SJ Education Research Africa
Vol. 2 No.10 (2025): October 2025 Issue
https://doi.org/10.51168/geg4f367
Original Article

Effect of teachers' orientation about digital pedagogy on contemporary classroom challenges in selected secondary schools in Katabi town council, Wakiso District, Uganda. A cross-sectional study.

Racheal Kizza*, Dr. Denis Katusiime
University of Kisubi

Abstract

Background

Secondary schools within urbanizing areas are shifting toward digital tools and methods in the classroom, and this shift is gaining momentum. This study examined the effect of teachers' orientation about digital pedagogy in the face of contemporary classroom challenges in selected secondary schools in Katabi Town Council, Wakiso District, Uganda.

Methodology

The study employed a cross-sectional research design, incorporating both quantitative and qualitative approaches. The study population was 130 participants, with a sample size of 97 respondents. Data was collected using questionnaires and an interview guide. Quantitative data were sorted, coded, and entered into the computer program known as SPSS version 29. Qualitative data were analyzed using content analysis.

Results

The majority (30.2%) were aged below 25 years, followed by those aged 25–34 years at 28.6%. The remaining age groups were 35–44 years (17.5%), 45–54 years (12.7%), and above 55 years (11.1%). The teachers' orientation toward digital pedagogy had a statistically significant and positive effect on mitigating contemporary classroom challenges, with a standardized beta coefficient of 0.430 and a p-value of .000. And 18.5% of the variation in contemporary classroom challenges was explained by teachers' orientation toward digital pedagogy. There was a high level of agreement, suggesting that teachers see some academic benefits to using digital methods.

Conclusion

Teachers' orientation about digital pedagogy significantly influences their ability to address contemporary classroom challenges in secondary schools within Katabi Town Council.

Recommendation

The Ministry of Education and Sports, together with local governments, should integrate digital pedagogy into pre-service teacher training curricula to build foundational ICT skills.

Keywords: *Teacher's Orientation, Digital Pedagogy, Contemporary Classroom, Katabi Town Council, Wakiso District.*
Submitted: *August 01, 2025* ***Accepted:*** *September 20, 2025* ***Published:*** *October 02, 2025*
Corresponding Author: *Racheal Kizza**
Email: rachealk408@gmail.com
University of Kisubi

Background of the study

Globally, the integration of digital pedagogy into education has evolved over several decades, particularly gaining momentum in the late 20th and early 21st centuries. The rise of information and communication technologies (ICTs) has redefined how knowledge is created, shared, and applied in classroom settings. The adoption of digital pedagogy began with simple computer-assisted instruction and has now advanced into complex digital learning environments utilizing artificial intelligence, cloud computing, and virtual classrooms (Selwyn, 2016). Institutions in developed countries began investing in ICT infrastructure as early as the 1990s, with countries like Finland, Singapore, and the United States leading in developing national strategies for digital learning integration (OECD, 2020).

In Africa, the adoption of digital pedagogy has been more gradual due to infrastructural, economic, and policy-related constraints. However, efforts such as the African Union's Continental Education Strategy for Africa (CESA 2016–2025) emphasize the integration of ICT in education as a driver of access, equity, and quality (African Union, 2016). Several African countries, including Kenya, Rwanda, and South Africa, have developed digital learning frameworks, initiated teacher training in ICT, and introduced e-learning platforms. Despite these efforts, challenges such as limited connectivity, inadequate teacher digital skills, and high costs

https://doi.org/10.51168/geg4f367
Original Article

of ICT equipment persist across much of Sub-Saharan Africa (Isaacs, 2018).

In East Africa, countries have made varied progress in embedding digital pedagogy. Rwanda is often cited as a success story in digital education due to its Smart Education policy and one-laptop-per-child initiative. Kenya has developed a competency-based curriculum (CBC) that emphasizes ICT integration in teaching and learning (Wanjala & Ng'ang'a, 2021). In contrast, Uganda has faced slower progress in digital pedagogy adoption due to limited funding, poor internet infrastructure in rural areas, and inconsistent teacher preparedness. According to the Uganda Communications Commission (UCC), internet penetration in Uganda remains below 30% in many rural and peri-urban areas, creating a significant digital divide (UCC, 2022).

Uganda has acknowledged the need to transform education through digital means. The Ministry of Education and Sports (MoES) developed the Education Digital Agenda Strategy (2021–2025) to guide the integration of ICT in all aspects of education. The strategy promotes the use of e-learning platforms, digital instructional materials, and teacher capacity-building in ICT pedagogy (MoES, 2021). Despite policy intentions, the implementation is often undermined by infrastructural deficits, especially in public schools where electricity supply and internet access remain unreliable (NCDC, 2020). Moreover, digital teaching is still largely urban-centered, limiting its reach and effectiveness in many schools outside Kampala and major municipalities. Locally, in Katabi Town Council, Wakiso District, a rapidly urbanizing area with a mix of government-aided and private secondary schools, the push toward digital pedagogy is visible but uneven. While some schools have adopted basic digital teaching tools such as projectors, computer labs, and online platforms like Zoom and Google Classroom (especially during the COVID-19 pandemic), others still rely on traditional chalk-and-talk methods due to resource limitations and lack of trained personnel (Wanjala & Ng'ang'a, 2021). This study examined the effect of teachers' orientation about digital pedagogy in the face of contemporary classroom challenges in selected secondary schools in Katabi Town Council, Wakiso District, Uganda.

Methodology

Research Design

The research adopted a cross-sectional survey design and employed both quantitative and qualitative approaches.

Area of Study

The study was conducted in three selected secondary schools located in Katabi Town Council, Wakiso District: School A, School B, and School C. Katabi Town Council has experienced rapid educational expansion and increasing government and NGO interest in ICT integration in education. Katabi Town Council was therefore selected as the area of study because it represents a setting where digital pedagogy is both a policy priority and a practical challenge.

Study population

The study population consisted of 130, namely:100 teachers, 20 students, and 10 PTA members in the three selected secondary schools that participated in the study. These are well-defined groups with the desirable characteristics of interest in the study. On the other hand, the qualitative sample involved the students and PTA members as key respondents who would provide deeper insights about the research study.

Sample size determination

The sample size from the above population was selected using the Krejcie and Morgan (1970) table. The sample size determination suggests a sample size of 97 based on a population of 130.

Table 1: Shows the Sampling Frame

Category	Population	Sample	Sampling technique
Teachers	100	75	Simple random
Students	20	15	Purposive
PTA member	10	7	Purposive
Total	**130**	**97**	

Source: Primary Data (2025)

Sampling techniques

Simple random sampling

Simple random sampling was employed because it allows each member of the population to have an equal chance of being selected. Data was then collected from as large a percentage as possible of this random subset. In order to create a simple random sample, the researcher involved defining the population, choosing the sample size, listing the population, assigning numbers to the units, finding random numbers, and finally selecting the sample.

https://doi.org/10.51168/geg4f367
Original Article

Purposive sampling
This was employed to select key informants such as headteachers, ICT coordinators, and senior teachers. In this case, the focus of the study was on the effect of digital pedagogy on contemporary classroom challenges, which required insights from school personnel who are directly involved in pedagogical planning, ICT implementation, or school-level decision-making.

Data sources
This was collected using both primary and secondary data sources.

Primary data sources
Surveys and interviews served as primary data sources for this study, aligning with contemporary research methodologies (Mertens, 2014). These primary data collection methods allow for the direct capture of firsthand experiences, opinions, and behaviors related to the research topic (Creswell, 2014).

Secondary data sources
Attendance records and document analysis serve as secondary data sources in this study, complementing primary data collection efforts and adhering to contemporary research practices (Yin, 2017).

Data collection instruments
Questionnaire
Self-administered questionnaires were distributed specifically to students, parents, and teachers. **Interviews**
A face-to-face interview is a form of conversation that employs verbal questioning and an answer format initiated for specific purposes of obtaining relevant information and data (Babbie, 2007).

Data quality control
Validity
To ensure validity, the Content Validity Ratio (CVR) or index was calculated. The questionnaires were subjected to judgment by the content experts, who judged the validity based on their experience, and the Content Validity Index (CVI) was calculated by the scores 'Very relevant', 'Relevant', 'Fairly relevant' (somewhat relevant), and 'Not relevant'. The content validity takes at least two judgments (Waghmare, 2003), and the index obtainable is judged by 0.70 as the borderline of accepted results that renders the instrument (questionnaire) highly valid. The Content Validity Index (CVI) was calculated, with a threshold of 0.7 or higher deemed appropriate, aligning the instruments with the study's objectives (Amin, 2005).
Content Validity Index (CVI) =

Given that CVI is above 0.70, the questionnaire was considered suitable for collecting data (Amin, 2005).

Reliability of Instruments
Reliability analysis
A pilot test was conducted to find out the reliability of the research questions. Responses in each question were evaluated to find out whether there were any inconsistencies to establish the degree of internal consistency of the data captured by questionnaires.

Procedure for data collection
Upon approval of the research proposal, an introductory letter was obtained from the School of Graduate Studies and Research, which served as formal authorization to conduct the study within the selected secondary schools. This letter was presented to the headteachers of the targeted schools in Katabi Town Council to seek permission and schedule appropriate dates for data collection. The pilot study was conducted involving a small group of respondents from a school outside the main study sample, but with similar characteristics. Necessary revisions were made based on the feedback received, and the reliability coefficient was calculated to confirm that the instruments met acceptable standards. The data collection phase was conducted over approximately three weeks, allowing ample time for follow-up in case of incomplete responses or rescheduling due to school activities.

Data Processing and Analysis of Data
Data collected from the field underwent a systematic process of cleaning, coding, and entry to ensure accuracy and consistency before analysis. Quantitative data were cleaned to eliminate incomplete or inconsistent responses, then coded and entered into a computer using Statistical Package for Social Sciences (SPSS), Version 29, for analysis.
Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize demographic characteristics and general response trends. In addition, inferential statistics, particularly regression analysis, were employed to examine the relationships between independent variables (teachers' orientation on digital pedagogy) and the dependent variable (contemporary classroom challenges).
For qualitative data, the study adopted content analysis as proposed by Kakooza (1996). This method allowed the researcher to interpret the underlying meaning of responses obtained from open-ended questions and interviews with key informants. The process involved sorting statements, opinions, and ideas based on content, followed by the identification of response prototypes, recurring patterns, key concepts, and significant issues raised by respondents.
The researcher then organized the qualitative data into thematic categories guided by the study's specific

https://doi.org/10.51168/geg4f367
Original Article

objectives. These categories captured insights on teachers' experiences with digital pedagogy, perceived classroom challenges, and contextual barriers or enablers to effective technology integration. This triangulation of both quantitative and qualitative findings ensured a more nuanced understanding of how digital pedagogy influences classroom dynamics in the selected secondary schools.

Informed consent

All the participants consented to this study.

Results

Response Rate

Table 2 shows the response Rate

Questionnaires	Frequency	Percentage
Questionnaires filled in and returned	63	84%
Questionnaires not returned	12	16%
Number of questionnaires distributed	**75**	**100%**

Source: Field Research (March, 2025)

The participants were selected by simple random and purposive sampling techniques. Upon the return of these questionnaires, 63 respondents returned the questionnaires. This accounted for an 84% response rate, with the 16% remaining 16% failing to return the questionnaires even after a follow-up by telephone calls. On the other hand, qualitative data were obtained using the interview guide, and a total of 22 interviewees were expected to participate in the study. However, a total of 12 participants were able to turn up, with the remaining number failing to turn up. The response rate for the turn-up for the qualitative data interviews was 54.5%. This is attributed to having some officials being immersed in government duties and being unable to comply with the researcher's needs at the moment. The study achieved a response rate of 84% and 54.5% for quantitative and qualitative data collection, respectively, which is considered sufficient for the generalizability of the study findings.

Demographic characteristics of respondents

This data was presented in the form of tables containing frequencies and percentages.

Age of the respondents

Table 3 shows the age Bracket of the Respondents

Age	Frequency	Percent (%)
Below 25 years	19	30.2
25-34 years	18	28.6
35-44 years	11	17.5
45-44 years	8	12.7
Above 55 years	7	11.1
Total	**63**	**100.0**

Field Research: March 2025

Table 3 shows the distribution of respondents based on their age brackets. The majority (30.2%) were aged below 25 years, followed closely by those aged 25–34 years at 28.6%. The remaining age groups were 35–44 years (17.5%), 45–54 years (12.7%), and above 55 years (11.1%).

The largest proportion of respondents (30.2%) is below 25 years, indicating a significant presence of youthful participants, most likely fresh graduates or early-career teachers. A combined total of 58.8% (37 respondents) are between the ages of 25 and 34 years, suggesting that more than half of the sample are in the early stages of their teaching careers.

Conversely, only 23.8% of the respondents fall within the 45 years and above category, suggesting relatively fewer senior or older educators within the sampled schools. The least represented group is those above 55 years (11.1%), possibly nearing retirement or in administrative roles with limited classroom interaction. The dominance of younger teachers (especially those below 35 years) in the sample could imply a higher potential for openness to digital pedagogy, given that this age group is typically more

https://doi.org/10.51168/geg4f367

digitally literate and adaptive to technological trends. This youth-skewed demographic may also mean that digital interventions in pedagogy are more likely to be embraced and utilized effectively in addressing contemporary classroom challenges. On the other hand, the smaller proportion of older respondents may reflect a slower adoption rate or reluctance toward digital tools due to generational gaps in technological familiarity. This age distribution could influence the level of digital integration in classrooms and the effectiveness of digital pedagogy across different schools.

Table 4 shows the Academic background.

Academic qualification	Frequency	Percentage (%)
Diploma	14	22.2
Bachelor's Degree	37	58.7
Master's Degree	12	19.0
Total	**63**	**100.0**

Source: Field Data (March, 2025)

Table 4 shows that 58.7% (37) held a Bachelor's Degree, while 22.2% (14) had a Diploma, and 19.0% (12) possessed a Master's Degree. The dominance of Bachelor's Degree holders (58.7%) suggests that the majority of secondary school teachers in the selected schools meet the standard academic requirement for teaching at this level.

The presence of Master's Degree holders (19.0%) implies a fair proportion of teachers with advanced training, which may enhance their capacity to innovate in teaching practices, including the use of digital pedagogy. The 22.2% of Diploma holders indicates that a notable number of teachers may have foundational teaching qualifications but might require further training or support to effectively engage with evolving digital methods in education. The academic profile of respondents reflects a workforce that is generally well-qualified, with over three-quarters (77.7%) holding at least a Bachelor's Degree or higher. This indicates a strong potential for embracing and implementing digital pedagogy to tackle contemporary classroom challenges, such as learner disengagement, large class sizes, and curriculum delivery inefficiencies. Teachers with higher academic qualifications, particularly those with Master's Degrees, may have had more exposure to digital tools and contemporary teaching strategies during their training. Consequently, they may serve as catalysts for digital transformation within their schools. However, the presence of a considerable number of Diploma holders also suggests the need for targeted capacity-building programs, particularly in ICT integration and digital instructional design, to ensure equitable and effective adoption of digital pedagogy across the teaching workforce.

Table 5 shows the level of Experience of the Respondents.

Years of Experience	Frequency	Percent (%)
Less than 5 years	23	36.5
5-10 years	19	30.2
10-15 years	13	20.6
More than 15 years	8	12.7
Total	**63**	**100.0**

Source: Field Research: March 2025

Out of 63 respondents, 36.5% (23) had less than 5 years of teaching experience, making them the largest group. This was followed by 30.2% (19) with 5–10 years, 20.6% (13) with 10–15 years, and 12.7% (8) with more than 15 years of experience.

The majority of respondents (66.7%) had less than 10 years of teaching experience, indicating a relatively young teaching workforce. Teachers with more than 10 years of experience constituted only 33.3%, which suggests fewer long-serving or highly experienced teachers in the selected schools. The small percentage (12.7%) with more than 15 years of experience may indicate staff turnover, transfers, or retirements, limiting the number of veteran educators in these schools.

The predominance of teachers with less than 10 years of experience may have implications for the implementation of digital pedagogy in addressing contemporary classroom challenges: Less experienced teachers are often more digitally literate, adaptive, and open to innovation, making

https://doi.org/10.51168/geg4f367

them more likely to embrace and apply digital tools in teaching and classroom management.

On the other hand, they may lack the classroom management experience and pedagogical depth needed to fully contextualize digital tools to meet varied learner needs or solve deeper classroom challenges. Meanwhile, the smaller proportion of more experienced teachers could present an opportunity for peer learning and mentorship, where their classroom experience can complement the digital fluency of younger teachers, provided there is collaboration and continuous professional development.

Contemporary Classroom Challenges in Selected Schools in Katabi Town Council, Wakiso District

Table 6 presents descriptive statistics derived from Likert scale responses to assess teachers' perceptions of contemporary classroom challenges associated with digital pedagogy. The scale ranged from 1 (Strongly Disagree) to 5 (Strongly Agree), with mean values indicating the general level of agreement and standard deviations showing variability in responses.

Table 6: Showing the descriptive statistics for Contemporary Classroom Challenges

	Mean	Std. Deviation
Digital pedagogy increases the workload for teachers	3.00	1.244
Teachers lack sufficient training on the use of digital tools	3.51	1.045
Digital pedagogy is more effective than traditional teaching methods	3.27	1.081
Limited access to the internet and digital devices affects digital pedagogy	3.41	1.057
The cost of digital tools is a challenge in implementing digital pedagogy	3.35	1.050
I require more professional development in digital pedagogy	3.63	.768
Some students struggle with using digital tools in learning	2.97	1.107
Cybersecurity risks (e.g., hacking, cyberbullying) are a concern in digital learning	3.25	.999

(Source: Field Research March 2025)

Table 6 shows that the highest mean score was obtained with the statement that "*I require more professional development in digital pedagogy"* (Mean = 3.63, SD = 0.768). This indicates strong agreement among respondents, with low variation, suggesting a consistent call for more training.

Whereas with the statements *"Teachers lack sufficient training…"* (Mean = 3.51; SD= 1.045) and *"Limited access to internet and digital devices…"* (Mean = 3.41, SD= 1.057) also scored relatively high, revealing systemic gaps in infrastructure and capacity building.

The belief that *"Digital pedagogy is more effective…"* scored (Mean= 3.27; SD= 1.081), reflecting moderate agreement, suggesting that while digital tools are viewed positively, challenges hinder full effectiveness.

Whereas *"Digital pedagogy increases workload"* and *"Some students struggle with using digital tools"* both hover around 3.00, showing neutral to moderate agreement, and more variability, especially in the workload statement (SD = 1.244).

Both *"Cost of digital tools"* (Mean = 3.35) and *"Cybersecurity risks"* (Mean = 3.25) are moderately agreed upon, indicating that financial and safety concerns are also important considerations in adopting digital pedagogy.

These results underscore that while teachers acknowledge the potential and value of digital pedagogy, several practical challenges hinder its seamless integration into classrooms. The high demand for professional development (Mean = 3.63) suggests that even tech-savvy teachers still feel inadequately prepared, highlighting a pressing need for capacity-building initiatives. Infrastructure limitations, such as internet access and the cost of digital tools, are significantly affecting the rollout of digital strategies.

The neutral views on workload and student readiness may reflect mixed experiences, where some teachers/students adapt well while others face difficulties. The concern about cybersecurity risks, though moderate, signals the need for digital safety protocols and awareness in the learning environment.

Meanwhile, during the interview, some respondents stated that;

In contemporary society, studies have become a challenge because almost everything has to be monetized and modernized. For instance, the gadgets themselves are very expensive, and once acquired, maintenance also becomes an issue, hence posing a threat to the majority who are poor in the Katabi Town Council.

It is also evident that some learners and teachers have not been exposed to digital pedagogy, and thus, it is an issue to get them acquainted with it. On the other hand, those who had some form of exposure find it easier, hence creating some gap among the learners, yet also resulting in a new problem for the teachers to master.

The findings clearly show that digital pedagogy is recognized as beneficial, yet its full effectiveness is constrained by training gaps, infrastructure limitations, and access-related issues. Therefore, for digital pedagogy to

https://doi.org/10.51168/geg4f367

effectively address contemporary classroom challenges, stakeholders should invest in continuous teacher training, affordable access to digital tools and the internet, and robust digital safety policies.

These arguments are thus in line with the ideas written down by Kaahwa (2013), who stated that most schools in Uganda perform poorly simply because most of the times the students have not been exposed to the practical learning bit as most schools have no laboratories and the required apparatus and in most cases students in such schools end up in exams only to face unfamiliar tools hence panic those results into failure.

Teachers' orientation about digital pedagogy in the face of contemporary classroom challenges

Table 7 presents descriptive statistics measuring teachers' orientation toward digital pedagogy. Responses were collected using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), and analyzed using means and standard deviations to reflect the central tendencies and variations in perception.

Table 7: Showing the descriptive statistics for teachers' orientation about digital pedagogy

	Mean	Std. Deviation
I am confident in using digital tools for teaching	2.95	1.023
I integrate digital pedagogy in my teaching regularly	3.06	.982
Digital pedagogy enables my students' academic performance to improve	3.13	1.055
Digital pedagogy fosters creativity and critical thinking among students	2.87	.942
Digital pedagogy helps in addressing students' individual learning needs	2.81	1.006
The use of digital pedagogy is compatible with the current curriculum	2.97	.897
Online learning platforms support effective teaching and learning	2.60	1.040
Digital pedagogy enhances students' engagement in learning	2.78	.975

Source: Field Research (March, 2025)

The highest Mean Score was obtained from the statement that: *"Digital pedagogy enables my students' academic performance to improve"* (Mean = 3.13, SD = 1.055). This reflects a high level of agreement, suggesting teachers see some academic benefits to using digital methods.

With general confidence and integration statements that is: *"I am confident in using digital tools…"* with (Mean = 2.95; SD= 1.023) and *"I integrate digital pedagogy regularly…"* with (Mean = 3.06; SD= 0.982) suggest a neutral to slightly positive orientation, but not a strong embrace, indicating inconsistent or developing confidence.

Statements like *"Fosters creativity"* (Mean = 2.87) and *"Compatible with the current curriculum"* (Mean = 2.97) point to mixed perceptions, with teachers possibly facing practical challenges in applying digital tools within traditional curricular frameworks.

The lowest Mean Score was obtained from the statement that: *"Online learning platforms support effective teaching and learning"* (Mean = 2.60, SD = 1.040). This suggests disagreement or uncertainty about the effectiveness of online platforms, possibly due to access, usability, or contextual factors such as limited infrastructure or student readiness.

The overall findings indicate that while teachers recognize the potential benefits of digital pedagogy, such as enhancing academic performance (Mean = 3.13) and improving engagement (Mean = 2.78), their current level of confidence and orientation remains moderate or neutral.

The generally low to moderate means across most statements show that digital pedagogy has not yet been fully embraced or integrated into daily teaching practice in these schools. The results reflect a cautious orientation toward digital pedagogy among teachers in Katabi Town Council. Although they recognize some academic advantages, there is a lack of strong confidence, consistent integration, and clear belief in its alignment with the curriculum.

In an interview, the respondents made an affirmation that;

The concept of digital pedagogy is something new, but it has been very fortunate that the majority of the teachers in Katabi Town Council, Wakiso district have had several opportunities to come to learn about it, master it, and practice it; thus, it is highly believed that the teachers are not naïve about it.

Another respondent clarified how digital pedagogy has helped many students and teachers to become very creative, as they are now able to continue with learning even while

https://doi.org/10.51168/geg4f367

away from school, able to do research and connect with the world with just a click of a button.

Inferential Statistics on the Teacher's orientation about digital pedagogy in the face of contemporary classroom challenges

Model Summary

This model summary presents the results of a simple linear regression analysis, where the independent variable is *Teacher Orientation* and the dependent variable is *Contemporary Classroom Challenges*. Table 8 provides the *R, R2,* adjusted *R2,* and the standard error of the estimate, which can be used to determine how well a regression model fits the data.

Table 8 shows Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.430[a]	.185	.172	5.06876

a. Predictors (Constant), Teacher Orientation

Source: Field Research March 2025)

The R-value (Correlation Coefficient) is 0.430. This value indicates a moderate positive relationship between teacher orientation in digital pedagogy and classroom challenges. As teacher orientation improves, the level of classroom challenges tends to decrease (or be better managed), though not perfectly.

The R Square (Coefficient of Determination) obtained as indicated in the table is 0.185. This means that 18.5% of the variation in classroom challenges can be explained by teacher orientation in digital pedagogy. While this is a meaningful contribution, it also suggests that 81.5% of the variance is explained by other factors not included in the model, such as infrastructure, student attitudes, school leadership, and internet access.

The regression analysis reveals that teacher orientation in digital pedagogy has a statistically moderate effect on addressing contemporary classroom challenges. Specifically, teachers who are better oriented in the use of digital pedagogy are more likely to manage or mitigate classroom challenges such as learner engagement, differentiation, access to learning resources, and inclusive teaching. However, the modest R Square suggests that digital orientation alone is not sufficient to fully address classroom issues.

Table 9 shows the Coefficients.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.235	2.804		5.789	.000
	Teachers' orientation about digital pedagogy	.439	.118	.430	3.722	.000

a. Dependent Variable: Contemporary Classroom Challenges

Source: Field Research (March 2025)

When teachers' orientation is at zero, the predicted level of classroom challenges is 16.235 units. This is the baseline level of challenges without the influence of digital pedagogy orientation. On the other hand, from the table above, for every one-unit increase in teachers' orientation toward digital pedagogy, the level of contemporary classroom challenges increases by 0.439 units. This may initially seem counterintuitive, but it could suggest that as teachers become more oriented toward digital pedagogy, they also become more aware of classroom challenges related to implementation, such as a lack of infrastructure, student engagement issues, or training gaps. The Standardized Beta ($\beta = 0.430$) implies a moderate positive relationship between the two variables. With the T-value = 3.722, p = .000; Since $p < 0.05$, the coefficient is statistically significant, meaning teacher orientation has a meaningful effect on classroom challenges. There is a statistically significant positive relationship between teachers' orientation toward digital pedagogy and contemporary classroom challenges. As teachers become more digitally oriented, challenges do not necessarily decrease — instead, challenges may become more visible or arise due to gaps between pedagogical knowledge and school infrastructure, learner preparedness, or administrative support.

https://doi.org/10.51168/geg4f367
Original Article

Discussion

Teachers' orientation about digital pedagogy in the face of contemporary classroom challenges

Results from the regression analysis revealed that teachers' orientation toward digital pedagogy had a statistically significant and positive effect on mitigating contemporary classroom challenges, with a standardized beta coefficient of 0.430 and a p-value of .000. This finding underscores the critical role of teacher preparedness, training, and professional development in managing emerging pedagogical complexities associated with the integration of digital tools.

These results are consistent with the work of Koehler and Mishra (2009), who emphasized that effective implementation of digital pedagogy depends not only on access to technology but also on teachers' readiness, understanding, and professional development in using these tools. The positive influence demonstrated in the current study echoes the TPACK framework (Mishra & Koehler, 2006), which posits that the intersection of technological, pedagogical, and content knowledge is essential for successful technology integration in teaching. Teachers with stronger orientations toward digital pedagogy are more adept at applying these intersecting domains to respond to challenges such as learner disengagement, poor instructional flow, and classroom management difficulties.

The findings also align with Redecker (2017) and Selwyn (2012), who noted that inadequately trained teachers often experience frustration, poor student engagement, and stress, factors that exacerbate classroom challenges. In contrast, well-oriented teachers, as observed in this study, are better positioned to manage digital environments and adapt their instructional strategies to accommodate diverse learners. Tondeur et al. (2017) reinforce this by demonstrating that comprehensive orientation helps teachers address specific classroom problems, including large class sizes, limited interaction, and differentiated learning needs.

In the context of Sub-Saharan Africa, and Uganda in particular, these findings contribute empirical evidence to the argument by Nawire and Wamuyu (2020) that despite improvements in access to digital tools, poor orientation continues to hinder effective pedagogical transformation. The statistically significant relationship found in this study fills part of the contextual and empirical gap by directly linking teacher orientation with measurable classroom outcomes in a low-resource, real-world setting.

The discussion also finds resonance in Beetham and Sharpe's (2013) observation that a teacher's comfort and familiarity with digital tools are pivotal in creating effective learning environments. The current findings show that such familiarity is not incidental but must be cultivated through intentional orientation programs. Darling-Hammond et al. (2017) further argue that continuous professional development equips teachers to integrate digital tools more effectively, which supports this study's implication that training should not be one-off but sustained.

Interestingly, this study also reflects the limitations in theoretical grounding and methodological rigor observed in the literature. As noted by Koehler & Mishra (2009), many studies rely on broad models like TAM or TPACK without tailoring them to the socio-educational realities of low-resource settings. This study responds to that critique by using a quantitative design that establishes a statistically significant effect, thereby contributing to the methodological gap by employing correlational analysis to validate the impact of teacher orientation in Uganda's secondary schools.

Furthermore, the results bolster the findings of Byungura et al. (2021), who observed in Ugandan classrooms that structured teacher training improved digital integration and classroom effectiveness. This connection emphasizes the importance of contextualized, skill-based training programs for digital pedagogy, especially in areas like Katabi Town Council, where infrastructure may be limited but the need for innovation in teaching remains pressing.

Conclusion

Based on the findings of the study, it is concluded that digital pedagogy, particularly in the areas of teachers' orientation, has a statistically significant effect on addressing contemporary classroom challenges in secondary schools within Katabi Town Council, Wakiso District. The conclusions are presented in line with each specific objective:

The study concludes that teachers' orientation toward digital pedagogy has a statistically significant effect on contemporary classroom challenges. Inferential statistics showed a good fit in the regression model, with $F(353.845, 25.692) = 13.850$, $p < 0.0005$, indicating that teachers who are properly oriented in the use of digital tools and approaches are better equipped to manage and address emerging challenges such as student disengagement, instructional delays, and large class sizes.

Recommendation

Integrate Digital Pedagogy into Pre-Service Teacher Education; The Ministry of Education and Sports, through the National Teacher Training Curriculum, should embed digital pedagogy as a core component of pre-service teacher education. This will ensure that all trainee teachers acquire foundational skills in using digital tools and platforms before entering the teaching profession.

Provide Continuous Professional Development (CPD) for In-Service Teachers; There is a need to institutionalize mandatory, termly digital pedagogy training programs for in-service teachers. These sessions should focus on

equipping teachers with up-to-date digital skills, emerging instructional technologies, and effective strategies for integrating ICT into subject content delivery.

Facilitate Schools with Digital Teaching and Learning Resources; To improve teachers' ability to apply digital pedagogy effectively, the Ministry and local governments should facilitate schools with free or subsidized digital gadgets such as laptops, tablets, projectors, and smart boards. Provision of such tools will eliminate digital disparities among schools and promote inclusive access to technology-enhanced instruction.

Establish and Equip Functional ICT Laboratories in All Secondary Schools; Local governments and school boards should prioritize the establishment of fully functional computer laboratories stocked with sufficient and up-to-date equipment. These facilities should be accessible to both students and teachers to support lesson preparation, delivery, digital research, and self-directed learning.

Monitor and Evaluate Digital Pedagogy Implementation; Education standards bodies should regularly monitor and assess the extent and effectiveness of digital pedagogy adoption in schools. This can be achieved through structured performance reviews, school-based assessments, and integration of digital literacy benchmarks into inspection reports.

Promote a Supportive Policy Environment for ICT in Education; The Ministry should develop and enforce comprehensive ICT-in-Education policies that address infrastructure development, capacity building, internet connectivity, cybersecurity, and maintenance of digital equipment in schools.

Acknowledgement

I am profoundly grateful to Almighty God for the strength, wisdom, and perseverance granted to me throughout this research dissertation. My heartfelt appreciation goes to my supervisor, Bro. Dr. Denis Katusiime, whose expert guidance, insightful feedback, and unwavering support have been instrumental in shaping the direction and quality of this work.

I extend my sincere thanks to the faculty and staff of the School of Graduate Studies and Research at the University of Kisubi for fostering an environment conducive to academic inquiry and personal development.

To my family and friends, your patience, love, and encouragement have been a constant source of strength and inspiration. Your unwavering belief in me has made this journey not only possible but meaningful.

List of Abbreviations

CESA Continental Education Strategy for Africa
ICT Information and Communication Technology
MoES Ministry of Education and Sports
NCDC National Curriculum Development Centre
OECD Organization for Economic Co-operation and Development
TPACK Technological Pedagogical and Content Knowledge
UNEB Uganda National Examinations Board
UNESCO United Nations Educational, Scientific, and Cultural Organization
UPE Universal Primary Education
USE Universal Secondary Education

Source of funding

The study did not receive any funding or a grant.

Conflict of interest

The author declares no conflict of interest.

Author contributions

Racheal Kizza was the principal investigator.
Dr. Denis Katusiime supervised the research project.

Data availability

Data is available upon request.

Author biography

Racheal Kizza holds a master of Arts in Educational Leadership from the University of Kisubi.

Dr. Denis Katusiime is a lecturer at the University of Kisubi.

References

1. African Union. (2016). Continental Education Strategy for Africa (CESA 2016-2025). Addis Ababa: African Union Commission.
2. Amin, M. E. (2005). Social science research: Conception, methodology, and analysis. Kampala: Makerere University Printery.
3. Babbie, E. R. (2007). The practice of social research (11th ed.). Belmont, CA: Thomson Wadsworth.
4. Beetham, H., & Sharpe, R. (Eds.). (2013). Rethinking pedagogy for a digital age: Designing for 21st-century learning (2nd ed.). Routledge. https://doi.org/10.4324/9780203078952
5. Byungura, J. C., Hansson, H., & Ruhinda, B. (2021). Digital learning practices and readiness in secondary schools in Uganda. Education and Information Technologies, 26(4), 4465-4487.
6. Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Thousand Oaks, CA: Sage Publications.
7. Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). Effective teacher professional

development. Learning Policy Institute. https://doi.org/10.54300/122.311
8. Isaacs, S. (2018). Survey of ICT and Education in Africa: A Summary Report, Based on 53 Country Surveys. infoDev/World Bank.
9. Kakooza, T. (1996). An introduction to research methodology. Kampala: The New Vision Printing and Publishing Corporation.
10. Koehler, M. J., & Mishra, P. (2009). What is technological pedagogical content knowledge (TPACK)? Contemporary Issues in Technology and Teacher Education, 9(1), 60-70.
11. Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. Educational and Psychological Measurement, 30(3), 607-610. https://doi.org/10.1177/001316447003000308
12. Mertens, D. M. (2014). Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods (4th ed.). Thousand Oaks, CA: Sage Publications.
13. Ministry of Education and Sports (MoES). (2021). Education Digital Agenda Strategy 2021-2025. Kampala: Government of Uganda.
14. Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for integrating technology in teacher knowledge. Teachers College Record, 108(6), 1017-1054. https://doi.org/10.1111/j.1467-9620.2006.00684.x https://doi.org/10.1177/016146810610800610
15. National Curriculum Development Centre (NCDC). (2020). ICT in Education Policy Framework. Kampala: NCDC Publications.
16. Nawire, H., & Wamuyu, P. (2020). Technology readiness and ICT integration in Uganda's public secondary schools. African Journal of Educational Technology, 12(3), 47-OECD. (2020). Education in the Digital Age: Healthy and Responsible Use of Technology for Children and Adolescents. Paris: OECD Publishing.
17. Redecker, C. (2017). European framework for the digital competence of educators: DigCompEdu. Luxembourg: Publications Office of the European Union.
18. Selwyn, N. (2012). Education in a digital world: Global perspectives on technology and education. Routledge. https://doi.org/10.4324/9780203108178
19. Tondeur, J., Scherer, R., Siddiq, F., & Baran, E. (2017). A comprehensive framework to support ICT integration in education: A literature review. Educational Technology Research and Development, 65(4), 975-996.
20. Uganda Communications Commission (UCC). (2022). Quarterly Market Performance Report: Q4 2022. Kampala: UCC.
21. Wanjala, M., & Ng'ang'a, G. (2021). ICT Integration in Kenya's Competency-Based Curriculum: Opportunities and Challenges. East African Journal of Education and Social Sciences, 2(3), 40-49.
22. Yin, R. K. (2017). Case study research and applications: Design and methods (6th ed.). Thousand Oaks, CA: Sage Publications.

SJ Education Research Africa
Vol. 2 No.10 (2025): October 2025 Issue
https://doi.org/10.51168/geg4f367
Original Article

PUBLISHER DETAILS:

SJC PUBLISHERS COMPANY LIMITED

Catergory: Non Government & Non profit Organisation
Contact: +256 775 434 261 (WhatsApp)
Email: info@sjpublisher.org or studentsjournal2020@gmail.com
Website: https://sjpublisher.org
Location: Scholar's Summit Nakigalala, P. O. Box 701432,Entebbe Uganda, East Africa