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Influence of Teachers' Attitude on the Use of Digital Devices in Kiswahili Content Delivery in Public Primary Schools in Kisumu East Sub-County, Kenya

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Abstract

This study examined the relationship between teachers' attitude towards digital devices and Kiswahili content delivery in public primary schools in Kisumu East Sub-County, Kisumu County, Kenya. The study adopted a mixed-methods descriptive survey design. Data were collected from Teachers of Kiswahili and Heads of Institutions using questionnaires and interviews and analysed using descriptive statistics, Pearson correlation and regression analysis. The findings showed that teachers generally had a favourable attitude towards digital devices. A strong, positive and statistically significant relationship was established between teacher attitude and Kiswahili content delivery ($r = .733, p < .001$). Regression analysis indicated that teacher attitude explained 53.7 per cent of the variation in Kiswahili content delivery, while 46.3 per cent remained unexplained by the model. The study concluded that positive teacher attitude is important for digital-supported Kiswahili instruction but requires supportive conditions, including adequate digital resources, teacher competence, infrastructure and technical support. The study recommends strengthening practical digital training, improving access to relevant Kiswahili digital resources and creating supportive school environments for technology integration.

Key words: Content delivery, digital devices, Kiswahili, primary schools, teacher attitude.



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INTRODUCTION

The adoption of digital devices has increasingly shaped classroom instruction by providing opportunities for interactive teaching and access to diverse instructional resources. In primary schools, devices such as tablets, computers and projectors enable teachers to present content through text, audio, visual materials and interactive activities, thereby broadening the ways in which learners engage with instructional content (OECD, 2023; UNESCO, 2023). However, the availability of digital devices does not necessarily translate into effective classroom use. Their educational value depends on how appropriately they are integrated into teaching practices, the availability of supporting infrastructure, teachers' capacity and the relevance of digital resources to learning needs (UNESCO, 2023). In Kenya, government initiatives such as the Digital Literacy Programme have sought to expand access to digital technologies in schools, although challenges related to infrastructure, teacher preparedness and effective classroom integration continue to affect technology-supported instruction (Ministry of Education, 2023).

Teachers occupy a central position in determining whether, when and how digital devices are incorporated into classroom instruction. Beyond access to technology, teachers' perceptions, confidence and attitude may shape their willingness to adopt and meaningfully integrate digital devices into teaching practices (Scherer et al., 2021). A teacher who perceives digital technology as useful and manageable may be more inclined to incorporate it into lesson preparation, presentation and learner activities, whereas a less favourable attitude may limit its classroom use. This consideration is particularly important in Kiswahili instruction, where effective content delivery may require the integration of text, audio, visual and interactive resources to support language learning.

Understanding teachers' attitude towards digital devices is therefore important in explaining how available technologies are translated into actual Kiswahili content delivery in primary schools. Teachers with a favourable attitude towards digital technology are generally more willing to integrate it into teaching, although a positive attitude alone may not guarantee regular or effective use (Akram et al., 2022; Márquez-Baldó et al., 2025). Studies have reported challenges related to teachers' training, digital skills, confidence and access to appropriate resources (Omito & Kembo, 2022; Shikomera et al.,

2023). At the same time, positive attitudes towards digital technology have been reported among primary school teachers.

Digital devices can provide learners with access to audio, visual and interactive materials that support listening, speaking, reading and writing. Research has associated teachers' attitude and digital competence with the use of technology in language instruction (Pratolo & Solikhati, 2021; Tran et al., 2023). Oyieno et al. (2024) examined the relationship between digital competence and language instruction among ECDE teachers in Kenya. The study did not specifically examine teachers' attitude towards digital devices and Kiswahili content delivery in public primary schools.

Kiswahili teaching may particularly benefit from the appropriate use of digital devices because the subject requires learners to engage with language through different forms of communication and representation. The use of digital devices can provide opportunities for presenting Kiswahili content through audio, visual, textual and interactive materials. However, existing Kenyan studies have largely examined issues such as teacher training, digital competence, access to technology and general technology integration. While some studies report favourable teacher attitudes towards digital technology, others indicate that positive attitudes do not necessarily correspond with actual classroom integration. Studies conducted in other contexts or at different educational levels cannot adequately explain this relationship among public primary school teachers in Kisumu East Sub-County. This study therefore focused on the relationship between teachers' attitude towards digital devices and Kiswahili content delivery in public primary schools in Kisumu East Sub-County, Kisumu County, Kenya.

The study sought to determine the relationship between teachers' attitude towards digital devices and Kiswahili content delivery in public primary schools in Kisumu East Sub-County, Kisumu County, Kenya. The study question was: What is the relationship between teachers' attitude towards digital devices and Kiswahili content delivery in public primary schools in Kisumu East Sub-County, Kisumu County, Kenya?

Theoretical Framework

The study was guided by the Technology Acceptance Model (TAM) developed by Davis (1989), with insights

from its later extension, Technology Acceptance Model 3 (TAM3) by Venkatesh and Bala (2008). TAM proposes that users' acceptance of technology is influenced mainly by perceived usefulness and perceived ease of use. When teachers perceive digital devices as useful for teaching and relatively easy to use, they may be more inclined to accept and use them in classroom practice.

TAM3 extends this explanation by incorporating additional factors that influence perceived usefulness and perceived ease of use and technology acceptance and use. In the study, teachers' attitudes towards digital devices are viewed as an important factor that may be associated with their use of such devices in Kiswahili content delivery. The theory is therefore relevant because it provides a basis for examining whether teachers' perceptions and attitudes towards digital devices correspond with the way Kiswahili content is delivered.

LITERATURE REVIEW

Teachers' Attitude towards Digital Devices

Teachers' attitude towards digital devices encompasses their perceptions, feelings and willingness to use technology in teaching. International research generally suggests that teachers who perceive digital technology as useful and manageable are more likely to consider incorporating it into classroom practice. Kärkkäinen and Välimäki (2022) found that perceived usefulness and ease of use were important in teachers' integration of technology in lesson preparation and classroom teaching. Márquez-Baldó et al. (2025) similarly found that favourable attitudes towards ICT were associated with greater use of technological resources.

Positive attitude does not always result in extensive classroom use. Štemberger and Čotar (2021) reported positive teacher attitude alongside relatively limited practical use of technology. This distinction is important because it suggests that attitude is only one part of the process. Teachers may value digital devices but still experience difficulties using them because of limited skills, inadequate resources, insufficient support or classroom conditions.

African studies present a similar pattern. Research in Tanzania and other African contexts indicates generally favourable pedagogical attitudes towards digital technology, but implementation remains constrained by access to appropriate resources, teacher preparedness and professional development (Hamad et al., 2024). Akram et

al. (2022), in a systematic review, similarly identified teacher perceptions and competence alongside infrastructural and institutional factors as important considerations in technology integration.

Teachers' Attitude and Digital Technology in Language Teaching

Digital devices have particular potential in language teaching because they allow teachers to combine written, spoken, visual and interactive forms of learning material. Such resources may provide opportunities for learners to listen to language models, practice communication, read digital texts and engage with interactive activities.

Tran et al. (2023) found generally positive teacher attitudes towards ICT in language teaching, indicating that teachers' perceptions are relevant to technology use in language classrooms. Pratolo and Solikhati (2021) also reported positive attitudes towards digital literacy and the use of computers and smartphones for accessing digital information. These findings suggest that teachers' attitude may support the incorporation of digital resources into language instruction. Teachers' perceptions of technology are shaped alongside factors such as technological competence, training, infrastructure and pedagogical considerations. A teacher may have a positive attitude towards digital devices without necessarily using them extensively or appropriately in language teaching (Akram et al., 2022).

Digital Devices and Kiswahili Content Delivery

Digital devices may support Kiswahili content delivery by enabling teachers to use a combination of written texts, audio materials, images, videos and interactive activities. Such resources may enrich the presentation of Kiswahili language and literature content and provide learners with varied ways of engaging with the subject.

Oyieno et al. (2024) established a relationship between digital competence and language instruction among ECDE teachers in Kenya. Although this provides useful evidence on digital technology and language teaching, the study focused on ECDE teachers and digital competence rather than primary school teachers' attitude towards digital devices. It therefore does not directly address the relationship examined in the present study.

Competence concerns what teachers are able to do with technology, whereas attitude concerns how they perceive and respond to it. A teacher may possess digital skills but

have limited willingness to use them, or may have a favourable attitude but lack the competence or resources required for effective use. The present study consequently focuses specifically on teachers' attitude towards digital devices and their relationship with Kiswahili content delivery.

METHODOLOGY

The study adopted a mixed-methods approach using a convergent design. The quantitative strand employed a descriptive survey design to examine the relationship between teachers' attitude towards digital devices and Kiswahili content delivery, while the qualitative strand used semi-structured interviews to obtain contextual information from Heads of Institutions (HOIs).

A mixed-methods approach was appropriate because it enabled the study to combine quantitative evidence with qualitative perspectives to provide a more comprehensive understanding of the research problem (Creswell & Creswell, 2023).

The quantitative and qualitative data were collected during the same phase of the study and analysed separately. Quantitative data were analysed using descriptive and inferential statistics, while qualitative data were analysed thematically, and findings were

integrated. Qualitative findings provided contextual explanations for the patterns identified in the quantitative data.

The target population comprised 520 teachers of Kiswahili distributed across 65 public primary schools in Kisumu East Sub-County, Kisumu County, and 65 Heads of Institutions (HOIs). Teachers of Kiswahili constituted the main respondents because they were directly involved in the delivery of Kiswahili content. HOIs provided complementary information on school administration, availability of digital resources, teacher support and the implementation of digital technologies.

Simple random sampling was used to select Kiswahili teachers from the target population. Proportional allocation was applied across the different zones to ensure adequate representation of teachers according to their distribution within the sub-county. The sample size of 226 teachers of Kiswahili was determined using the Taro Yamane (1967) formula. In addition, 20 HOIs were purposively selected because of their administrative responsibilities and knowledge of digital device use in their schools. The intended sample therefore comprised 246 respondents. Usable questionnaires returned were 218, representing a response rate of 96.5 per cent. All 20 selected HOIs participated in the interviews.

Table 1: Target Population, Sample Size and Response Rate

Respondents	Target Population	Sample Size	Responses	Response Rate (%)
Kiswahili Teachers	520	226	218	96.5
Heads of Institutions	65	20	20	100.0
Total	585	246	238	96.7

The study used two research instruments: a structured questionnaire and a semi-structured interview guide. The questionnaire was administered to Kiswahili teachers, while the interview guide was used with HOIs. The questionnaire employed a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The structured format facilitated consistent measurement and quantitative analysis of respondents' views. A semi-structured interview guide was used to collect qualitative data from HOIs. The guide contained open-ended questions addressing teachers' use of digital devices, availability of digital resources, school-level support, implementation challenges and factors affecting Kiswahili content delivery. They complemented the questionnaire by providing administrative and contextual

perspectives on the use of digital devices in Kiswahili teaching, obtaining clarification where necessary.

Content and face validity were established through expert review. Experts in Educational Psychology and the Science Department of Rongo University assessed the clarity, relevance, adequacy and suitability of the items. Their recommendations were used to revise ambiguous, repetitive or irrelevant items before the instruments were administered. The instruments were also piloted among respondents with characteristics similar to those of the study population but who were not included in the final sample. Necessary revisions were made before the main data collection.

The internal consistency of the questionnaire items measuring teachers' attitude towards digital devices was assessed using Cronbach's alpha coefficient. The questionnaire produced a reliability coefficient of $\alpha = .79$, indicating satisfactory internal consistency. Cronbach's alpha should be interpreted in relation to the nature and structure of the scale rather than treated as the sole evidence of reliability (Sijtsma & Pfadt, 2021).

Before data collection, the researchers obtained the required ethical approval and research authorisation from the relevant authorities. Permission was also sought from the appropriate education offices and participating school administrations. Participants were informed about the purpose of the study and the nature of their participation before data collection. Completed questionnaires were checked for completeness and prepared for coding. Interviews were conducted using the semi-structured guide and, with participants' permission, were recorded and transcribed for analysis.

Quantitative data obtained from the questionnaires were coded and analysed using descriptive and inferential statistics. Frequencies, percentages, means, and standard deviations were used to summarise respondents' characteristics and responses to the questionnaire items. Pearson's product-moment correlation coefficient was used to determine the relationship between teachers' attitude towards digital devices and Kiswahili content delivery. Regression analysis was also conducted to examine the statistical association between teachers' attitude towards digital devices and Kiswahili content delivery.

Qualitative interview data were analysed thematically. The emerging themes were then compared with the quantitative findings. Integration occurred at the interpretation stage. Convergent findings were interpreted together, while divergent findings were considered in relation to the contextual information provided by the participants, consistent with the principles of convergent mixed-methods research (Creswell & Creswell, 2023).

Ethical approval and research authorisation were obtained from the relevant authorities before data collection. Participation was voluntary, and respondents were informed about the purpose of the study, the nature of their participation and their right to decline participation or withdraw without penalty. Permission and informed consent were obtained, and confidentiality was maintained by excluding participants' names and other identifying information from the research instruments and final report.

FINDINGS AND DISCUSSION

Teachers' Attitude towards Digital Devices and Kiswahili Content Delivery

The research question sought to establish the relationship between teachers' attitude towards digital devices and Kiswahili content delivery in public primary schools in Kisumu East Sub-County, Kisumu County, Kenya. Data were obtained from Teachers of Kiswahili through questionnaires and complemented by qualitative information from Heads of Institutions (HOIs).

Table 2: Teachers' Attitude towards Digital Devices and Kiswahili Content Delivery

Statement	SA f (%)	A f (%)	N f (%)	D f (%)	SD f (%)	M	SD
I am willing to use digital devices to improve Kiswahili content delivery	118 (54.1)	61 (28.0)	13 (6.0)	18 (8.3)	8 (3.7)	4.21	1.11
I enjoy using digital devices during Kiswahili lessons	78 (35.8)	53 (24.3)	60 (27.5)	14 (6.4)	13 (6.0)	3.78	1.18
I believe that digital devices make Kiswahili lessons more interactive	104 (47.7)	90 (41.3)	12 (5.5)	6 (2.8)	6 (2.8)	4.28	.90
I feel comfortable when I use digital devices during Kiswahili lessons	90 (41.3)	55 (25.2)	68 (31.2)	4 (1.8)	1 (.5)	4.05	.92
I am confident when using digital devices to teach Kiswahili content	112 (51.4)	61 (28.0)	5 (2.3)	32 (14.7)	8 (3.7)	4.09	1.21
I am optimistic that using digital devices influences Kiswahili content delivery	72 (33.0)	50 (22.9)	64 (29.4)	13 (6.0)	19 (8.7)	3.66	1.24

The findings indicate that teachers held generally favourable attitudes towards the use of digital devices in Kiswahili content delivery. The highest mean score was recorded for the view that digital devices make Kiswahili lessons more interactive ($M = 4.28$, $SD = 0.90$), followed by willingness to use digital devices to improve content delivery ($M = 4.21$, $SD = 1.11$) and confidence in using them to teach Kiswahili ($M = 4.09$, $SD = 1.21$). The findings suggest that teachers recognised the instructional value of digital devices and were disposed towards their use in Kiswahili lessons. Enjoyment of using digital devices recorded a lower mean ($M = 3.78$), with 27.5 per cent of teachers remaining neutral. 31.2 per cent were neutral about their comfort in using the devices.

The qualitative findings reinforce the interpretation. HOI 2 reported that teachers were willing to use digital devices because they simplified lesson delivery and attracted learners' attention, while HOI 5 observed increased learner participation when videos and pictures were incorporated into Kiswahili lessons. These observations provide a practical explanation for the high rating given to lesson interactivity. They also indicate that teachers' positive perceptions were informed by classroom experiences rather than by the presence of technology alone. The use of multimedia resources appears to have been valued where it enhanced learner attention and participation.

This finding is comparable with Tran et al. (2023), who reported generally positive teacher attitudes towards ICT in language teaching. Pratolo and Solikhati (2021) similarly found positive attitudes towards digital literacy and the use of computers and smartphones for accessing digital information. However, the present study provides a more specific context by linking teachers' attitudes to Kiswahili content delivery in public primary schools. The finding also accords with Kärkkäinen and Välimäki (2022), who identified perceived usefulness and ease of use as important considerations in teachers' adoption of technology. Márquez-Baldó et al. (2025) likewise found that favourable attitudes towards ICT were associated with greater use of technological resources.

These responses suggest that teachers could recognise the pedagogical benefits of digital technology without necessarily experiencing the same level of ease or enjoyment in its use. This distinction is important because favourable perceptions do not necessarily indicate extensive or effective classroom application. Štemberger and Čotar (2021) reported a similar pattern, noting that teachers may express positive attitudes towards technology while making relatively limited practical use of it. Their findings suggest that attitudes represent only one component of technology integration, alongside competence, resources, institutional support and classroom conditions.

The findings are also consistent with the Technology Acceptance Model, particularly its emphasis on perceived usefulness and perceived ease of use. Teachers' strong ratings for interactivity, willingness and confidence indicate favourable perceptions of the usefulness of digital devices. The comparatively lower ratings for comfort and enjoyment, however, suggest that recognising usefulness does not necessarily imply that technology is easy to use. This distinction has practical significance for technology integration in Kiswahili teaching. Teachers may be willing to use digital devices but still require opportunities to develop practical competence and confidence through sustained exposure and professional support.

Taken together, the findings indicate that teachers were receptive to the use of digital devices in Kiswahili content delivery, particularly because of their perceived contribution to lesson interactivity, learner attention and participation. At the same time, the neutral responses on comfort and enjoyment show that positive attitudes alone may be insufficient to support sustained classroom integration. The implication is that efforts to strengthen digital delivery of Kiswahili should combine teacher readiness with practical training, functional digital resources, reliable infrastructure and appropriate technical support. Such conditions may help teachers translate favourable perceptions of digital devices into consistent and meaningful classroom practice.

Table 3: Correlation Between Teachers' Attitude Towards Digital Devices and Kiswahili Content Delivery

Variables	<i>r</i>	<i>p</i> -value	coefficient of determination
Teachers' attitude and Kiswahili content delivery	.733	< .001	.537

The correlation analysis revealed a strong positive and statistically significant relationship between teachers' attitude towards digital devices and Kiswahili content delivery, $r = .733$, $p < .001$. The result indicates that teachers with a more favourable attitude towards digital devices tended to report better Kiswahili content delivery. The strength of the association is substantial and suggests that teacher attitude is an important factor to consider when examining digital technology integration in Kiswahili instruction.

Regression Analysis

Pearson correlation was $r = .733$, hence the coefficient of determination was $R^2 = (.733)^2 = .537$. Approximately 53.7 per cent of the variance in Kiswahili content delivery was statistically associated with teachers' attitude towards digital devices. The remaining 46.3 per cent may be associated with other factors not included in the model, including access to devices, teacher training, digital competence, technical support, school leadership, infrastructure and availability of appropriate digital Kiswahili materials.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.733	.537	.535	.681

The model summary shows a strong relationship between teachers' attitude and Kiswahili content delivery ($R = .733$). The R^2 value of .537 indicates that the model accounts for 53.7 per cent of the variance in the

dependent variable. The adjusted R^2 of .535 remains almost identical to the unadjusted value, suggesting that the explanatory value of the model remains stable after adjustment for sample size and the number of predictors.

Table 5: ANOVA for the Regression Model

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	116.592	1	116.592	250.814	< .001
Residual	100.408	216	0.465		
Total	217.000	217			

The ANOVA result indicates that the regression model was statistically significant, $F(1, 216) = 250.81, p < .001$. This means that the model containing teachers' attitude towards digital devices provides a statistically significant prediction of variation in Kiswahili content delivery compared with a model containing no predictor. The regression result strengthens the correlation finding because it demonstrates that teachers' attitude explains a substantial proportion of the observed variation in Kiswahili content delivery.

CONCLUSION AND RECOMMENDATIONS

Conclusion: The study concludes that teachers generally had a favourable attitude towards digital devices in Kiswahili content delivery. The quantitative findings showed positive perceptions of their usefulness and ability to make lessons interactive, although some teachers expressed neutral views on comfort and enjoyment. The study established a strong, positive and statistically significant relationship between teacher attitude and Kiswahili content delivery ($r = .733, p < .001$).

Regression analysis showed that teacher attitude explained 53.7 per cent of the variation in content delivery, while 46.3 per cent remained attributable to other factors. The findings indicate that positive attitude is important but insufficient on its own. Effective digital integration also depends on teacher competence, access to devices and relevant Kiswahili digital content, infrastructure, technical support and school leadership. The findings support the Technology Acceptance Model

by demonstrating the relevance of perceived usefulness and ease of use in teachers' acceptance of digital devices. Effective integration therefore requires both teacher readiness and supportive school conditions.

Recommendations: The Ministry should strengthen digital integration by providing devices alongside reliable infrastructure, connectivity, technical support and relevant Kiswahili digital materials. Practical digital training should also be incorporated into teacher professional development.

Teacher training institutions should strengthen practical digital pedagogy to enable Teachers of Kiswahili to confidently select and integrate technology into appropriate learning activities. School management should ensure access to digital devices, technical support and opportunities for teachers to share effective technology-supported teaching practices. Teachers should strengthen their digital competence and use digital resources purposefully according to lesson objectives and learner needs.

Stakeholders should address factors beyond teacher attitude, including priority given to infrastructure, device availability, connectivity, technical support, teacher workload and relevant Kiswahili digital content. Future researchers should examine other factors influencing Kiswahili content delivery and employ longitudinal or other appropriate designs to provide stronger evidence regarding causal relationships.

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