

Communication strategies in faculty's use of technology

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Abstract: This qualitative study examines how faculty members and administrators in Ugandan universities use digital technologies to support teaching, collaboration, and professional development. A total of 34 participants were interviewed to explore their communication practices and the extent to which digital tools facilitate or hinder academic interaction. Thematic analysis identified five key themes. First, Digital Communication Platforms in Teaching highlights the widespread use of informal platforms such as WhatsApp as substitutes for official learning management systems. Second, Communication for Collaborative Learning emphasizes the role of digital tools in promoting intra- and inter-departmental collaboration despite inconsistent platform use. Third, Multimodal Communication Strategies illustrates the use of video, voice notes, and text-based communication to accommodate diverse student needs and technological limitations. Fourth, Communication for Professional Development underscores the importance of peer-led digital resources and informal learning communities in enhancing faculty digital literacy. Finally, Challenges of Effective Communication include digital inequality, information overload, and platform fragmentation. The findings reveal adaptive strategies in response to institutional and infrastructural constraints. While digital tools expand communication opportunities, stronger institutional coordination and policy support are needed to bridge digital divides and optimize their effectiveness in low-resource higher education contexts.

Keywords: communication strategies; technology integration; higher education; professional development; teaching

1. Introduction

In the evolving landscape of higher education, effective communication has become increasingly dependent on the use of digital technologies [1–3]. The shift from traditional communication modes to technology-mediated interactions has transformed how faculty members collaborate, teach, and engage with both peers and students [4–6]. As institutions strive to improve the quality of education, the strategic use of technology to facilitate clear, timely, and inclusive communication has emerged as a vital component of academic success.

In many developing contexts, such as Uganda, the integration of technology in higher education is often shaped by infrastructural, institutional, and pedagogical challenges [7]. Yet, faculty members continue to find innovative ways to leverage digital tools ranging from learning management systems and video conferencing platforms to instant messaging apps and social media to bridge communication gaps and foster collaboration. Understanding how these technologies are used not just as instructional

tools but as communication enablers is essential for enhancing teaching effectiveness and institutional cohesion.

This qualitative study investigates the communication strategies employed by faculty members and administrators in Ugandan universities to leverage digital technologies for teaching, collaboration, and professional development through the following research question:

How do faculty members utilize technology for strategic communications within academic settings?

Digital communication platforms such as email, WhatsApp, Zoom, Microsoft Teams, and learning management systems (LMSs), have significantly changed how academic staff communicate with students and colleagues. Several studies highlight that these platforms improve efficiency, allow asynchronous interactions, and offer multiple formats for engagement [8–10]. In particular, synchronous tools like Zoom facilitate real-time interaction, while asynchronous tools enable flexibility, especially during disruptions like the COVID-19 pandemic [11, 12]. However, most literature tends to focus on the availability and use of these tools [7, 13], rather than exploring how faculty strategically use them for different communication needs, or how institutional and contextual factors shape these decisions. This leaves a gap in understanding the nuanced, user-driven communication practices that emerge in specific educational contexts, such as in African universities.

Effective communication is critical to both collaborative faculty work and student-centered teaching. Research indicates that digital tools can foster collaboration by reducing geographical and temporal barriers [14–16]. Collaborative platforms encourage knowledge sharing and co-teaching, especially in multidisciplinary or team-based environments. Despite this, few studies deeply examine how communication tools are chosen and adapted to fit collaborative academic workflows, particularly in institutions with limited digital infrastructure [6, 17]. The focus has largely been on student outcomes or content delivery, with insufficient attention to the communication strategies behind successful academic collaboration.

Modern communication in education often involves multimodal approaches, combining text, audio, video, and visuals to enhance engagement and comprehension [18–20]. Faculty who integrates multimodal communication through video feedback, infographics, and interactive platforms tend to create more engaging learning environments [21, 22]. Nonetheless, much of this research is rooted in well-resourced academic contexts. There is limited examination of how faculty in developing regions, like Uganda, creatively use or adapt available technology to enable multimodal communication. This is a critical oversight, as it underestimates the innovation required to implement such strategies in constrained environments.

Technology also supports informal and formal professional development by enabling access to webinars, peer networks, and virtual communities of practice. Studies show that communication platforms play a role in fostering continuous learning among educators [23–25]. Yet, the integration of communication strategies into professional development is often treated as secondary in the literature. What remains unclear is how faculty use these platforms to communicate about their growth, reflect on practices, and

share insights across departments or institutions, particularly in resource-constrained academic settings.

Despite the potential, challenges persist. Digital divide, lack of training, resistance to technology, and poor infrastructure can hinder effective communication [26–28]. Some faculty may rely on outdated or inefficient methods due to institutional limitations or digital literacy gaps. While these challenges are acknowledged, few studies interrogate the communication-specific impacts of these constraints, such as how they affect clarity, responsiveness, engagement, or feedback loops between faculty and students.

While the existing body of research has extensively examined technology use in teaching, very little attention has been given to its role in enabling effective communication among faculty members and administrators. Most studies either treat communication as a secondary outcome or focus narrowly on student-teacher interaction. Furthermore, there is a notable lack of research contextualized in resource-constrained environments, where technology use is shaped by different institutional, cultural, and infrastructural realities. This study addresses these gaps by exploring how faculty and administrators in Ugandan universities strategically use technology to enhance communication in teaching, collaboration, and professional growth. It contributes new insights into how communication strategies are developed, adapted, and constrained by local realities, offering a more grounded understanding of the intersection between technology and communication in higher education.

2. Theoretical framework

This study is grounded in Digital Pedagogy Theory, a contemporary and evolving framework that explores how digital technologies mediate the relational, communicative, and pedagogical practices of educators [29–31]. Unlike traditional models that focus narrowly on tool integration or instructional design, Digital Pedagogy emphasises the critical, affective, and socio-cultural dimensions of teaching and learning in digital environments [29, 32, 33]. It is particularly relevant for understanding how communication unfolds in resource-constrained, digitally fragmented academic contexts, where educators must adapt continuously to the affordances and limitations of the tools available to them.

At its core, Digital Pedagogy is not merely about the use of digital tools, but about how educators shape, challenge, and transform their communication practices in ways that are responsive to students' needs, institutional conditions, and broader social realities. Scholars like Jesse Stommel and Sean Michael Morris have emphasized that Digital Pedagogy resists a purely instrumental view of technology; instead, it views pedagogy as a relational and communicative act, one that is shaped by the technologies through which it is enacted, but not determined by them [34, 35].

Key elements of Digital Pedagogy Theory include:

Critical use of technology [36, 37]: Digital Pedagogy is not about using every new tool available, but about critically evaluating which technologies serve pedagogical goals. This includes resisting the uncritical adoption of platforms and focusing on those that enhance communication, access, and engagement.

Contextual responsiveness [34, 38]: The theory emphasizes the importance of

context—social, cultural, institutional, and technological—in shaping pedagogical decisions. Educators adapt communication strategies based on bandwidth availability, digital literacy, and student preferences.

Pedagogy before tools [34, 39]: One of its core principles is that pedagogical intention should precede technological adoption. Educators are encouraged to align their use of digital platforms (e.g., WhatsApp, Zoom, Moodle) with specific teaching and communication outcomes rather than defaulting to what is readily available.

Inclusivity and equity [40, 41]: Digital Pedagogy Theory highlights the need to address barriers to access and participation. This includes recognizing and mitigating device limitations, language barriers, and digital fatigue, especially in resource-constrained environments.

Reflexivity and ongoing adaptation [40, 42]: The theory encourages educators to be reflective and adaptable, continuously assessing the effectiveness of digital communication strategies and modifying them as needs change.

In the context of this study, Digital Pedagogy Theory provides a compelling lens to analyze how faculty members communicate with students and colleagues across a variety of digital platforms, from WhatsApp and Telegram to Zoom and learning management systems. These tools are not neutral conduits for information; they shape the tone, rhythm, and accessibility of communication. Faculty members make strategic decisions about what to communicate, how to communicate it, and through which channels, based not only on the technological affordances of the medium but also on pedagogical priorities, student realities, and relational considerations.

For example, faculty members' preference for voice notes and short videos reflects a sensitivity to students' limited data access, literacy levels, and preference for asynchronous, mobile-friendly communication. These are not random or convenience-driven choices; they are deliberate pedagogical strategies shaped by an ethic of care and accessibility. Likewise, the use of WhatsApp groups for both teaching and peer collaboration reflects the recognition that informal, flexible platforms can foster more immediate, interactive, and relationally rich communication, especially when institutional platforms are slow, unreliable, or inaccessible.

Digital Pedagogy Theory also sheds light on how professional development and collaborative learning occur through informal, peer-led networks rather than formal training programs. The sharing of tips, tools, and resources via chat groups and social media exemplifies what Digital Pedagogy scholars describe as “networked learning,” a model of professional growth rooted in dialogue, reciprocity, and co-construction of knowledge among practitioners [43, 44]. This reframes professional development not as a top-down, institutional activity but as an emergent, communicative practice deeply embedded in faculty members' everyday digital routines.

Furthermore, this theoretical lens allows for a critical understanding of the challenges and tensions that faculty experience in navigating multiple digital platforms. The fragmentation of communication, information overload, and platform fatigue are not merely logistical problems, they are symptomatic of deeper structural and institutional issues that Digital Pedagogy invites us to interrogate. By recognizing the emotional labor, cognitive demands, and contextual constraints embedded in digital communication, the

theory moves us beyond simplistic narratives of “technology adoption” toward a richer, more nuanced understanding of pedagogical adaptation and communicative resilience.

Digital Pedagogy Theory offers a comprehensive, critical, and contextually sensitive framework for examining faculty communication strategies in technology-mediated academic environments. It foregrounds intentionality, adaptation, and relationality, highlighting how educators actively negotiate the tensions between technology and pedagogy to sustain meaningful communication. By framing communication as a pedagogical act, Digital Pedagogy Theory aligns closely with the objectives of this study: to explore not only what technologies faculty use, but how and why they use them to foster connection, understanding, and collaboration in higher education.

3. Methodology

This study adopted a qualitative research design to explore how faculty members in Ugandan universities use technology to enhance effective communication in teaching and collaboration. A qualitative approach was chosen to allow an in-depth understanding of participants’ experiences, perceptions, and practices in their real-world institutional contexts. In qualitative research, the researcher is a key instrument for data collection and interpretation. The principal researcher has a background in education and communication studies and received formal training in qualitative research methods, including in-depth interviewing, reflexivity, and thematic analysis. The researcher maintained a reflexive journal throughout the study to critically examine potential biases and assumptions, and actively engaged in peer debriefing sessions to ensure consistency and credibility in interpretations.

The study was conducted across five public and private universities in Uganda, selected based on their diversity in institutional type, geographical location, and integration of educational technology. Access to the research sites was facilitated through formal permissions from university administrations. Initial contact was made via email, and followed up with phone calls and in-person visits to clarify the study’s purpose and procedures.

3.1. Sampling strategy and participant recruitment

A purposive sampling strategy was used to recruit participants with varied roles, experiences, and levels of engagement with technology in their academic work. This method was selected to ensure depth and richness of data by including information-rich cases that could speak meaningfully about the topic. The sample consisted of 34 participants: 24 faculty members and 10 university administrators. This number was appropriate for qualitative inquiry and was guided by the principle of data saturation, which was achieved when no novel data emerged. Participants were recruited through departmental heads and faculty networks. Inclusion criteria included at least one year of teaching or administrative experience and active use of at least one form of digital communication in their academic roles. The researcher had no prior supervisory or hierarchical relationship with any participants, minimizing power dynamics and bias.

While the primary focus of the research was to investigate how faculty members

utilize technology for strategic communication, the inclusion of administrators was intentional and necessary. Faculty roles do not exist in isolation; their communication strategies are often shaped by institutional expectations, administrative communication policies, and the broader digital infrastructure managed by university leadership. Administrators play a key role in shaping the technological environment, facilitating professional development, and establishing digital communication norms and practices within the institution. Including their perspectives provided a broader, systems-level understanding of the institutional conditions that influence faculty communication choices. This inclusion allowed the study to capture both bottom-up and top-down dynamics of digital communication in academic settings, thereby enriching the analysis of how strategic communication unfolds across multiple levels of the university ecosystem.

3.2. Demographic characteristics of the participants

Table 1 shows the demographic characteristics of the participants. 34 invitees participated in the study. There were 20 (58.82%) males and 14 (41.18%) females with ages ranging from 30 years and above. The majority of the participants, 23 (67.65%), are PhD degree holders. There were 10 (29.41%) administrators and 24 (70.59%) faculty. Participants having technological experience in academic work of fewer than 5 years are 08 (23.53%), between 5 and 10 years are 7 (20.59%), between 11 and 15 years are 10 (29.41%), and 16 years and above are 9 (26.47%).

Table 1. Demographic characteristics of the participants.

Variables	Male frequency (%)	Female frequency (%)	Total frequency (%)
Gender	20 (58.82%)	14 (41.18%)	34 (100%)
Age (Years)			
30–39	11 (61.11%)	7 (38.89%)	18 (52.94%)
40–49	4 (40.00%)	6 (60.00%)	10 (29.41%)
50–above	5 (83.33%)	1 (16.67%)	6 (17.65%)
Educational qualification			
Master	4 (36.36%)	7 (63.64%)	11 (32.35%)
PhD	16 (69.57%)	7 (30.43%)	23 (67.65%)
Designation			
Administrator	3 (30.00%)	7 (70.00%)	10 (29.41%)
Faculty	17 (70.83%)	7 (29.17%)	24 (70.59%)
Technological experience in academic work (Years)			
Under 5 years	4 (50.00%)	4 (50.00%)	8 (23.53%)
5–10 years	5 (71.43%)	2 (28.57%)	7 (20.59%)
11–15 years	6 (60.00%)	4 (40.00%)	10 (29.41%)
16 years and above	5 (55.56%)	4 (44.44%)	9 (26.47%)

3.3. Data collection procedures

Data were collected through semi-structured interviews, allowing for flexibility while ensuring consistency across interviews. The interviews were guided by an interview protocol developed and reviewed by two qualitative research experts for relevance and clarity. A pilot test involving three participants was conducted to refine the questions. Interviews were conducted face-to-face and online (via Zoom or WhatsApp

calls), depending on participant preference and logistical feasibility. Each interview lasted between 45 and 75 min, and took place in a quiet office or virtual environment at a time convenient to the participant, typically during mid-morning or early afternoon. All interviews were audio-recorded with consent and transcribed verbatim. Field notes and observational memos were also documented.

In qualitative research, field notes and observational memos serve as vital tools for capturing the nuances and context that are often missed through interviews or written responses alone. In this study, which investigates how faculty members utilize technology for strategic communication, these tools were particularly valuable for documenting non-verbal cues, environmental factors, and informal practices that occurred during interviews or informal interactions.

Field notes allowed the researcher to record immediate impressions, tone of voice, hesitations, and body language that gave depth to verbal data. For example, when a participant discussed frustration with institutional platforms, a sharp tone or shift in posture could signal a deeper level of dissatisfaction than words alone might convey. These observations enriched the interpretive process and contributed to a more nuanced analysis of faculty attitudes toward technology.

Observational memos, on the other hand, were used after data collection sessions to reflect on emerging patterns, contradictions, or contextual elements such as the digital tools observed in use during faculty work routines. These memos helped track the evolution of themes, note analytic hunches, and raise critical questions that informed subsequent data collection and coding decisions. They also served to record contextual constraints such as internet interruptions or platform-switching during interviews, which mirrored the very communication challenges faculty described.

Together, field notes and observational memos complemented the formal data by generating contextual, interpretive, and reflexive insights. This contributed to a richer understanding of how technology is embedded not only in what participants say, but in how they act, respond, and navigate their institutional environments—an understanding central to the aims of this study.

3.4. Analytic framework and coding process

Data were analyzed using Reflexive Thematic Analysis (RTA) as developed by Braun and Clarke [45,46]. This method was chosen for its emphasis on the researcher's active role in identifying and interpreting patterns of meaning across the dataset.

The analysis followed Braun and Clarke's six-phase process:

- (1) Familiarization with the data through repeated reading of transcripts and immersion in field notes.
- (2) Generating initial codes—coding was both inductive (data-driven) and deductive (informed by theoretical frameworks such as Media Richness Theory and TPACK).
- (3) Searching for themes—codes were clustered into potential themes using mind maps.
- (4) Reviewing themes—candidate themes were refined for coherence and distinctiveness.

- (5) Defining and naming themes—finalized themes were clearly defined and aligned with research questions.
- (6) Producing the report—themes were supported with illustrative quotes and discussed in relation to existing literature.

NVivo 15 was used as a data management tool [16, 47, 48]. It facilitated the organization and retrieval of codes and themes.

3.5. Ensuring trustworthiness

To enhance the credibility, dependability, and confirmability of the study:

- Triangulation was employed through multiple data sources (faculty, administrators) and modes (interviews, memos).
- Peer debriefing was conducted with two qualitative researchers who reviewed selected transcripts and coding patterns.
- Member checks were performed by sharing summary findings with a subset of participants for validation and clarification.
- Reflexivity was maintained using a journal to monitor the researcher's influence on data collection and interpretation.

3.6. Ethical considerations

Ethical approval was obtained from the Kampala International University Research Ethics Committee (KIU-2024-343). Written informed consent was obtained from all participants prior to interviews. Participants were assured of confidentiality, and all names and identifiers were anonymized in the reporting of results.

4. Results

Thematic analysis of the interviews yielded five core themes: Digital communication platforms in teaching, communication for collaborative learning, multimodal communication strategies, communication for professional development, and challenges of technology use. Each theme reveals the practical ways faculty use digital technologies for communication and the institutional, infrastructural, and pedagogical complexities surrounding these practices.

4.1. Digital communication platforms in teaching

Participants widely emphasized the shift toward informal platforms, particularly WhatsApp, for delivering announcements, sharing course materials, and coordinating classes. 77% of the participants mentioned WhatsApp as their main teaching communication tool. WhatsApp emerged as more than a convenience, it was described as essential in navigating slow or inconsistent institutional platforms. One lecturer stated, *“Our LMS rarely works during peak hours, so we just upload class materials to WhatsApp. Students respond faster there, too.”* Another lecturer stated, *“I’ve stopped emailing students. I send everything on WhatsApp, they actually read it.”* In addition, another lecturer explained, *“The portal is too slow and often crashes. WhatsApp is the only*

way I'm sure my students will get the information." These practices suggest a strategic repurposing of social platforms to meet teaching needs and overcome technological limitations. Email and official portals were reportedly underused, often due to low engagement or technical unreliability.

4.2. Communication for collaborative learning

Online tools such as Zoom, Google Meet, Microsoft Teams, and WhatsApp facilitated collaboration among colleagues across departments, especially during the pandemic. 55% of the participants discussed online collaboration tools; 33% specifically mentioned using WhatsApp for staff collaboration. However, collaboration was often informal, dependent on personal initiative, and subject to platform inconsistency. *"We have a staff WhatsApp group,"* one lecturer explained, *"But only a few people respond. It works well for urgent matters but not really for planning."* In contrast, some teams reported successful online coordination. *"We meet every Friday on Zoom to plan and debrief. It keeps us aligned, especially with part-time lecturers involved,"* shared another lecturer. These accounts illustrate that the success of digital collaboration is shaped more by institutional culture and digital habits than by the tools themselves.

4.3. Multimodal communication strategies

Faculty embraced diverse modes of communication, combining video, voice notes, images, and text, to meet students' varied needs. These choices were influenced by literacy levels, bandwidth constraints, and student preferences. 72% of the participants described using multimodal content regularly. *"Sometimes I send videos instead of long notes, especially for abstract concepts like research methods,"* one lecturer explained. Another lecturer stated, *"Most students prefer voice notes because they're cheaper to download and listen to offline."* Similarly, another lecturer added, *"I use pictures or infographics when I think a concept needs visual aid, students find it easier to grasp."* This shift reflects not just a pedagogical preference but a strategic response to technological and linguistic barriers in communication.

4.4. Communication for professional development

Many faculty and administrators described how digital tools enabled ongoing professional development through virtual trainings, online communities, and peer resource sharing. Interestingly, WhatsApp and Telegram were cited as key platforms for accessing micro-learning content, including recorded training videos and discussion threads. 61% of the participants mentioned using these platforms for professional development. *"We're always sharing webinar links, PDFs, even tips on how to use Google Forms or Moodle. It's how we train each other informally,"* said one participant. Another participant stated, *"I learned how to use Jamboard from a short voice note shared in our Telegram group."* Similarly, another participant explained, *"There's no formal training, but colleagues share lots of resources in the WhatsApp group. That's how I keep learning."* This bottom-up approach contrasts with traditional top-down training models, showing a move toward peer-led digital capacity building.

4.5. Challenges of technology use

While digital tools enhanced communication in many ways, participants highlighted a lot of challenges. 87% of the participants described experiencing significant communication challenges. Key issues included poor internet access and high data costs. One lecturer explained, *“Zoom meetings often fail because of a poor network, so we switch to voice calls or WhatsApp.”* Another lecturer added, *“Sometimes I have to wait until midnight to upload lecture videos because that’s when the internet is more stable and cheaper.”* Similarly, another lecturer stated, *“I avoid using video during meetings because my data finishes too quickly, and I can’t afford to top up frequently.”* Inconsistent platform use, lack of clear institutional communication policies, and information overload were other recurring issues. *“I have four different WhatsApp groups for my classes, and sometimes I forget where I posted what,”* shared one lecturer. Another lecturer noted, *“Some staff still prefer face-to-face meetings because they don’t trust digital messages to be seen.”* In addition, another lecturer explained, *“It’s exhausting juggling so many platforms, especially when none of them are officially supported.”* These comments underscore the fragmentation of communication across platforms, revealing how technology can both solve and create communication problems. Faculty also expressed fatigue from platform overload and a lack of clear digital communication policies at the institutional level.

5. Discussion

This study provides fresh insights into how faculty in Ugandan universities leverage digital technologies to enhance communication in teaching, collaboration, and professional development. While existing literature has broadly acknowledged the role of technology in supporting academic processes [15, 16], this study deepens the conversation by demonstrating how contextual adaptation, platform improvisation, and multimodal expression shape communication strategies in under-resourced, low-bandwidth higher education environments.

A notable finding is the institutional reliance on informal platforms, especially WhatsApp, as a substitute for formal learning management systems. This supports Hadi and AlShaikh-Hasan [8], who highlight how Global South educators often bypass official platforms in favor of mobile-based solutions. However, this study adds nuance by revealing that this choice is not merely about convenience but a strategic adaptation to infrastructural inefficiencies, institutional framework, and pedagogical immediacy. Faculty are not passive users of technology; they actively reshape its purpose and usage, often blurring lines between administrative, pedagogical, and social communication. From the perspective of Digital Pedagogy Theory, this demonstrates intentional and contextually responsive tool selection, where faculty prioritize platforms that foster interaction and accessibility over institutional defaults. The emphasis is not on novelty, but on pedagogical functionality, a key tenet of the theory.

Faculty employed a range of formats, video clips, voice notes, text messages, and images, to communicate complex ideas and accommodate students’ learning needs. This multimodal approach was shaped by students’ digital literacy, data constraints,

and subject complexity. These findings are consistent with studies by Li et al. [49] and Monica et al. [50], which advocate for multimodal learning design as a means to enhance engagement and address digital diversity. According to Digital Pedagogy Theory, this exemplifies inclusive and equity-oriented communication, where educators modify their practices to ensure broader participation and comprehension. The shift to voice notes and low-bandwidth formats illustrates a pedagogical decision rooted in learner-centered design, a core value of digital pedagogy.

Digital tools such as Zoom, Google Meet, and Microsoft Teams facilitated collaboration, though the findings suggest that success was often dependent on informal structures and individual initiative rather than institutional support. Some departments used regular virtual meetings effectively, while others reported fragmented and inconsistent participation. This mirrors earlier studies by Zhou et al. [20], which emphasize that digital collaboration thrives in environments where organizational culture supports open communication and shared practices. Faculty in this study navigated institutional gaps through informal WhatsApp groups, showing adaptability. Within the Digital Pedagogy framework, this represents pedagogical reflexivity, the ability to adapt and refine practices to improve collaboration, even in the absence of clear institutional infrastructure. It also highlights the need for digital leadership and policy coherence to support sustained collaboration.

Furthermore, while previous research has emphasized professional development through formal digital training [24,25], this study shows that peer-led micro-learning via chat groups and recorded sessions may offer more lasting value. Participants did not just attend webinars; they repurposed them, revisited them, and circulated them informally. This informalization of professional learning reveals a bottom-up model of digital capacity-building that remains underexplored in the literature. Digital Pedagogy Theory supports this mode of development by valuing participatory, situated learning. Faculty engagement in bottom-up professional development reflects reflexive, self-directed pedagogy, where educators co-construct knowledge in collaborative, digitally mediated environments.

While technology facilitates communication, it also introduces new barriers such as platform fatigue, digital exclusion, and message fragmentation. These findings echo concerns raised by Tembrevilla et al. [28] about the “messiness” of educational technology in practice. However, this study contributes further by exposing how such messiness is navigated creatively, through flexible strategies and localized innovations, rather than by strictly adhering to institutional digital policies. From a Digital Pedagogy standpoint, these findings underscore the importance of critical reflexivity and context-responsive decision-making. Rather than relying on uniform digital solutions, educators in this study adapted their communication practices to meet the diverse needs of their students, often in environments of limited infrastructure and policy clarity. Digital Pedagogy emphasizes that technology should not dictate pedagogy; rather, pedagogy must shape the strategic use of technology to ensure inclusivity, relevance, and learner-centered engagement. Yet, the persistence of fragmentation and fatigue also points to the limits of individual ingenuity in the absence of institutional coordination. Digital Pedagogy, while celebrating flexible and critical technology

use, also demands systemic support structures that enable sustainable, coherent, and equitable communication practices. Without such support, faculty risk burnout and miscommunication, undermining the very goals these technologies aim to serve.

Overall, this study shifts the focus from “what tools are being used” to how, why, and under what constraints those tools are used to construct meaningful communication in higher education. It offers a grounded perspective that is both practically relevant and conceptually rich, especially for educators and policy-makers working in digitally uneven academic environments.

Limitations of the study

While this study provides valuable insights into faculty communication practices in digitally mediated academic settings, several limitations are acknowledged.

Contextual and institutional specificity: The study was conducted within a limited number of institutions; as such, the findings are context-specific and may not be fully generalizable to institutions in different geographic, economic, or technological contexts. The informal and adaptive use of platforms like WhatsApp and Telegram, for example, may be more prevalent in settings with limited access to robust learning management systems or institutional digital tools.

Self-reported data and subjectivity: The study relied heavily on qualitative, self-reported data from faculty members through interviews and open-ended responses. While these narratives offer rich, firsthand accounts of experience, they are inherently subjective and may be influenced by recall bias, social desirability, or personal interpretation. The absence of triangulated data (e.g., observational or student feedback) limits the ability to fully verify or contrast these perceptions.

Focus on faculty perspectives only: This research centers exclusively on the experiences and strategies of faculty members. While this perspective is critical, it does not account for students’ perceptions of communication effectiveness, challenges, or preferences. Including student voices would have added a more holistic understanding of how digital communication strategies are received and interpreted.

Rapid technological changes: Given the constantly evolving nature of digital tools and communication platforms, the technologies discussed in the study may change or become obsolete in a short time. As a result, some findings may have a limited shelf life or may not reflect future trends in digital communication or pedagogical practices.

Limited exploration of institutional policy impact: While institutional support and platform reliability were mentioned as challenges, the study did not comprehensively examine institutional policies or leadership practices that shape digital communication norms. Understanding how policy frameworks support or hinder effective communication would have provided deeper structural insights.

Language and digital literacy considerations: Although faculty reported adapting communication styles to accommodate students’ language abilities and access levels, the study did not systematically assess language barriers or digital literacy levels among either faculty or students. These factors likely play a significant role in shaping communication strategies and deserve further investigation.

6. Conclusion

This study contributes to the growing body of literature on the role of digital technologies in enhancing communication within higher education, particularly in the context of Ugandan universities. By investigating the communication strategies employed by faculty, the study highlights the adaptive and creative ways in which digital tools are used to overcome challenges in teaching, collaboration, and professional development. It is clear from the findings that technology is not merely an external tool but is actively reshaped by users to meet the specific needs and constraints of their educational environment.

One of the key contributions of this research is the emphasis on the informal adaptation of communication platforms such as WhatsApp, despite the availability of official learning management systems. This repurposing of technology in response to institutional challenges such as poor internet connectivity and unreliable systems offers important insights for other low-resource educational settings. Furthermore, the study underscores the importance of multimodal communication strategies, not only for enhancing learning but also for addressing barriers related to literacy and bandwidth limitations.

This research also sheds light on the informal, peer-led professional development facilitated by digital communication tools. Unlike formal top-down training programs, the study reveals how faculty are building digital literacy and pedagogical capacity through shared online resources, webinars, and peer mentorship, which is an underexplored dimension of professional learning in the digital age.

However, the study also highlights significant challenges in implementing effective communication strategies, particularly the fragmentation of communication platforms and the digital divide that still exists within the academic community. These findings call for more coordinated institutional policies to ensure the equitable and efficient use of digital tools.

In conclusion, this study offers a context-specific understanding of how digital communication strategies are applied in Ugandan universities, providing both theoretical and practical insights into how technology can facilitate more inclusive, flexible, and collaborative teaching practices in similar settings. While further research is needed to explore how these strategies impact student learning outcomes and long-term institutional change, this study contributes to an emerging conversation on the nuanced role of digital tools in higher education in the Global South.

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