



Influence of School Administration's Support on ICT Integration on Learners' Performance in Kiswahili Literature in Public Secondary Schools in Athi River Sub-County Machakos County, Kenya

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ABSTRACT

The purpose of this study was to examine the effect of Information Communication Technology (ICT) integration on students' academic performance in Kiswahili Literature in public secondary schools in Athi River Sub-County, Machakos County, Kenya. Specifically, the study investigated how school administration support for ICT integration influences learners' performance in Kiswahili Literature. The study was guided by the Diffusion of Innovations Theory and employed a descriptive survey research design. The target population comprised 12 public secondary school principals, 48 Kiswahili teachers, and 840 Form Three students. Stratified sampling was used to categorize schools into Extra-County, County, and Sub-County schools, while purposive sampling selected principals and Kiswahili teachers. Simple random sampling was used to select 240 Form Three students. Data were collected using questionnaires and interview guides and analysed using descriptive and inferential statistics with SPSS Version 28. The findings revealed that ICT integration significantly improved students' performance in Kiswahili Literature. The mean score increased from 27.65% in the pre-test to 62.63% in the post-test, indicating a mean performance gain of 34.98 percentage points. School administration support positively influenced learners' performance through the formulation and implementation of ICT policies, principals' leadership in promoting ICT integration, and encouragement of teachers to incorporate ICT into classroom instruction. These factors showed statistically significant positive relationships with students' academic performance. However, the study identified challenges, including limited ICT programmes for Kiswahili Literature, inadequate Kiswahili digital learning resources, and restricted student access to ICT facilities at home. The study concluded that effective administrative support is essential for successful ICT integration and recommended strengthening ICT infrastructure, developing more Kiswahili digital resources, enhancing school ICT policies, and providing continuous teacher training to improve learners' academic achievement.

Keywords: School Administration's Support, ICT integration, Kiswahili Literature, Students' Academic Performance, Public Secondary Schools

INTRODUCTION

Information and Communication Technology (ICT) has become an essential component of modern education because it enhances communication, access to information, teaching, and learning. Globally, ICT has transformed how learners acquire knowledge and how teachers deliver instruction (Roztock, Sojac, & Weistroffer, 2019). The integration of ICT into education has been widely adopted as a strategy for improving the quality of teaching and learning. For example, Malaysia integrated ICT into both primary and secondary school curricula through its Education Blueprint 2013–2025, focusing on improving ICT infrastructure, teacher capacity, and digital learning, particularly in remote schools (Ghavifekr, Kunjappan, Ramasamy, & Anthony, 2016). These initiatives demonstrate that effective ICT integration requires strong institutional and administrative support.

According to Mikre (2011), ICT is a key enabler of twenty-first-century skills and provides learners with opportunities for interactive and learner-centered education. ICT tools, including computers, laptops,



projectors, digital learning platforms, radio, and television, create dynamic learning environments that improve instructional delivery. Consequently, teachers are expected to integrate ICT into classroom practice to enhance teaching effectiveness and learners' academic achievement. However, successful ICT integration depends not only on the availability of technology but also on administrative leadership that promotes its effective use.

Research has consistently shown that ICT integration improves educational quality when supported by appropriate school leadership and policies. Miima, Ondigi, and Mavisi (2013) observed that ICT enhances teaching and learning by improving access to educational resources and instructional effectiveness. Similarly, studies conducted in Australia, India, Ghana, and Kenya have examined ICT integration and identified institutional support, leadership, and teacher preparedness as major determinants of successful implementation (Baskin & Williams, 2006; Khirwadkar, 2007; Buabeng-Andoh, 2012; Ondiegi, 2014).

In Kenya, the Ministry of Education introduced the National ICT Policy for Education in 2006 to institutionalize ICT integration in schools. The policy encouraged schools to invest in ICT infrastructure, provide computer studies, and integrate technology into classroom instruction. Consequently, school administrators were expected to formulate ICT policies, mobilize resources, and encourage teachers to adopt ICT as an instructional tool. Studies by Abuyeka (2014) and Kisirkoi (2015) established that ICT not only improves instructional quality but also increases learners' access to knowledge and enhances teaching effectiveness. Likewise, Mutwiri et al. (2017) found that ICT motivates learners, simplifies the teaching of abstract concepts, and provides immediate feedback during classroom instruction.

School administration plays a critical role in determining the success of ICT integration. Effective principals provide leadership by developing school ICT policies, allocating resources, motivating teachers, and creating an environment that supports innovation in teaching and learning. Mingaine (2013) argues that institutions that successfully integrate ICT become more efficient and innovative because technology strengthens organizational effectiveness and improves service delivery. Within schools, such leadership encourages teachers to embrace digital pedagogies that enhance learner engagement and academic performance.

The teaching of Kiswahili Literature presents unique opportunities for ICT integration because digital resources can enrich the teaching of novels, plays, poetry, and oral literature through multimedia content and interactive learning experiences. Kiswahili is Kenya's national and official language and a compulsory subject in secondary schools (Wanjiku-Omollo, 2014). The Kenya Institute of Curriculum Development (KICD, 2017) prescribes Kiswahili Literature as a core component of the secondary school curriculum, while the Kenya National Examinations Council (KNEC) examines it as Paper Three of the KCSE examination. Despite its importance, national performance in Kiswahili Literature has remained relatively low over recent years, suggesting the need for innovative instructional approaches.

The Government of Kenya has further promoted ICT integration through the Kenya Education Sector Support Programme (KESSP) and the National ICT Strategy for Education and Training, which aim to improve educational quality and achieve Education for All (Farrell, 2007; Waema, 2005). These initiatives include teacher ICT training and the development of digital learning content. However, the extent to which school administration supports ICT integration may determine whether these national initiatives translate into improved learner performance. This study therefore examined how school administration support influences ICT integration and learners' performance in Kiswahili Literature in public secondary schools in Athi River Sub-County, Machakos County, Kenya.

Statement of the Problem

Despite the Government of Kenya's efforts to promote Information and Communication Technology (ICT) integration in education, students' performance in Kiswahili Literature (KCSE Paper III) has continued to decline. The Kenya National Examinations Council (KNEC Report, 2019) indicates a consistent downward trend in national mean scores, raising concerns about the effectiveness of current teaching approaches. Although ICT has been widely adopted in teaching science and mathematics, its integration in language subjects, particularly Kiswahili Literature, remains limited and inadequately documented (Aramide, Ladipo, & Adebayo, 2015). School administration plays a crucial role in ICT integration by providing policies,



infrastructure, leadership, and teacher support. However, little empirical evidence exists on how such administrative support influences learners' academic performance in Kiswahili Literature in public secondary schools in Athi River Sub-County, Machakos County. This study therefore sought to bridge this knowledge gap by examining the influence of school administration support on ICT integration and students' academic performance in Kiswahili Literature.

LITERATURE REVIEW

School principals play a central role in promoting Information and Communication Technology (ICT) integration in teaching and learning. As institutional leaders, they influence school policies, resource allocation, and the adoption of innovative instructional practices. Their commitment to ICT integration shapes teachers' willingness to embrace technology and ultimately affects learners' academic outcomes. School leaders are therefore regarded as catalysts for educational change because they create an environment that supports innovation and improved teaching practices (Guvhu, 2018). Similarly, Harris et al. (2014) found that principals' leadership and support were among the most significant factors influencing the success and effectiveness of educational programmes.

School administrators act as change agents by providing strategic leadership during ICT implementation. Their responsibilities extend beyond policy formulation to motivating teachers, coordinating ICT initiatives, and establishing partnerships with ICT support organizations. Effective ICT integration requires school leaders who possess adequate technological knowledge and can inspire teachers to adopt innovative pedagogical approaches. Administrators who are ICT competent are better positioned to overcome implementation challenges and cultivate collaborative school cultures that support technology-enhanced learning (Abuyeka, 2014).

Successful ICT integration also depends on the availability of adequate infrastructure and financial investment. School administrations are expected to provide essential resources such as computers, internet connectivity, projectors, software, and computer laboratories. However, inadequate ICT facilities and poor internet connectivity remain major barriers to technology integration, particularly in developing countries. In Kenya, studies have reported that insufficient ICT infrastructure limits effective online interaction between teachers and learners, thereby constraining the quality of technology-supported education (Ngeera, Kibaara, & Gichohi, 2018, cited in Nyambane & Nzuki, 2019).

Beyond infrastructure, school administrations have a responsibility to facilitate continuous teacher professional development. Teachers require regular ICT training to develop the pedagogical and technical competencies needed to integrate technology effectively into classroom instruction. Continuous capacity building enhances teachers' confidence, keeps them updated on emerging technologies, and promotes lifelong learning, thereby increasing the effectiveness of ICT integration in schools (Ahmed, 2016).

The formulation and implementation of a comprehensive school ICT policy is another critical responsibility of school administration. A well-developed ICT policy provides a clear vision, objectives, and implementation strategies for integrating technology into school management and classroom instruction. Such policies should define resource requirements, encourage stakeholder participation, and promote collaboration among teachers and school leaders. Principals are expected to champion these policies by encouraging teachers to integrate ICT into teaching, assessment, and monitoring processes (Ngatia, 2015).

Empirical studies generally support the positive relationship between administrative support and ICT integration. Jepkemoi et al. (2022) reported a very strong positive relationship ($r = 0.913$) between administrative support and ICT integration in teaching and learning in Turkana Central Sub-County, suggesting that leadership support significantly enhances technology adoption. However, the study focused on correlation and did not explain which specific aspects of administrative support contributed most to successful ICT implementation or whether the findings are generalizable to other educational contexts (Jepkemoi et al., 2022).



In contrast, Ngavana, Mutua, and Kibet-Koech (2018) found that only 18.17% of Kiswahili teachers in Kilungu Sub-County believed that school management encouraged them to acquire ICT skills or integrate ICT into teaching. This finding suggests that although administrative support is recognized as important, many teachers perceive it as inadequate. The contradiction between these findings highlights the need for further research on how school administration support influences ICT integration and learners' academic performance in Kiswahili Literature, particularly in Athi River Sub-County, Machakos County, where empirical evidence remains limited (Ngavana, Mutua, & Kibet-Koech, 2018).

In conclusion, the literature demonstrates that school administration support is fundamental to successful ICT integration through leadership, policy development, infrastructure provision, and teacher training. However, inconsistent findings on the level and effectiveness of such support indicate the need for further empirical investigation into its influence on learners' academic performance in Kiswahili Literature.

Theoretical Framework

This study was guided by the Diffusion of Innovations Theory developed by Rogers (1962) and later revised by Rogers (2003). The theory explains how innovations or technologies spread through communication channels within a social system over time. It identifies five stages of adoption: knowledge, persuasion, decision, implementation, and confirmation (Peixoto et al., 2014). The theory also classifies adopters into innovators, early adopters, early majority, late majority, and laggards, depending on their willingness to embrace new technology. In educational settings, ICT is viewed as an innovation whose successful adoption depends on teachers' attitudes, competence, and the support provided by school administration. Effective leadership, adequate infrastructure, and a supportive school environment facilitate the diffusion and integration of ICT into teaching and learning. The theory was appropriate for this study because it explains how school administration support influences teachers' adoption of ICT and, consequently, learners' academic performance in Kiswahili Literature (Rogers, 2003; Sahin, 2006).

RESEARCH METHODOLOGY

The study was conducted in Athi River Sub-County, Machakos County, Kenya, covering 12 public secondary schools across six wards. A quasi-experimental research design was used to examine the effect of ICT-based instruction on learners' academic performance in Kiswahili Literature. The target population comprised 840 Form Three students, 48 Kiswahili teachers, and 12 principals, from whom 300 respondents were sampled using multistage sampling. The learner sample consisted of 240 students who participated in both pre-test and post-test assessments.

Data were collected using questionnaires, interview guides, and standardized Kiswahili Literature achievement tests. The same learners completed comparable pre-test and post-test assessments under similar conditions. Quantitative data were analysed using SPSS Version 27, employing descriptive statistics such as frequencies, percentages, means, and standard deviations. Inferential analysis included a paired-samples t-test to determine whether there was a statistically significant difference between learners' pre-test and post-test mean scores, together with appropriate correlation or association tests to examine relationships among study variables.

RESULTS AND DISCUSSIONS

Students' Performance

The researcher sought to measure learners' academic performance by comparing standardized Kiswahili Literature pretest and posttest scores, and the results are shown in Table 1.1

Table 1.1: Measuring Performance

Variable	Obs	Mean	Std. Dev.	Min	Max
Standardized form 3 Kiswahili test before being taught using ICT tools (Pretest)	240	27.65	15.62	5	70
Standardized form 3 Kiswahili test after the learners being taught using ICT tools (Posttest)	240	62.63	14.82	25	95
Performance Gap	240	34.98	9.00	15	60

Table 1.1 shows a substantial improvement in students' academic performance after the integration of ICT in the teaching of Kiswahili Literature. The mean score increased from 27.65% in the pretest to 62.63% in the posttest, representing a mean performance gain of 34.98 percentage points. This observation indicates that learners performed considerably better after being taught using ICT tools. The increase in the minimum score from 5% to 25% and the maximum score from 70% to 95% further suggests that ICT-supported instruction benefited both low- and high-performing learners. The findings imply that integrating ICT into Kiswahili Literature enhances learner engagement, understanding of literary concepts, and overall academic achievement. Improved performance may be attributed to interactive teaching methods, greater access to learning resources, and increased learner motivation associated with ICT use. These findings are consistent with Mutwiri et al. (2017), who reported that ICT enhances students' understanding of abstract concepts, motivates learners, and improves academic performance by providing interactive learning experiences and timely feedback during classroom instruction.

School Administration's Support on ICT Tools Integration influence learners' performance in Kiswahili Literature

The researcher sought to examine school administration support for ICT integration and identify implementation challenges, and the findings are presented in Table 4.2.

Table 1.2: Challenges Teachers Encounter in Integrating ICT Tools

	SD	D	N	A	SA
There are limited Kiswahili Literature ICT programmes	2.08	2.50	6.67	8.00	80.75
There is limited research work written in Kiswahili on the internet	35.00	18.75	0.00	4.58	41.67
There are limited Kiswahili ICT resource persons	77.92	5.00	0.00	10.00	7.08
Most students are unable to access ICT facilities while at home	13.75	36.67	0.00	32.50	17.08

Table 1.2 indicates that teachers encountered several challenges in integrating ICT tools in the teaching of Kiswahili Literature. The findings reveal that a majority (88.75%) of Kiswahili teachers agreed that there are limited Kiswahili Literature ICT programs, while 46.25% reported inadequate Kiswahili research materials available online. However, most teachers (82.92%) disagreed that there is a shortage of Kiswahili ICT resource persons, suggesting that expertise may be relatively available. Additionally, 49.58% of teachers indicated that students experience difficulties accessing ICT facilities at home. The observation implies that inadequate digital content and limited learner access to technology hinder effective ICT integration in Kiswahili Literature. These challenges suggest the need for school administration support through development of digital resources, improved ICT infrastructure, and enhanced learner access. The findings agree with Nyambane and Nzuki (2019), who established that inadequate ICT infrastructure and limited digital resources remain major barriers to effective ICT integration in educational institutions.

In conclusion, the findings demonstrate that successful ICT integration in Kiswahili Literature is affected by the availability of relevant digital content, access to ICT facilities, and adequate institutional support. Although teachers have access to ICT expertise, limitations in digital resources and learners' access to technology continue to restrict effective implementation. Therefore, addressing these challenges through investment in Kiswahili digital materials, improved ICT infrastructure, and equitable access to technology is essential for enhancing ICT-supported teaching and improving learners' academic performance.

Table 1: School Administration's Support on ICT Integration

	SD	D	N	A	SA	Correlation	P-value
The school principal has availed sufficient Kiswahili ICT infrastructure in school	28.33	22.08	12.92	22.5	14.17	0.0721	0.2658
The school has formulated and adopted an ICT policy in the school	22.92	5.00	2.50	7.92	61.67	0.1422*	0.0276
The school principal is at the forefront in championing for the integration of ICT in teaching and learning	25.00	2.92	2.50	3.75	65.83	0.1519*	0.0186
Students have adequate access to ICT facilities and materials	31.25	22.92	9.17	17.92	18.75	0.0665	0.3046
The principal encourage Kiswahili teachers to integrate ICT in teaching and learning in school	11.67	5.42	2.08	3.75	77.08	0.1292*	0.0455

** indicates 5% level of significance*

Table 1.3 presents findings on school administration support for ICT integration and its relationship with learners' performance in Kiswahili Literature. The findings indicate that school administration plays an important role in promoting ICT adoption. A majority of teachers (69.59%) agreed that their schools had formulated and adopted ICT policies, while 69.58% indicated that principals actively championed ICT integration in teaching and learning. Additionally, 80.83% reported that principals encouraged Kiswahili teachers to integrate ICT in classroom instruction. However, availability of ICT infrastructure and students' access to ICT facilities remained relatively low, with only 36.67% of teachers agreeing respectively. This observation implies that while leadership support and policy frameworks are relatively strong, inadequate resources may constrain effective ICT implementation.

The relationship between administrative support and learners' performance was examined using Pearson's product-moment correlation coefficient (r). The results show that ICT policies had a statistically significant but weak positive relationship with learners' performance ($r = 0.1422$, $p = 0.0276$). Principals' leadership in ICT promotion also demonstrated a statistically significant weak positive relationship with learners' performance ($r = 0.1519$, $p = 0.0186$), while principals' encouragement of teachers to use ICT had a statistically significant weak positive relationship ($r = 0.1292$, $p = 0.0455$). Since all the exact p -values were below the 0.05 significance level, the relationships were statistically significant. However, the small r values indicate weak effect sizes, suggesting that administrative support is positively associated with learners' performance, but other factors may also influence academic outcomes. The findings therefore support the conceptual relationship in which administrative support facilitates ICT integration, which may subsequently contribute to improved academic performance.

These findings agree with Harris et al. (2014), who established that principals' leadership and support are critical in ensuring the success of educational programs. Similarly, Abuyeka (2014) noted that school administrators act as change agents whose leadership promotes the adoption of innovative teaching strategies. Ngatia (2015) also emphasized the importance of school ICT policies in guiding technology implementation. Further support is provided by Jepkemoi et al. (2022), who found a strong relationship between administrative support and ICT integration in teaching and learning.

CONCLUSION



The study concludes that ICT integration positively influences learners' performance in Kiswahili Literature in public secondary schools in Athi River Sub-County, Machakos County. The findings demonstrate that learners' academic achievement improved significantly after being taught using ICT tools, as evidenced by the increase in mean scores from the pre-test to the post-test. However, successful ICT integration depends greatly on the level of support provided by school administration. Administrative support through formulation of ICT policies, principals' active leadership, and encouragement of teachers to use ICT significantly contributed to improved learner outcomes. Despite this positive influence, challenges such as inadequate Kiswahili digital resources, limited ICT programmes, insufficient infrastructure, and restricted access to ICT facilities among students hinder effective implementation. Therefore, the study concludes that strengthening school administrative support, investing in ICT infrastructure, developing Kiswahili digital learning materials, and enhancing teacher capacity are essential strategies for maximizing the benefits of ICT integration and improving learners' performance in Kiswahili Literature.

RECOMMENDATIONS FOR PRACTICE AND POLICY

1. School administrators and education policymakers should strengthen ICT integration policies in secondary schools by providing adequate ICT infrastructure, Kiswahili digital resources, and internet connectivity.
2. The Ministry of Education should provide continuous ICT training programmes for Kiswahili teachers to enhance effective integration of technology in teaching and learning.

RECOMMENDATIONS FOR FURTHER STUDIES

1. Further studies should examine ICT integration and Kiswahili Literature performance in other counties and school contexts in Kenya.
2. Future studies should investigate the influence of teachers' ICT competence, learners' digital readiness, and availability of Kiswahili digital content on ICT integration.

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