

Barriers to Effective ICT Integration in Student Discipline Management: A Mixed-Methods Study of Public Secondary Schools in Rural Kenya

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Abstract

Student indiscipline remains a persistent challenge in Kenyan secondary schools, and Information and Communication Technology (ICT) has been proposed as a potential solution. However, the effectiveness of ICT in discipline management is often constrained by multiple systemic barriers. This study investigated the challenges hindering the effective use of ICT in managing student discipline in public secondary schools in Igembe North Sub-County, Meru County, Kenya. A descriptive cross-sectional survey was conducted with 241 respondents comprising principals, deputy principals, teachers, and school captains. Quantitative data were collected using a structured questionnaire with Likert-scale items measuring six challenge dimensions, and qualitative data were gathered through open-ended questions. Descriptive statistics (means, standard deviations, rankings) and thematic analysis were employed. The highest-ranked challenge was inadequate ICT infrastructure ($M = 3.30$, $SD = 0.72$), followed by limited training for teachers and administrators ($M = 3.22$, $SD = 0.68$) and absence of clear policy guidelines ($M = 3.10$, $SD = 0.66$). Teachers had attended a mean of only 1.8 training sessions, with a range of 0 to 5. Qualitative themes included unreliable infrastructure and resources, insufficient training and capacity building, policy and ethical concerns, and resistance to change. School captains rated infrastructure challenges highest ($M = 3.59$), while deputy principals rated training ($M = 3.44$) and accountability concerns ($M = 3.21$) most acutely. The challenges composite variable demonstrated a perfect normal fit on Q-Q plot. The study concludes that systemic, interconnected barriers, particularly infrastructure deficits and training gaps, severely constrain ICT effectiveness. Recommendations include coordinated investments in reliable infrastructure, sustained professional development, clear policy frameworks, and multi-stakeholder engagement.

Keywords: ICT challenges, student discipline, infrastructure, teacher training, policy gaps, resistance to change, Kenyan secondary schools

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I. Introduction

Student indiscipline remains a formidable challenge in educational systems worldwide, with its prevalence and severity posing significant threats to academic achievement, school safety, and the overall quality of the learning environment (Katua, 2019). In Kenya, the transformation of student unrest from non-violent protests to acts of arson, vandalism, and violence has reached alarming proportions, particularly in public secondary schools (Atieno & Kinyanjui, 2023). Despite numerous interventions by the Ministry of Education, including policy directives and the strengthening of guidance and counselling departments, incidents of severe misconduct persist, suggesting that traditional approaches to discipline management have proven inadequate (Gathumbi & Mulwa, 2019). This persistent failure underscores the urgent need to explore innovative, systemic approaches to behaviour management.

Information and Communication Technology (ICT) has emerged as a promising avenue for strengthening discipline management in schools. Digital tools such as biometric attendance systems, CCTV surveillance, online reporting platforms, and SMS-based communication have been adopted in various contexts to enhance monitoring, streamline record keeping, and facilitate real-time communication between schools and parents (Otieno, 2023; Njagi, Nyakundi & Oigara, 2024). However, the implementation of such technological solutions has yielded mixed results, with many initiatives failing to meet expectations (Sikubwabo & Habihirwe, 2022). This inconsistency between the theoretical promise of ICT and its practical outcomes necessitates a critical examination of the specific factors that determine its effectiveness in localised contexts.

Globally, countries have pursued varied approaches to ICT integration in discipline management. Saudi Arabia adopted a national e-discipline platform after prohibiting corporal punishment, enhancing efficiency in

managing student records (Sebar & Ismail, 2021). In the United States, web-based e-discipline systems provide real-time incident reporting, though data privacy concerns and uneven implementation limit their impact (Jagaba, 2020). Malaysia's e-discipline platforms standardise disciplinary procedures, yet success depends on technical support and teacher digital literacy (Shahlal et al., 2021). These international cases reveal a consistent pattern: ICT tools are theoretically promising, but practical outcomes are heavily mediated by local conditions such as infrastructure, training, and policy coherence (Rogers, 2003).

In Sub-Saharan Africa, the integration of ICT into student discipline management remains nascent and uneven. In Botswana and South Africa, ICT use is largely limited to basic SMS alerts rather than comprehensive e-discipline systems (Suping, 2024; Temitayo et al., 2019). Nigeria presents a similar picture, where digital tools are seldom used for proactive discipline management; instead, ICT is often associated with examination malpractice and cyber-misconduct (Usman, 2019). Rwanda has focused on conventional teacher-led disciplinary methods (Damien, 2018), while Uganda's experience shows sporadic and reactive use of ICT (Kaweesi et al., 2023). These regional examples underscore that the potential of ICT to transform discipline management remains largely untapped in Sub-Saharan Africa.

In Kenya, the gap between ICT policy and practice is particularly evident. The government has invested in digital literacy programmes and ICT infrastructure, yet the application of these technologies to student discipline management has received far less attention (Mwangi & Njenga, 2021). Studies in Nakuru and Nyandarua North sub-counties reported positive correlations between ICT use and improved discipline outcomes (Atieno & Kinyanjui, 2023; Njagi, Nyakundi & Oigara, 2024). However, other regions, including Meru County, continue to experience high levels of indiscipline despite the presence of similar ICT tools. This disparity suggests that the mere availability of ICT does not guarantee effective discipline management; rather, factors such as infrastructure reliability, teacher training, policy clarity, and stakeholder collaboration determine whether ICT becomes a transformative tool or remains a peripheral addition.

The empirical literature on challenges facing ICT use in education has identified several recurrent barriers. Jacob, Jegede and Musa (2020) found that inadequate funding, lack of ICT infrastructure, unstable power supply, high equipment costs, poor implementation of government ICT policies, weak network coverage, and low ICT literacy among staff hindered effective administration in Nigerian secondary schools. Alice (2019) reported that teachers in Kisii County, Kenya, cited insufficient training, limited administrative support, and lack of funds as barriers to using instructional technologies. Yalley (2022) found that administrators in Ghana were dissatisfied with software availability, internet access, and institutional ICT programmes. Davidson and Ezech (2023) identified lack of internet access, unreliable power supply, insufficient government funding, and inadequate technical support as critical challenges in Nigeria.

More recent studies have extended these findings. Badshah et al. (2023) reviewed smart education systems and found that poor data security, lack of technical expertise, and user resistance due to privacy concerns hinder implementation. Stefansson and Jonsdottir (2025) examined technology use in low-income Kenyan schools and found that persistent infrastructural limitations, insufficient teacher training, and inconsistent stakeholder involvement limit the sustainability of ICT interventions. These studies collectively demonstrate that successful use of ICT in managing discipline requires not just access to technology but systemic capacity, training, administrative willpower, and ethical guidelines (Ertmer, 1999).

However, most existing studies have focused on general ICT administration or instructional technology rather than specifically on discipline management. The specific constraints affecting e-discipline systems, such as digital attendance tracking, CCTV monitoring, and online reporting for behavioural incidents, have not been systematically documented. Furthermore, the literature lacks empirical rankings of challenges from multiple stakeholder perspectives and mixed-methods designs that combine quantitative ranking with qualitative depth. The present study addresses these gaps by focusing exclusively on challenges related to ICT use in student discipline management, using a dedicated set of items that address infrastructure, training, policy, cost, resistance, and technical support. Data were collected from principals, deputy principals, teachers, and student leaders, allowing for a comparative analysis of perceived challenges across stakeholder categories.

The study was guided by the following research question: What challenges hinder the effective use of ICT in managing student discipline in public secondary schools in Igembe North Sub-County, Meru County, Kenya? By employing a mixed-methods design that includes Likert-scale items to generate mean rankings and standard deviations, alongside open-ended questions that yield qualitative themes, the study provides both breadth and depth of understanding. This comprehensive approach offers a more nuanced account of how specific barriers constrain the effectiveness of ICT in managing student discipline in a rural Kenyan context.

II. Methodology

2.1 Research Design

A descriptive cross-sectional survey design was adopted for this study. This design allows for the collection of data from respondents at a single point in time, enabling the assessment of existing conditions,

patterns, and relationships without variable manipulation (Blumberg, Cooper, & Schindler, 2014). The descriptive cross-sectional design is particularly suitable for identifying the prevalence and severity of challenges perceived by different stakeholder groups within a defined population. It also supports the integration of quantitative and qualitative data, as the survey can incorporate both closed-ended Likert-scale items for statistical analysis and open-ended questions for qualitative insights.

2.2 Study Area and Population

The study was conducted in Igembe North Sub-County, Meru County, Kenya. The sub-county has 34 public secondary schools, each with a principal, a deputy principal, and several teachers responsible for enforcing and overseeing student discipline. Student leaders, specifically school captains, are directly involved in maintaining discipline and thus form an integral part of the study population. The target population comprised principals ($n = 34$), deputy principals ($n = 34$), teachers ($n = 680$), and school captains ($n = 34$), totalling 782 individuals. This composition reflects the hierarchical and functional structure of discipline management in Kenyan secondary schools.

2.3 Sampling Techniques and Sample Size

The study employed a combination of sampling techniques appropriate for each respondent category. A census was used for principals and deputy principals due to their small numbers (34 each) and their key roles as discipline managers, ensuring complete representation of leadership perspectives. Stratified random sampling was employed for teachers to ensure proportional representation across the 34 schools, reducing sampling bias while maintaining manageability. Purposive sampling was used for school captains to select student leaders who had sufficient experience with ICT-based discipline systems, ensuring that the student perspective was informed and relevant. The achieved sample comprised 241 respondents (34 principals, 34 deputy principals, 139 teachers, and 34 school captains), representing a 91% response rate.

2.4 Research Instruments

A structured questionnaire was used for data collection. The questionnaire was organised into six sections. Section A collected demographic information including age, gender, teaching experience (where applicable), and position. Section B comprised six Likert-scale items measuring the current status of ICT adoption in discipline management (ICT1 to ICT6). Section C contained five items capturing the perceived benefits of ICT (Benefit1 to Benefit5). Section D consisted of six items addressing the challenges hindering ICT use (Challenge1 to Challenge6). Section E included six items assessing discipline outcomes (D1 to D6). Section F comprised open-ended questions that allowed respondents to provide qualitative insights into their experiences with ICT in student discipline management. All Likert-scale items used a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The questionnaire was pilot-tested on 24 respondents (10% of the target sample) comprising 3 principals, 3 deputy principals, 15 teachers, and 3 school captains. Cronbach's Alpha coefficients for the challenges scale was 0.85, indicating good internal consistency. Minor adjustments were made to the wording of three items to improve clarity based on pilot feedback.

2.5 Data Collection Procedures

Questionnaires were administered face-to-face by the researcher to all respondents. School principals provided informed consent on behalf of their institutions, and individual respondents provided written consent. The researcher explained the purpose of the study, assured anonymity, and emphasised that participation was voluntary. Data collection was conducted over a period of four weeks, with each questionnaire taking approximately 20 minutes to complete. All 241 questionnaires were returned and were complete, yielding a 100% completion rate among those who responded.

2.6 Data Analysis

Quantitative data were analysed using SPSS version 27. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to summarise the characteristics of the sample and the distribution of responses across the six challenge items. The normality of the challenges composite variable was assessed using a Quantile-Quantile (Q-Q) plot. Qualitative data from open-ended questions were subjected to thematic analysis following the procedures outlined by Braun and Clarke (2006). This involved familiarisation with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final analysis. Themes were derived inductively from the data and are presented as direct quotations to preserve the authenticity of participants' voices.

2.7 Ethical Considerations

Ethical approval was obtained from the university ethics committee and the National Commission for Science, Technology and Innovation (NACOSTI). Permission was also sought from the Meru County education authorities. Informed consent was obtained from all participants, and they were assured of anonymity and confidentiality. Participants were informed of their right to withdraw from the study at any time without penalty. Data were stored securely and accessed only by the researcher.

III. Findings

3.1 Demographic Characteristics of Respondents

The sample comprised 241 respondents: 34 principals, 34 deputy principals, 139 teachers, and 34 school captains. Among teaching staff, 49.8% were male and 50.2% female; school captains were equally split by gender. The majority of teachers (45.4%) had 5-10 years of experience, while principals and deputy principals had over 10 years of experience (64.7% and 55.9%, respectively). The demographic profile indicates a mature and experienced respondent base, enhancing the credibility of the data.

3.2 Quantitative Analysis of Challenges

Table 1 presents the mean scores, standard deviations, and rankings of the six challenge items.

Table 1: Challenges Hindering ICT Use (n = 241)

Item	Description	Mean	Std. Dev	Rank
Challenge1	Inadequate ICT infrastructure (power, internet, devices)	3.30	0.72	1
Challenge2	Limited training for teachers and administrators	3.22	0.68	2
Challenge3	Absence of clear school policies guiding ethical ICT use	3.10	0.66	3
Challenge4	Lack of clear school-level ICT policies	3.05	0.70	4
Challenge5	High cost of ICT tools and maintenance	2.98	0.65	5
Challenge6	Resistance to ICT adoption among teachers/staff	2.90	0.69	6

All six challenge items scored at or above the neutral midpoint of 2.5, indicating that respondents identified multiple barriers to effective ICT use. The highest-ranked challenge was inadequate infrastructure ($M = 3.30$, $SD = 0.72$), followed by limited training ($M = 3.22$, $SD = 0.68$) and absence of clear policy guidelines ($M = 3.10$, $SD = 0.66$). Cost and sustainability concerns ($M = 3.05$), resistance to change ($M = 2.98$), and technical support issues ($M = 2.90$) were ranked lower but remained notable. The standard deviations indicate moderate variability across all items, suggesting that while challenges are widely perceived, their severity differs across schools.

3.3 Position-Based Variability

Table 2 presents mean scores for each challenge item disaggregated by respondent position.

Table 2: Challenges of ICT Mean Scores by Position

Item	Principal	Deputy Principal	School Captain	Teacher
Challenge1	3.38	3.44	3.59	3.39
Challenge2	3.35	3.44	3.35	3.26
Challenge3	2.94	3.00	2.91	2.98
Challenge4	3.09	3.15	3.06	3.17

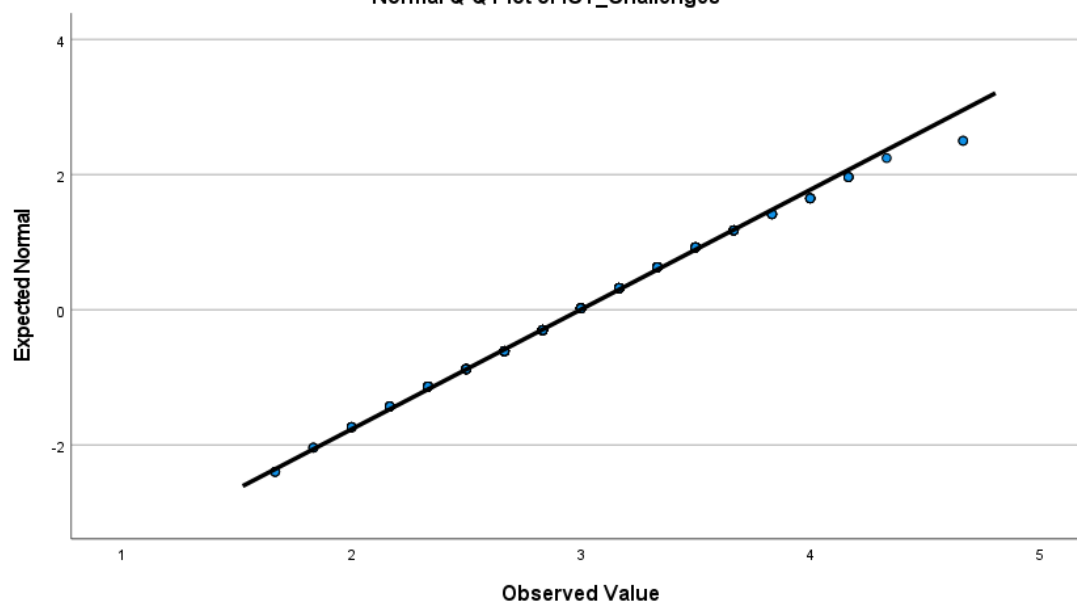
Item	Principal	Deputy Principal	School Captain	Teacher
Challenge5	3.06	3.24	3.00	3.13
Challenge6	2.94	3.09	2.97	2.96

School captains rated infrastructure challenges (Challenge1) highest at 3.59, reflecting their direct experience with unreliable power and poor internet during daily school operations. Teachers assigned slightly lower ratings to both infrastructure (3.39) and training (3.26), suggesting that while they acknowledge these obstacles, their administrative responsibilities may insulate them from the most acute operational disruptions. Deputy principals rated training (3.44), cost (3.24), and accountability concerns (3.09) highest, reflecting their administrative and financial oversight roles. Challenge6 (resistance) received the lowest overall ratings, indicating that staff and students are generally open to ICT integration.

3.4 Normality Assessment

The Q-Q plot for the challenges composite variable demonstrated a perfect normal fit, with observed data points closely adhering to the diagonal reference line. There was no evidence of systematic deviation, confirming that the challenges variable is free from significant skewness or kurtosis. This normal distribution supports the use of parametric statistical analyses and indicates that the ranking of challenges is not an artefact of a skewed distribution but genuinely reflects respondents' differentiated perceptions.

Figure 1
Q-Q Plot of Challenges Composite Variable
Normal Q-Q Plot of ICT_Challenges



3.5 ICT Training and Capacity Building

Respondents were asked to indicate the number of ICT training sessions they had attended specifically related to the use of technology in school management. The analysis revealed a mean of 1.8 training sessions, with a range from 0 to 5. This finding is significant for several reasons. First, a mean of less than two training sessions per teacher is notably low, considering that ICT integration requires ongoing professional development rather than one-time exposure. Second, the range from 0 to 5 indicates considerable disparity across schools and among individual teachers; some teachers have received no formal ICT training, while a small minority have attended up to five sessions. Third, the low average aligns with the second-ranked challenge (Challenge2) regarding inadequate training, providing convergent validity to the finding that capacity building is a major barrier. Without sufficient training, even well-intentioned teachers may lack the confidence and competence to use ICT tools effectively for discipline management.

3.6 Qualitative Analysis of Challenges

Thematic analysis of open-ended responses yielded four dominant themes.

Theme 1: Infrastructure and Resources

The first and most frequently cited theme was infrastructure and resources, encapsulated in the participant statement: *"There are not enough computers and internet is unreliable."* Participants elaborated that scarcity of computers forced many teachers to share devices or rely on personal smartphones for discipline-related tasks. The unreliability of internet connectivity, particularly during peak hours, was described as a persistent frustration that undermined the usability of cloud-based platforms and real-time monitoring systems. One participant noted that even when digital systems were available, the slow or intermittent internet rendered them practically unusable. This infrastructure deficit has cascading effects: when technology is unreliable, teachers are less likely to invest time in learning to use it, and the perception of ICT as a dependable tool diminishes.

Theme 2: Training and Capacity

The second theme, training and capacity, was expressed in the statement: *"Most teachers are not well trained in ICT use."* Participants described a situation where ICT tools were introduced without accompanying professional development, leaving teachers to navigate the systems on their own. For many teachers, especially those with more years of experience, the lack of training created anxiety and a sense of inadequacy. One participant observed that teachers often resorted to using only the most basic functions of digital platforms, such as sending messages, while more sophisticated features such as tracking behavioural patterns, generating reports, or using analytics to identify at-risk students remained untouched. This superficial use of ICT, driven by insufficient training, explains why the potential benefits of ICT cannot be fully realised.

Theme 3: Policy and Ethical Concerns

The third theme, policy and ethical concerns, was articulated in the statement: *"There are no clear guidelines on ICT use in discipline."* Participants expressed uncertainty about what constitutes appropriate use of ICT for discipline management, particularly in relation to student privacy, data protection, and the boundaries of monitoring. Questions arose about whether it is permissible to track student communications, how long disciplinary records should be retained, and who has access to sensitive information. The absence of clear guidelines creates a situation where some teachers may avoid using ICT for discipline altogether for fear of overstepping ethical boundaries, while others may use it inconsistently. This policy vacuum is particularly concerning in light of Kenya's Data Protection Act (2019).

Theme 4: Resistance to Change

The fourth theme, resistance to change, was captured in the statement: *"Some teachers prefer traditional discipline methods."* Participants noted that among some colleagues, there exists a deep-seated preference for face-to-face interactions, paper-based records, and established routines. This resistance is not merely a matter of habit but may also stem from a belief that traditional methods are more personal, more authoritative, or more effective than digital alternatives. One participant observed that older teachers, in particular, expressed skepticism about the reliability of technology and questioned whether it could replace the "human touch" in discipline management.

IV. Discussion

This study set out to investigate the challenges hindering the effective use of ICT in managing student discipline in public secondary schools in Igembe North Sub-County, Kenya. The findings reveal a constellation of systemic, interconnected barriers that collectively constrain the effectiveness of ICT in discipline management. The highest-ranked challenge was inadequate ICT infrastructure, including unreliable power supply, poor internet connectivity, and insufficient digital devices. This finding aligns closely with the observations of Jacob, Jegede and Musa (2020) in Nigerian secondary schools, who identified inadequate funding, lack of ICT infrastructure, unstable power supply, and weak network coverage as primary barriers to ICT administration. Similarly, Davidson and Ezeh (2023) reported that lack of internet access, unreliable power supply, and insufficient government funding were the most critical challenges in Nigerian schools. The present study extends these findings to the Kenyan context by demonstrating that infrastructure deficits are not merely obstacles to general ICT administration but specifically impede the use of digital tools for discipline management. The qualitative theme *"There are not enough computers and internet is unreliable"* provides concrete evidence that even when schools possess some ICT resources, their functionality is compromised by unreliable connectivity. The implication is that policy interventions aimed at improving ICT integration in discipline management must prioritise investments in reliable electricity, consistent internet access, and sufficient devices before expecting any meaningful impact on student behaviour.

The second-ranked challenge, inadequate training ($M = 3.22$, $SD = 0.68$), underscores a critical insight: technology adoption is not merely a matter of provision but of capability. The finding that teachers had attended a mean of only 1.8 training sessions, with some having received no training at all, corroborates the findings of Alice (2019) in Kisii County, Kenya, where teachers cited insufficient training and limited administrative support as major barriers to using instructional technologies. The present study reinforces these findings by quantifying the training deficit and linking it directly to the underutilisation of ICT for discipline management. Furthermore, the qualitative theme *“Most teachers are not well trained in ICT use”* echoes Alice’s participants’ concerns. The implication is that training must move beyond one-time workshops to sustained, practice-embedded professional development that builds teachers’ confidence in using ICT for strategic discipline functions such as behaviour tracking, early identification of at-risk students, and data-driven intervention (Darling-Hammond et al., 2017).

The third-ranked challenge, the absence of clear policy guidelines ($M = 3.10$, $SD = 0.66$), points to a governance gap that has received less attention in the literature on ICT in education but is nonetheless critical for the ethical and consistent application of technology in discipline management. This finding resonates with Yalley (2022) in Ghana, who found that institutional barriers such as lack of training, inadequate facilities, and poor integration of ICT into administrative routines were major obstacles. Yalley also noted that administrators were dissatisfied with the availability of software, internet access, and institutional ICT programmes for school management. The current study extends this by highlighting the specific policy vacuum surrounding ethical ICT use in discipline, including student privacy, data retention, and consent. The qualitative theme *“There are no clear guidelines on ICT use in discipline”* directly supports this. Similarly, Kimani (2019) identified weak policies and lack of management commitment as barriers to ICT integration in Kenyan county governments, a finding that mirrors the school context. The implication is that national and county education authorities must develop and disseminate clear, practical guidelines that schools can adapt locally, addressing data protection, monitoring boundaries, and disciplinary record-keeping (Republic of Kenya, 2019).

The challenge of cost and sustainability ($M = 3.05$, $SD = 0.70$) aligns with the work of Badshah et al. (2023), who reviewed smart education systems using IoT technologies and found that poor data security, lack of technical expertise, and user resistance due to privacy concerns hinder implementation. Although Badshah et al. focused on advanced technologies, their emphasis on cost and maintenance resonates with the current finding that financial constraints affect effective ICT use. Additionally, Stefansson and Jonsdottir (2025) examined technology use in low-income schools in Kenya and found that persistent infrastructural limitations and lack of local technical support lead to breakdowns that undermine consistent enforcement of discipline policies. The present study’s finding that technical support and maintenance issues (Challenge6, $M = 2.90$) are a notable, though lower-ranked, challenge supports this. The implication is that schools require not only initial investment in hardware but also ongoing budgets for maintenance, repairs, and technical support, as well as community-based solutions such as training local technicians or establishing school-level ICT committees.

The finding that resistance to change ($M = 2.98$) is the lowest-ranked challenge, yet still present, both supports and nuances the observations of Sandqvist (2019) in Sweden, who reported that increased student indiscipline has occurred despite widespread ICT adoption, suggesting that technology alone cannot manage discipline without adequate guidance and ethical digital culture. Sandqvist’s work implies that attitudinal and cultural factors are significant, and the current study confirms that while resistance exists, it is not the most pressing barrier in Igembe North Sub-County. This is a positive finding, as it suggests that staff and students are generally open to ICT integration. However, the qualitative theme *“Some teachers prefer traditional discipline methods”* indicates that resistance is still present, particularly among older or more experienced teachers. The implication is that change management strategies should focus on demonstrating the value of ICT through peer modelling, mentoring, and showcasing quick wins, rather than confronting deep-seated opposition (Ertmer, 1999).

The position-based variability revealed notable patterns. School captains rated infrastructure challenges highest ($M = 3.59$), reflecting their direct experience with unreliable power and poor internet during daily school operations. This underscores the reality that students, who are often the end-users of ICT systems for attendance, communication, and reporting, bear the brunt of infrastructural deficiencies. Deputy principals rated training (3.44), cost (3.24), and accountability concerns (3.09) highest, reflecting their administrative and financial oversight responsibilities. This pattern suggests that perceptions of challenges are shaped by role-specific experiences and responsibilities. The consistent agreement across all groups that Challenge3 (absence of clear policies) is a barrier, with narrow mean ranges (2.91–3.00), indicates a general consensus that formal ICT policies are either absent, unclear, or not effectively communicated.

The interconnectedness of challenges observed in this study, where infrastructure deficits compound training gaps, and policy ambiguity exacerbates underutilisation, directly supports the conclusions of Stefansson and Jonsdottir (2025) that successful use of ICT in managing discipline requires systemic capacity, training, and administrative willpower, not just access to technology. Similarly, Jacob, Jegede and Musa (2020) noted that poor implementation of government ICT policies and low ICT literacy among staff hindered effective administration. The current study provides empirical evidence from Meru County that these challenges are not isolated but mutually reinforcing. The implication for policymakers and school leaders is that piecemeal interventions—

providing computers without training, or training without reliable internet—will fail. A holistic, coordinated strategy that simultaneously addresses infrastructure, training, policy, and sustainability is essential (Ertmer, 1999; Rogers, 2003).

The perfect normal distribution of the challenges composite variable, as confirmed by the Q-Q plot, merits attention. Perceptual measures of barriers often exhibit non-normality because respondents may cluster around high levels of agreement (e.g., most people agreeing that infrastructure is a problem). However, in this study, the normal fit indicates that while many respondents rated challenges as moderate to high, there was a balanced spread across the range, with progressively fewer respondents reporting very low or very high levels of challenge. This enhances the representativeness of the sample and suggests that the ranking of challenges (infrastructure first, training second, etc.) is not an artefact of a skewed distribution but genuinely reflects the differentiated perceptions of the respondents (Pallant, 2020). The normal distribution also aligns with diffusion of innovations theory (Rogers, 2003), where most organisations cluster around the average while a small number lead or lag.

V. Conclusion

This study concludes that a constellation of systemic challenges severely constrains the effective use of ICT in managing student discipline in public secondary schools in Igembe North Sub-County. Infrastructure and resource deficits emerged as the most critical barrier, with unreliable internet connectivity and insufficient computers directly impeding consistent ICT use. This challenge is foundational: without reliable hardware and connectivity, even the most well-intentioned ICT initiatives cannot succeed. A second major conclusion is that inadequate training and capacity building represent a critical bottleneck. The mean of only 1.8 training sessions per teacher, with a range of 0 to 5, indicates that professional development in ICT for discipline management is sporadic and insufficient. Teachers lack the skills to move beyond basic functions and leverage ICT for strategic discipline purposes.

The study further concludes that the absence of clear policy guidelines on ICT use in discipline creates uncertainty and inconsistency. Without explicit frameworks on issues such as student privacy, data retention, and appropriate monitoring, schools operate in a regulatory vacuum. This policy gap not only hinders effective use but also exposes schools to potential legal and ethical risks, particularly in light of Kenya's Data Protection Act (2019). Resistance to change, while ranked lower than infrastructure and training, remains a significant human factor. Some teachers prefer traditional discipline methods, often due to comfort, skepticism, or previous negative experiences with technology.

Collectively, these challenges are not isolated but mutually reinforcing: poor infrastructure discourages training, lack of training fosters resistance, and the absence of policy leaves all efforts uncoordinated. This interconnectedness means that addressing any single challenge in isolation is unlikely to yield sustainable improvements. The cumulative effect is that schools in Igembe North Sub-County find themselves in a state of technological limbo, possessing some ICT tools but lacking the conditions necessary to leverage them for meaningful transformation of discipline management.

5.1 Implications for Policy and Practice

First, the Ministry of Education and the County Government of Meru should prioritise investment in ICT infrastructure in public secondary schools, with particular attention to reliable internet connectivity and adequate computer devices. Targeted funding should be allocated to ensure that every school has stable, high-speed internet access and sufficient devices. Second, there is an urgent need for systematic and sustained professional development programmes for teachers and school administrators. Training must move beyond one-time workshops to sustained, practice-embedded professional development that builds teachers' confidence in using ICT for strategic discipline functions. Third, clear policy guidelines on the use of ICT in student discipline must be developed and disseminated to all schools. Fourth, school leadership should be strengthened to champion ICT integration in discipline management.

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