establishes a significant and meaningful relationship between these leadership dimensions and technology adoption in classroom settings. The study further established that these four behavioral elements are interrelated and function collaboratively to facilitate effective incorporation of ICT into teaching processes. Principals who embodied these transformational qualities created educational environments more conducive to technological innovation, with

quantifiable impacts on instructional technology implementation across the county's secondary schools.

5.3.1 Principal's Individual Consideration Influence on ICT Intergration in Teaching and Learning

Based on the statistical evidence, individual consideration ranked highest among the transformational leadership qualities (surpassing intellectual stimulation, inspirational motivation, and idealized influence).

Principals offered mentorship and encouragement to educators to foster their professional growth in classroom ICT implementation. Teachers acknowledged and valued this supportive approach.

Kakamega school principals exhibited notable responsiveness to educators distictive needs in the region. They provided assistance to those experiencing technical challenges with classroom ICT usage.

Internal training sessions conducted by school technicians were available to teachers facing technical difficulties in the classroom. The principal's involvement is evident when teachers receive technical support, as it's unlikely they would access such assistance without the principal's active engagement.

Teachers reported that their needs were considered when wifi was provided, despite connectivity being inconsistent due to weather conditions.

The research determined a statistically significant strong correlation between individual consideration and ICT integration in instruction. Therefore, the null hypothesis was rejected among schools in Kakamega County.

5.3.2 Principal's Inspiration Motivation Influence on ICT Intergration in Teaching and Learning

It was discovered that the principal inspires teachers by emphasizing behavior modification about the use of ICT and demonstrates effective ICT-based teaching strategies that are widely used throughout the school. This relates to inspiration motivation; in order to successfully integrate ICT teachers, it is necessary to offer encouragement and support by way of appropriate infrastructure, in-service training sessions, and refresher training sessions to provide them with knowledge and skills,

Principals in Kakamega demonstrated that they have a shared ICT vision.This was confirmed by the documentation provided, although a great number of educators responded neutral when asked about the clarity of the ICT vision. This shows that there may be opportunities to improve communication and comprehension of the school's ICT vision among the teaching staff.

However, the practice of whether instructors take less time choosing ICT resources from the principal's office earned the lowest mean score. The results are interpreted to mean that accessing ICT tools by teachers takes a long time. Accessing projectors required going via the Director of Studies or the secretary for safety reasons, according to the Document Analysis and Observation Checklists. Due to the time lost throughout this process, teachers may get demotivated and their commitment to incorporating ICT technologies into classroom instruction may suffer.

The research determined that a statistically significant positive correlation exists between principals' inspirational motivation influence and ICT integration in teaching and learning, though this relationship was relatively weak. As a result, the nullhypothesiswasrejected.

5.3.3 Principal's Intellectual Stimulation Influence on ICT Intergration in Teaching and Learning

Administrators at Kakamega public secondary schools used behavior on intellectual stimulation to a moderate level.These findings indicate that instructors believed their principals had reservations about their ICT abilities. Trust is essential for effective school leadership. The school administrator can help teachers establish a culture of trust by providing a pleasant work environment, which will motivate them to tackle challenges creatively and innovatively. A lack of trust in teachers' abilities may influence the principal's decisions about ICT usage in the learning environment.

Principals in Kakamega endorsed this behavior at a moderate level; principals scored highly on the aspect of consulting teachers on the ICT budget, whereas teachers felt that they were not fully consulted on the ICT budget; this contradicts what was found in document analysis, which demonstrated that facilitators participated in ICT-related conversations, as evidenced by staff minutes.

The findings revealed that teachers were supported and encouraged to improve their ICT practices in the classroom, since many teachers used computers in the staffroom and library for class preparation.

The study concluded there was a statistically significant postive but weak relationship between Principal's intellectual stimulation inflence and intergration of ICT in teaching and learning.Therefore the Null hypothesis of Principal's intellectual stimulation not having influence of ICT intergration was refuted.

The majority of replies indicate favorable opinions about principals' engagement in decision-making processes and their role in pushing teachers to consider the benefits of ICT, particularly in light of student performance.

5.3.4 Principal's Idealized Consideration Influence on ICT intergration in Teaching and Learning

The research results revealed that Principal's idealized practice in government sponsered schools in Kakamega was low ,and ought to be stregthened

Majority of the teachers were neutral on the characteristics of the principal exhibiting ethical values and using ICT tools in the classroom.

Principals are thought of as role models to walk the talk; they were observed to exercise idealized influence, but sparingly. The low score of principals neglecting to use ICT during teaching and learning might have a negative impact because teachers are drawn to leaders who talk and act. If transformative leaders are not the program implementers at the forefront, teachers may not be able to use the instrument effectively

Other challenges to ICT integration also existed. It was confirmed by the quality assurance staff in multiple schools that teachers and principals had reported theft of the ICT equipment. Since some instructors believed computer studies should be an elective and teachers of other courses shouldn't be required to use ICT in their classes, integrating the mindsets of the teachers proved challenging. Unpredictable weather was another difficulty, especially in the evening classes, where it disrupted study. Some individuals used terminology like "Technosafi" and claimed that using ICT required expertise. This way of thinking is likely to influence the manner in

which ICT is incorporated in the learning setting .The study discovered a statistically significant but weak correlation between the Principal's idealized influence and the integration of ICT in teaching and learning.Consequently, the null hypothesis was refuted.

5.4 Recommendations of the Study

This section includes suggestions regarding policies that might be of importance to the Education Ministry, School Boards and Principals of schools, the suggestions are based on the results of the investigation, in addittion to proposals for future researchers.

5.4.1 Recommendations for Ministry of Education (MOE)

i. The study found that the principals' transformative leadership had a substantial impact on the integration of ICT; there fore, it recommended that the Ministry of Education strengthen its capacity-building program by ensuring that principals have all of the transformational leadership attributes required to be effective in executing educational programs.

ii. The M.OE should strengthen its oversight role through county-level officers by increasing ICT budget allocations at all levels. These will allow the county Quality Officer to ensure that the institutions' amenities are adequate and appropriately used.

iii. The M.O.E in collaboration with the Kenya Institute of Curriculum Development Institute and teacher training institutes, should train instructors on how to integrate cutting-edge technology in their teaching methods.

iv. The Board of Management through Ministry of Education,should assist schools by reaching out to various stakeholders for assistance with ICT

infrastructure and payment of technical professionals for effective ICT integration in schools.

5.4.2 Recommendations For Principals' Transformational Leadership Approaches

Drawing from the investigation results on objective one, that Individual consideration influences integration of ICT in teaching and learning, the study recommends that:"

i) School Managers must provide mentorship and encouragement to teachers in order to improve their professional development in utilizing technologies during instructions.

ii) School principals must pay attention to teachers' needs, such as giving technical assistance if a teacher faces technical difficulties when using innovative devices .

iii) To promote and encourage internal training programs for ICT users.

iv) Ensuring adequacy of ICT resources and reliable Wi-Fi for successful instructional delivery.

In relations to the research findings on objective two that Principal's intellectual stimulation influence on ICT in instructions , the investigation proposes that:

i) Principals are expected to trust the abilities of teachers by assigning them more challenging tasks to enhance creativity and innovativeness in technology use.

ii) Administrators should engage and consult educators on ICT budgets as they are the main users of the tools in the classroom.

iii) principal should encourage and guide teachers to improve their ICT practices in the classroom,

iv) Principal should involve teachers in decision-making process for effectve intergration of ICT in teaching and learning.

Drawing from the findings on objecive three that,Principal's inspirational Motivation influence on intergration of ICT in teaching and learning ,the study recommends:

i) School Managers should encourage and support instructors' use of innovative devices during instructions.

ii) Principals should express and communicate the ICT vision to teachers and students so that they understand how to integrate ICT in the classroom.

iii) Principals should involve teachers in developing policies for the use of ICT in their possession.

iv) The administrator should encourage instructors to employ new educational methods.

v) Teachers should be on the cutting edge of technological development, adapting to it while also advancing their own intellectual growth or ICT competencies. As a result, their teaching abilities will increase. They must be proactive in acquiring new skills and knowledge rather than relying on governments to organize training for them.

On the findings on objective four that Principals idealized approach influences integration of ICT in teaching a learning, the researcher propose that :

i) Using information and communication technology in schools is a significant endeavor, and principals should be aware of this. They should lead by example by integrating ICT into their course content. Teachers are drawn to the role

models they emulate.As a result, principals in Kakamega should be encouraged to develop all facets of transformational leadership in order to create an ICT-friendly workplace.

ii) The principal should demonstrate collaborative learning with students and faculty.

iii) Principals should demonstrate ethical standards in relation to intergration of ICT in teaching and learning .

5.5 Recommendations for Future Research

The study proposes the subsequent recommendations for future researchers.

i) The study advises that the same issue be undertaken in other counties other than Kakamega county to gain a perspective on Principals'Transformational Leadership Influence on ICT Integration in Teaching and Learning in Public SecondarySchools.

ii) Research should be conducted to determine Teachers' perception of Principals transformational leadership practices and their influence on utilization of ICT in classroom instructions in public secondary schools.

iii) The present study is a mixed method study rooted in explanatory design. Future research should conduct a comparative study on the influence of various leadership styles, not just transformational leadership, on ICT integration in teaching and learning. This would establish which leadership approach most effectively promotes technology adoption across diverse school contexts and could identify situation-specific leadership practices that maximize ICT implementation success

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APPENDICES

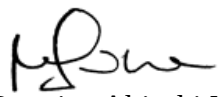
APPENDIX I: INTRODUCTORY LETTER OF RESEARCH

Dear Sir/ Madam,

RE: THESIS IN ACADEMIC RESEARCH

My name is Beatrice Abisaki Mbune, and I am a doctoral (Ph.D.) candidate studying Education Management at the university of Kenyatta. I would like to do research named "Principal's transformational leadership influence on the integration of technologies in teaching and learning in Kenyan public high schools Kakamega county. A questionnaire will be used to obtain relevant information.This material must be used by the investigator to respond to the investigations objectives. Please allow me to collect data on this important subject, mostly for scholarly purposes. As a result, I shall keep the information gathered in tight confidence and follow the ethical standards of maintaining confidentiality. I would much appreciate your approval.

Yours Sincerely,



Beatrice Abisaki Mbune

APPENDIX II: LETTER OF CONSENT FOR THE QUESTIONNAIRE

KENYATTA UNIVERSITY

Department of Educational Management, Policy and Curriculum Studies

P.O. Box 43844-0100

Nairobi, Kenya

TO:

_____

RE: Research Participation Request – Principals's Transformational leadership on ICT Integration in Public Secondary Schools in Kakamega County.

I am Beatrice Abisaki Mbune, a doctoral candidate at Kenyatta University pursuing a Doctor of Philosophy (PhD) in Education Management. I am conducting research on "The Influence of Principals' Transformational Leadership on the Integration of Information Communication Technology in Teaching and Learning in Public Secondary Schools in Kakamega County, Kenya."

The purpose of this letter is to request your participation in this academic research through completing a questionnaire. Your insights and opinions on this subject matter are invaluable to this study. I assure you that all information provided will be treated with strict confidentiality and used solely for academic purposes.

Your cooperation and contribution to this research will be highly appreciated.

Thank you for your time and consideration.

Yours Faithfully,

Beatrice Abisaki Mbune

PhD Candidate

Department of Educational Management, Policy and Curriculum Studies

Kenyatta University

APPENDIX III: LETTER OF CONSENT FOR AN INTERVIEW

TO;

_____

I am Beatrice Abisaki Mbune, a postgraduate student at Kenyatta University, School of Education and long life learning, Department of Education Planning, Policy and Curriculum Studies. I am conducting research on Principals' Transformational Leadership Approaches in the Integration of Information Communication Technology (ICT) in Public Secondary Schools in Kakamega County.

I am writing to request your consent to participate in an interview for my study. The interview will take approximately one hour, and I am flexible to accommodate your preferred time. I assure you that all information shared will be kept strictly confidential and will be used solely for academic purposes. The interview will be recorded and the recording will be deleted immediately after transcription.

If you have any questions or concerns about your rights as a research participant, you may contact the Department of Education Policy, Planning and Curriculum Studies at Kenyatta University in Nairobi, Kenya. P. O. Box 43844-0100.

CONSENT STATEMENT:

I have read and understood the above information regarding this research study on Principals' Transformational Leadership in the Integration of Information Communication Technology in Teaching and Learning in Public Secondary Schools in Kakamega County, Kenya. I voluntarily agree to participate in this study.

Name: _____

Date: _____

Signature: _____

APPENDIX IV: STUDENT ASSENT LETTER

Dear Student,

_____

My name is Beatrice Abisaki Mbune, a PhD student at Kenyatta University. I am conducting research on Principals' Transformational Leadership and ICT Integration in Teaching and Learning in Public Secondary Schools in Kakamega County. My research supervisors are Dr. Samuel Waweru and Prof. Felicita Njuguna of Kenyatta University.

I am requesting your participation in an interview to gain insights into this topic. Your school Principal has granted permission for this study. If you feel uncomfortable, you may consult your parents through your Principal. All information shared will be kept confidential, and you will not be required to write your name to maintain anonymity.

The interview will take approximately one hour. You are free to ask for clarification if you don't understand any words or terms used. The interview will be recorded and deleted immediately after transcription.

If you are willing to participate, please sign the attached form below. You are free to withdraw from the study at any time without any consequences.

Thank you for your consideration.

Yours faithfully,

Beatrice Abisaki Mbune

WRITTEN ASSENT FORM

I have read and understood this letter requesting my participation in a study at my school. I understand the information about the study and what I will be asked to do. I willingly agree to participate in this study.

Student's Name: _____

Student's Signature: _____

Date: _____

Witness's Name: _____

Witness's Signature: _____

Date: _____

Parent/Guardian's Name: _____

Parent/Guardian's Signature: _____

Date: _____

APPENDIX V: RESEARCH STUDY QUESTIONNAIRE

I, Beatrice Abisaki Mbune, a postgraduate student at Kenyatta University pursuing a Doctor of Philosophy in Education Management, propose to conduct research on Principals' Transformational Leadership and its influence on the Integration of Information Communication Technology in teaching and learning in public secondary schools in Kakamega County, Kenya. This investigation is primarily for academic purposes. Your cooperation will be highly appreciated in filling out the questionnaire. The questionnaire seeks your opinions on the subject at hand. Information provided will be handled in total confidence.

Thank you,

Yours Faithfully

Beatrice Abisaki Mbune.

QUESTIONNAIRE FOR PRINCIPALS

SECTION A

Demographic Information

Kindly choose the relevant answer

GENDER	Masculine Feminine
AGE	25-34 35- 44 45- 54 55- and above
LEVEL OF EDUCATION	DIPLOMA DEGREE MASTERS Ph.D.
WORK EXPERIENCE AS A PRINCIPAL	LESS THEN 5 YEARS BETWEEN 5-15YEARS MORE THAN 15YRS

SECTION B

Transformation leadership influence on the integration of ICT in the learning environment, using Linkert scale, rate whether you Agree or disagree with the following descriptions:

Scale:

Strongly Disagree(SD) Disagree (D), Neutral (N), Agree (A),Strongly Agree(SA)

Statement	**SD**	**D**	**N**	**A**	**SA**
INDIVIDUAL CONSIDERATION COMPONENT					
I provide mentorship and coaching to teachers regarding technology implementation in their instructional practices.					
I actively encourage and support teachers' professional development to enhance their teaching effectiveness.					
I ensure teachers have access to an adequate number of computers for instructional purposes.					
I recognize individual teacher needs and make myself available for consultation and support to improve learning outcomes.					
The school employs an ICT technician who provides assistance when teachers face technological challenges.					
The school offers reliable wireless internet connectivity.					
INTELLECTUAL STIMULATION					
Provide access to Wi-Fi in school without any restrictions.					
I trust teachers' abilities when they apply their innovative skills to the learner's achievement.					

Statement	SD	D	N	A	SA
Works towards consensus with the educators on ICT resources that must be prioritized in the school budget.					
Encourage teachers to review their practices in Information Technology usage.					
INSPIRATION MOTIVATION					
The school has a clear vision for ICT.					
We have a flexible school ICT policy in Place that enables teachers to access the ICT tools for teaching.					
We have created an enabling ICT environment for both teachers and students.					
We share good practices of teaching with ICT in our staff meetings.					
IDEALISED INFLUENCE					
Use ICT tools during my lessons and demonstrate exemplary management skills for learners' success.					
Communicate to teachers regularly and encourage them to embrace teamwork					
Handle matters concerning ICT ethically by promoting moral values in the learning environment.					
Encourage instructors to share their ICT expertise through sharing of knowledge.					

I appreciate your assistance and co-operating with me.

QUESTIONNAIRE FOR TEACHERS

Sections A: Demographic Background

Please complete the questionnaire by choosing relevant answers if required.

1. Gender: Masculine ( ) Feminine ( )

2. Please provide your category of age.

   Under 30 ( ) 31- 40 ( )

   41- 50 ( ) Above 50 ( )

3. Indicate your educational level as categorized below.

   Ph.D. ( ) Masters ( ) Degree ( )

   Diploma ( )

4. Please designate the period you have been working in this school .less than 5 yrs.

   Between 5-15 yrs ( ) More than 15 yrs. ( )

5. Which one of the following describes the category of your school? . National ( )

   Extra- County ( ) County ( )

Section B: Individualized Consideration

This section seeks to establish a transformational principal's approach of Individual consideration on integrating technology in a government-funded high school learning environment in Kakamega County. Using a five-point scale, indicate your affirmation of the given descriptions Strongly Disagree(SD) Disagree (D), Neutral (N), Agree (A),Strongly Agree(SA)

NO	ITEM	SD	D	N	A	SA
1.	Training is provided for system operations.					
2.	The school Principal enables us to attend ICT training whenver the opportunity arises.					
3.	Technical support staff assist teachers with educational technology when needed.					
4.	The school provides sufficient internet connectivity.					
5.	My computer has active antivirus software installed.					
6.	I utilize my computer for lesson preparation, exam creation, and recording student assessment					

INTELLECTUAL STIMULATION

This section seeks to establish intellectual stimulation of transformational Principals' influence on the integration of ICT in government-funded high schools in Kakamega County. Using a five-point scale, indicate your level of affirmation of the given descriptions. Strongly Disagree(SD) Disagree (D), Neutral (N), Agree (A),Strongly Agree(SA)

NO	ITEM	SD	D	N	A	SA
1.	I access the internet promptly at school without restrictions					
2.	The school principal has trust in my abilities and supports ICT usage in the in-classroom instructions					
3.	Teachers' are consulted about type of hardware and software needed for teaching by the school principal.					
4.	The principal involves teachers in policy formulation and strategic planning to improve the quality of classroom delivery in school.					
5.	Teachers are stimulated to reflect upon the value of using ICT because of students' success.					

INSPIRATION MOTIVATION

This section explores how the inspiration and motivation of transformational principals' leadership approach affect ICT integration in a learning environment . Using a five-point scale, indicate your level of affirmation of the given descriptions. Strongly Disagree(SD) Disagree (D), Neutral (N), Agree (A),Strongly Agree(SA)

NO	ITEM	SD	D	N	A	SA
1.	There exists a clear vision of ICT in Our school					
2.	Works with teachers to arrive at the consensus on which initiative can be implemented in the ICT Budget					
3.	There is uninterrupted power supply within the school premises					
4.	There is, a clear description of the policy in place					
5.	I take less time in picking the ICT materials from the Office of the Principal					
6.	Motivates teachers by focusing on attitude change on the use of ICT					
7.	Good practices of teaching with ICT are shared widely across the school					

IDEALIZED INFLUENCE

This part seeks to establish how idealized aspect of transformational principals' on the integration of ICT devices in school setting. Using a five-point scale, indicate your level of affirmation of the given descriptions Strongly Disagree(SD) Disagree (D), Neutral (N), Agree (A),Strongly Agree(SA)

NO	ITEM	SD	D	N	A	SA
1.	There exists a clear vision of ICT in Our school					
2.	Principal handles our requests concerning ICT tools ethically.					
3.	The principal develops slides and projects her work during her lessons.					
4.	The Principal provides a model of collaborative learning with students and teaching staff.					

Teachers' competencies in using information and communication technologies:

Using the information on the table, rate the teachers' skills in computer usage. Using a five-point scale, indicate your affirmation of the given descriptions, No Expertise (NE), Fair (F), Good (G),Very good (VG) , Excellent (EC),

Tick "√" that applies.

		NE	F	G	VG	EC
1	I cannot use the computer at all					
2	I can use office applications (word processor, spreadsheet, PowerPoint)					
3	I am comfortable surfing the internet					
4	I am good at using the computer and its software in doing research and downloading files.					
5	I use my computer to write emails.					

Considering the statements below show how often you utilize ICT in your school. Tick "√" that which applies.

No	Purpose	More often	Often	Rarely	Never
1	Teaching specific subjects				
2	Teaching computer skills				
3	Communicating with stakeholders				
4	Keeping Administrative records				
5	Preparing lesson plans				
6	For presentations				
7	For research purposes.				

Other leadership practices

1. When are teachers involved to discussing matters concerning ICT as a supporting tool for learners Outcome
2. How does the principal engage the teachers in matters concerning use in the classroom?
3. Do you encounter any challenges concerning how and when to use the ICT equipment?
4. Has ICT usage in class helped to improve the Mean grade of the subject you teach? Support your answer
5. Do you encounter any difficulties with how the principal handles you concerning ICT?
6. What is your opinion about the support you get from your principal on ICT usage in classroom delivery?

Thanks for your cooperation.

STUDENTS' QUESTIONNAIRE

This questionnaire is to help collect raw data on ICT integration in the classroom. Please tick in the provided space and explain where necessary. Your name is not required on this tool.

Part A: Participants'Background Data.

1. Category of the School National ( ) Extra county ( )

   County ( ) Sub County ( )

2. Gender: Male ( ) Female ( )

3. In which form are you?

   One ( ) Two ( )

   Three ( ) Four ( )

SECTION B

4. Do you have any computers in your school?

   Yes ( ) No ( )

5. Are you competent in using a computer?

   Yes ( ) No ( )

6. If your answer is (yes), where did you get the expertise in computers?

   The School ( ) Home ( )

   Friend ( ) media ( )

7. Do teachers use ICT tools in the classroom?

   Yes ( ) No ( )

8. If your reason is NO, give reasons

9. Which subjects do your teachers use ICT in?

Kindly rate on a scale of 1-5 the degree on how these assertions describe ICT tools usage by your teachers in the classroom not used (NU), Less used (LU), Rarely used (RU), Moderately used , mostly used.

No	**DEVICES**	**Not used**	**Less used**	**Rarely used**	**Moderately used**	**Mostly used**
1	CDS					
2	DVD'S					
3	YOU-TUBE					
4	SMART BOARDS					
5	PROJECTORS					
6	COMPUTERS					
7	RADIO					
8	INTERNET					

How frequently do you access ICT resources in the identified locations?

		Very frequent	**Frequent**	**Twice a week**	**Sometimes**	**Never at all**
1	Library					
2	Computer Lab					
3	Classroom					
4	Other(specify)					

In the following statements, tick "√" appropriately where you agree or disagree.

KEY:,SD- Strongly Disagree ,D-Disagree ,N-Neutral ,A-Agree ,SA- Strongly Agree

No	Particulars	SD	D	N	A	SA
1.	I find learning interesting when ICT tools are used during classroom instructions.					
2.	ICT compels me to take part in classroom activities.					
3.	ICT supports me in retrieving shared information and boosts my participation in class					
4.	ICT makes me cooperate with other learners.					
5.	I understand more when my teacher uses ICT in the classroom.					
6.	I fear using the computer whenever I am given a task by my teacher					
7.	Our teacher does not give me time to use the computer.					
8.	There is no internet access in my school					

APPENDIX VI: CHECKLIST OBSERVATION LEAD

This will enable the implementation of systematic verification procedures for ICT infrastructure, components, and resources.

PART A: Background information about the School.

School	**Classification**
	National school
	Extra county school
	County school

Part B

The table below lists ICT devices that facilitate ICT Integration in curriculum instructions

ICT devices	**Available**	**Adequate**	**Utilized**	**Functional**
Computer/laptop				
Mobile phones				
Internet				
Projector				
Projector Screen				
Radio				
Computer lab				
Source of power- Electricity Solar Power Wind power Biogas				

Location of the ICT tools for instruction

ICT Tools	**Type of ICT available**	**Quantify if applicable**	**Comment**
Computer room			
Principal's office			
Deputy principal			
Director of studies			
Classroom			
Library			

APPENDIX VII: DOCUMENT ANALYSIS

This guide will help the researcher analyze the documents available in school. This aligns with the study objectives: which focuses on Principal's transformal leadership influence on ICT integration in Kakamega county government sponsered high schools .

Part A

Background information of the school

Document analysis number			
Name of the school			
Type of school			
	National		
	Extra-County		
	County		

Document analysis guide on Transformations principals influence on integration of ICT

Objectives	**Document**	**Matter: integration of ICTin curriculum instruction**
Principal's individual consideration on staff skill development and ICT intergration in teaching and learning.	Staff development ICT policy Records on staff development on ICT Records on expert consultations on ICT	Pedagogical activities Lesson plans and schemes of works Students results
Principal's intellectual stimulation to educators on ICT integration in instructional delivery.	ICT committee minutes Staff minutes ICT Budget	Pedagogical activities Lesson plan and schemes of work
Principals inspirational motivation to teachers on ICT integration in instructional process.	School ICT policy Rewards Adequate network and ICT facilities	Pedagogical activities
Principals' idealized influence to teachers on ICT integration in instructional process.	School Block timetable	Work load Mean grade Pedagogical activities

APPENDIX VIII: INTERVIEW GUIDES FOR COUNTY DIRECTOR

1. From your percpective Mention the aims of incorporating ICT into teaching and learning
2. From your perspective, are ICT facilities enough in schools in your area?
3. Do teachers in Public secondary schools in your area coverage integrate ICT in teaching and learning? Give a brief explanation
4. What is your view on the limitations teachers encounter in integrating ICT in schools in your area?
5. In what ways is your office addressing the challenges they face?

Interview Guide for Principals.

SECTION A

Demographic Information

Kindly choose the relevant answer

GENDER	Masculine Feminine
AGE	25-34 35- 44 45- 54 55- and above
Level of Education	Diploma Degree Masters Ph.D.
Work Experience As A Principal	Less Then 5 Years Between 5- 15years More Than 15yrs

SECTION B

Individual consideration aspects

Which facilities do you school have for ICT intergration? Are they adequate

What are the key need of your teachers and students in intergrating ICT?

What measures have you put in place to support your teachers needs.

Intellectual stimulation

How do you encourage teachers to innovate with ICT in their teaching?

What opportunities do you provide for teachers to experiment with new technologies?

How do you promote problem-solving through technology?

What platforms exist for teachers to share creative ICT integration ideas?

Inspiration Motivation

What measures have you put in place to inspire teachers and teachers to intergrateICT

Do you have a school vision?and how often do you communicate with the teachers about

How offen do you consult your teachers about the ICT requirements.

Idealized Influence aspect.

How would you describe your behaviour as a role model?

As a role model have you been using ICT in your classroom instructions?

Do you think your staff enjoy working with you?

INTERVIEW GUIDE FOR TEACHERS

Sections A: Demographic Background

Please complete the questionnaire by choosing relevant answers if required.

1. Gender: Masculine ( ) Feminine ( )
2. Please provide your category of age.

   Under 30 ( ) 31- 40 ( )

   41- 50 ( ) Above 50 ( )
3. Indicate your educational level as categorized below.

   Ph.D. ( ) Masters ( ) Degree ( )

   Diploma ( )

   more indicate
4. Please designate the period you have been working in this school .less than 5 yrs.

   Between 5-15 yrs. More than 15 yrs.
5. Which one of the following describes the category of your school? .

   National ( ) Extra- County ( ) County ( )

SECTION B

1. Individual Consideration

How does the principal address your specific ICT needs?

What personalized support do you receive for technology integration?

How accessible are ICT resources for your teaching needs?

What opportunities exist for personal ICT skill development?

2. Intellectual Stimulation

How does leadership encourage your creativity in ICT integration?

What support do you receive for trying new technology approaches?

How are you encouraged to solve problems using ICT?

What platforms exist for sharing innovative ICT practices?

3. Inspirational Motivation

How is the school's ICT vision communicated to you?

What motivates you to integrate technology in teaching?

How does leadership inspire technological innovation?

How are ICT achievements recognized and celebrated?

4. Idealized Influence

How does leadership model effective ICT use?

What impact does the principal's ICT leadership have on your practice?

How does leadership build trust in technology implementation?

What examples of ICT leadership inspire you?

INTERVIEW GUIDE FOR STUDENTS

SECTION A: Participants'Background Data.

1. Category of the School National ( ) Extra county ( )

   County ( ) Sub County ( )

2. Gender: Male ( ) Female ( )

3. Do you have any computers in your school?

   Yes ( ) No ( )

4. Are you competent in using a computer?

   Yes ( ) No ( )

5. If your answer is (yes), where did you get the expertise in computers?

   The School ( ) Home ( )

   Friend ( ) media ( )

SECTION B

1. Individual Consideration

How does you teachers help you with your specific ICT needs?

What support do you receive for using technology?

Canyou give an example to show how technology has helped you to improve in your subject?

Who do you go to when you have problems with technology in school**?**

2. Intellectual Stimulation

How are you encouraged to use technology creatively?

What opportunities do you have to explore new technologies?

How does technology help you solve problems?

What innovative ICT activities do you participate in?

3. Inspirational Motivation

How do teachers motivate you to use technology?

What excites you about using ICT in learning?

How are you encouraged to achieve through technology?

What technology goals are you working toward?

4. Idealized Influence

How do teachers model effective technology use?

What examples of good ICT practices inspire you?

How does leadership influence your technology use?

What makes you trust using technology for learning?

APPENDIX IX: RESEARCH PERMIT

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

RESEARCH LICENSE

This is to Certify that Ms. Beatrice ABDALLA SHUNE of Kenyatta University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev 2014) in Kakamega on the topic: PRINCIPALS' TRANSFORMATIONAL LEADERSHIP INFLUENCE ON INTEGRATION OF INFORMATION COMMUNICATION TECHNOLOGY IN TEACHING AND LEARNING IN PUBLIC SECONDARY SCHOOLS IN KAKAMEGA COUNTY, KENYA, for the period ending : 31/May/2024.

Director General
NATIONAL COMMISSION FOR SCIENCE TECHNOLOGY & INNOVATION

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APPENDIX X: RESEARCH AUTHORIZATION LETTER

REPUBLIC OF KENYA

MINISTRY OF EDUCATION
STATE DEPARTMENT FOR BASIC EDUCATION

Telephone:
Fax:
E-mail: wespropde@yahoo.com
When replying please quote our Ref.

County Director of Education
Kakamega County
P. O. BOX 137 - 50100
KAKAMEGA

REF: KAKA/C/GA/29/17/VOL.VI/240

25th September 2023

MS. BEATRICE ABISAKI MBUNE
KENYATTA UNIVERSITY
NAIROBI

RE: RESEARCH AUTHORIZATION

Reference is made to a letter from NACOSTI Ref No: NACOSTI/P/23/26372 dated 31st May, 2023 concerning subject matter.

This is to inform you that you have been authorized to carry out research on ***'Principals transformational leadership influence on integration of information communication technology in teaching and learning in public Secondary Schools in Kakamega County'***, for the period ending 23rd February, 2024.

Please accord him/her any necessary assistance he/she may require.

COUNTY DIRECTOR OF EDUCATION
KAKAMEGA COUNTY

HELLEN NYANGAU
COUNTY DIRECTOR OF EDUCATION
KAKAMEGA COUNTY

Copy to:

The Regional Director of Education
WESTERN REGION