

# Whatsapp as Educational Infrastructure: Platform Affordances and Mobile-First Learning in Nigerian Universities

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## ABSTRACT

Educational technology discourse often positions social media as distraction from learning. However, empirical evidence from developing contexts reveals more complex realities. This mixed-methods study examines WhatsApp's role in Nigerian undergraduate education through survey data (n=229) and management interviews (n=10), employing Uses and Gratifications Theory, Social Cognitive Theory, and theoretical integration frameworks. Findings demonstrate WhatsApp's overwhelming dominance (90.8–100% familiarity; 73.3–87.5% active usage) transcending institutional types. Contrary to deficit narratives, 70.8–84.4% of students perceive social media as enhancing their studies. Educational content attracts 57.5–65.6% of users, whilst the platform facilitates group coordination, resource sharing, and peer support. Analysis through affordance theory reveals how WhatsApp's technical characteristics—low bandwidth consumption, asynchronous communication, multimedia support, group functionality—align with Nigerian contexts characterised by mobile-first internet access, economic constraints, and infrastructural limitations. The study argues that WhatsApp functions as de facto educational infrastructure compensating for institutional resource deficits. Rather than prohibiting platforms, universities should acknowledge, support, and pedagogically integrate tools students already use effectively. Design implications suggest that educational technologies targeting developing contexts must prioritise mobile optimisation, offline functionality, minimal data consumption, and alignment with existing student practices. The study contributes to platform studies, mobile learning literature, and educational technology design whilst challenging Western-centric assumptions about appropriate learning tools and offering policy recommendations for curriculum integration and digital literacy development.

**Keywords:** affordance theory; educational technology; mobile learning; Nigeria; WhatsApp

## INTRODUCTION

A student at Trinity University, Lagos, describes a familiar study routine: “When I miss a lecture, I check our course WhatsApp group. Someone usually shares notes or photos of the board. We also use it to plan group assignments, share documents, discuss ideas, and agree meeting times.” Similar accounts now circulate widely across Nigerian campuses. Together, they challenge the dominant view that social media primarily distracts students from academic work.

Despite these lived practices, educational debates often portray platforms such as Facebook, Instagram, and TikTok as threats to concentration, time management, and academic performance (Kirschner & Karpinski, 2010). As a result, institutions frequently adopt restrictive measures, ranging from outright bans to close monitoring of

student behaviour online. Such technologically deterministic responses assume that digital platforms exert uniform effects. They overlook the ways in which students actively repurpose these tools for learning, particularly in contexts where formal institutional support is limited or inconsistent.

Within this landscape, WhatsApp has become central to student communication across Nigeria. Unlike broadcast-oriented platforms driven by algorithmic feeds and curated content, WhatsApp is designed for direct messaging and group-based interaction. This distinction is crucial. A platform built for fast, low-bandwidth, and collaborative communication offers educational possibilities that differ markedly from those associated with entertainment-focused social networks. Understanding these differences is essential for assessing WhatsApp's educational role.

### Research Problem

Although WhatsApp is now deeply embedded in Nigerian higher education, systematic empirical research on its educational uses remains scarce. Many studies on social media in African educational settings focus primarily on Facebook or treat "social media" as a homogenous category (Manca & Ranieri, 2016). This broad categorisation masks important variations in platform design, functionality, and user practice. Moreover, findings derived from Western contexts often fail to translate into environments shaped by mobile-first access, economic constraints, and infrastructural instability.

A further limitation of existing scholarship is its tendency to assume that social media has predominantly negative effects on learning. Such deficit framing minimises student agency and obscures the practical strategies students employ to meet academic demands. A more nuanced understanding of WhatsApp's relevance therefore requires moving beyond generalised claims about "social media." It calls for careful attention to platform-specific affordances, contextual constraints, and actual patterns of student use.

### Research Objectives

In response to these gaps, this study aims to:

1. Document patterns of WhatsApp use among Nigerian undergraduate students across different institutional types.
2. Examine students' perceptions of WhatsApp's educational value and their modes of engagement with academic content.
3. Analyse how WhatsApp's technical affordances align with the contextual realities of Nigerian higher education.
4. Explore institutional attitudes and policy implications arising from student-driven technological practices.

### Significance of the Study

This study contributes to several scholarly and practical discussions. For platform studies, it highlights how specific affordances shape educational possibilities and the implications this holds for platform design and pedagogical adoption. For the mobile learning literature, it offers evidence from an under-represented African context and challenges Western assumptions about what counts as effective educational technology. For educational practitioners and policymakers, the study suggests that meaningful innovation may emerge not from replacing student practices but from recognising, supporting, and integrating the tools students already use effectively.

## LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Understanding how students use WhatsApp for educational purposes requires careful attention to existing research on platform affordances, mobile learning, and media-use theories. This section reviews the key debates

shaping current knowledge and outlines the theoretical framework guiding the study. It highlights what is known, what remains uncertain, and why a fresh, context-sensitive approach is necessary for Nigerian higher education.

### **Platform Affordances and Educational Technology**

The concept of affordances began in Gibson's (1979) ecological psychology, where it referred to the action possibilities that environments offer to individuals. When applied to technology, affordances describe what users can do with particular platforms based on both technical features and user capabilities (Norman, 1988). They do not reside solely in the technology or in the user's perception; rather, they emerge from the relationship between the two.

Recent social media scholarship uses affordance theory to explain why people use platforms differently. Treem and Leonardi (2013) outline four core affordances—visibility, persistence, editability, and association—while Boyd (2014) identifies persistence, replicability, scalability, and searchability as central to digital media. These frameworks, however, reflect Western-oriented analyses of platforms such as Facebook and Twitter. Their relevance to mobile messaging applications in developing contexts remains uncertain.

Moreover, existing affordance models often overlook features that matter greatly in resource-constrained settings. Data efficiency, device compatibility, offline functionality, and low-bandwidth operation are crucial considerations in many African contexts. These factors influence which platforms students adopt and how they use them for learning.

More recent work shifts the focus from cataloguing features to examining how affordances shape actual practices (Evans et al., 2017). This practice-oriented perspective is essential for understanding WhatsApp's educational role. Students rarely use platforms as designers intended; instead, they adapt tools creatively to meet academic needs within local constraints. Thus, understanding WhatsApp requires attention not only to what the platform offers, but also to how its features are used in real contexts.

### **Mobile Learning in Developing Contexts**

Research on mobile learning highlights its promise for expanding educational access in developing countries (Crompton & Burke, 2018). Mobile devices often serve as the primary or only means of digital access for populations lacking computers or stable electricity. Despite this potential, empirical evidence from African contexts remains uneven. Much of the literature relies on pilot projects, experimental interventions, or theoretical claims rather than sustained observation of students' everyday practices (Isaacs, 2012).

Studies examining actual behaviour show a more complex picture. Students use their phones mainly for communication and entertainment, with educational use emerging when circumstances demand it (Porter et al., 2016). Their platform choices reflect practical concerns—cost of data, network stability, ease of use, and what peers already use—rather than educational optimisation (Czerniewicz & Brown, 2013).

This body of research suggests that educational technology succeeds in developing contexts only when it aligns with established student practices. Institutional attempts to impose alternative platforms often fail when they do not match local realities, such as mobile-first access patterns or economic constraints (Unwin, 2015). Understanding which platforms students already use, and why, is therefore crucial for effective pedagogical integration.

### **Theoretical Framework**

This study draws on an integrated framework combining Uses and Gratifications Theory (UGT) and Social Cognitive Theory (SCT). UGT provides insight into why students choose WhatsApp over other platforms, emphasising the gratifications they seek. SCT explains how social interaction and peer behaviour shape learning within digital environments. Together, these theories enable a balanced analysis of individual motivations, social dynamics, and technological affordances.

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## Uses and Gratifications Theory

Uses and Gratifications Theory views media users as active agents who select platforms to satisfy specific needs (Katz et al., 1973). The theory identifies a range of possible gratifications, including information seeking, identity formation, social connection, and entertainment (Ruggiero, 2000). It emphasises selectivity and intentionality, contrasting with approaches that portray audiences as passive.

Contemporary research extends UGT to digital media, where users choose among diverse platforms according to expected benefits (Sundar & Limperos, 2013). Studies of social media identify gratifications such as relationship maintenance, self-expression, and content sharing. Importantly, the gratifications users expect may differ from those they actually obtain, and ongoing use reflects continued satisfaction.

In educational contexts, UGT explains why students might prefer WhatsApp to institutional platforms. WhatsApp may offer more immediate access to resources, quicker communication, stronger peer support, and lower data costs. However, UGT has limits. It focuses on individual motivations and therefore risks underplaying the role of social influence, collective practices, and environmental constraints.

## Social Cognitive Theory

Social Cognitive Theory (Bandura, 2001) addresses these limitations by emphasising the interplay between personal factors, behaviour, and environmental conditions. Central to SCT are concepts such as observational learning, self-efficacy, and outcome expectations. Students learn how to use platforms not in isolation but by observing peers, adapting shared practices, and developing confidence over time (Schunk & DiBenedetto, 2020).

SCT highlights the importance of environmental influences. In many Nigerian contexts, factors such as data costs, intermittent connectivity, and reliance on mobile phones shape which platforms students adopt. WhatsApp may become the platform of choice not simply because of individual preference but because it aligns with these environmental realities.

Recent applications of SCT to digital learning emphasise how peer behaviour within online groups shapes participation and learning (Chiu, 2021). In WhatsApp study groups, students observe how peers share notes, ask questions, and coordinate tasks. These behaviours form a model that new members adopt, creating shared norms and collective efficacy.

## Theoretical Integration

Individually, UGT and SCT offer useful but incomplete perspectives. UGT explains platform choice; SCT explains social learning. Neither, on its own, captures how technological affordances shape what users can do. Integrating these theories, as suggested by LaRose (2010), produces a more comprehensive model.

This study adopts an integrated approach in which:

- i) Platform selection reflects expected gratifications (UGT).
- ii) Usage practices develop through social observation and peer modelling (SCT).
- iii) Affordances shape what users can realistically do in their context.
- iv) Environmental constraints—such as data cost and connectivity—mediate both motivation and behaviour.

Survey items examine usage patterns, motivations, and perceived benefits. Interviews explore how students learn platform practices and how local conditions influence adoption. The analysis brings these strands together, offering a context-sensitive explanation of WhatsApp's role in Nigerian higher education.

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## METHODOLOGY

This study adopts a structured and transparent methodological approach. The aim is to understand how students and institutions in southwest Nigeria engage with WhatsApp for academic purposes. A mixed-methods design was chosen to capture both broad usage patterns and the deeper institutional reasoning behind them. The methods described below outline how data were collected, analysed, and integrated.

### Research Design

This investigation employed a sequential explanatory mixed-methods design (Creswell & Creswell, 2017). The quantitative phase provided breadth, establishing usage patterns across a sizeable student population. The qualitative phase offered depth, explaining institutional perspectives, policy motivations, and the contextual factors shaping student practices.

The study focused on undergraduate students in both faith-based and non-faith-based universities in southwest Nigeria. Although institutional religious orientation formed part of the original comparison, this article emphasises cross-institutional patterns. These patterns indicate that WhatsApp use cuts across institutional boundaries.

### Quantitative Component

**Sample:** The survey generated 229 valid responses: 120 from faith-based universities, 32 from non-faith-based universities, and 77 from students unsure of their institution's classification. Convenience sampling was used, relying on accessible university networks. Although this technique limits wider generalisation, the large and consistent patterns across institutional types strengthen the reliability of the findings.

**Instrument:** The questionnaire captured data on device ownership, platform familiarity, platform usage, content preferences, spending patterns, access conditions, and perceived academic effects. Students also reported familiarity with ten specific platforms, including WhatsApp, Facebook, Instagram, TikTok, YouTube, and Telegram.

Perceived academic impact was measured through four fixed categories: "greatly enhances," "enhances," "detracts from," and "greatly detracts from" studies. While this forced-choice structure limits nuance, it provides a clear overview of dominant sentiment.

Multiple-choice items on content preferences allowed respondents to select several categories, reflecting the mixed purposes for which students use social media.

**Analysis:** Descriptive statistics were produced using SPSS 26. The analysis focused on frequency distributions, percentages, and cross-tabulations. Chi-square tests were used to examine associations between institutional type and platform usage. Some analyses were limited by small cell counts, reducing inferential power, but the descriptive patterns remained robust.

### Qualitative Component

**Sample:** Ten semi-structured interviews were conducted with management staff from both faith-based (Anchor University) and non-faith-based institutions (Trinity University and the University of Lagos). Participants included registrars, deputy registrars, and senior officers overseeing student affairs and institutional policy.

**Procedure:** Interviews lasted between 30 and 60 minutes. All were audio-recorded with consent and transcribed verbatim. Questions examined institutional policies, enforcement strategies, attitudes toward student technology use, and experiences with WhatsApp-mediated communication.

**Analysis:** Data were analysed thematically following Braun and Clarke's (2006) approach. Initial codes were generated from repeated readings of transcripts. These codes were then grouped into broader themes such as



policy distinctions, perceptions of educational value, and institutional concerns about inappropriate content. Coding continued until thematic saturation was reached.

### **Integration Procedures**

Integration occurred at the interpretation stage. Quantitative evidence of WhatsApp's dominance raised questions about institutional policy responses. The qualitative findings provided the necessary explanations, revealing tensions between student practices and management concerns. This approach enabled both data strands to inform a cohesive interpretation.

### **Ethical Considerations**

Ethical approval was granted by the participating institutions. All participants provided informed consent after receiving clear information about the study's aims and procedures. Survey responses remained anonymous. Interview recordings were stored securely, and transcripts were fully anonymised. Institutional names are mentioned with permission.

### **Limitations**

Several limitations should be noted. Convenience sampling restricts generalisability, although consistency across institutions improves confidence. Self-reported data may contain social desirability bias and may not reflect actual academic performance. The cross-sectional design prevents causal inference. Observed associations may reflect pre-existing differences among students rather than the direct influence of WhatsApp. Longitudinal studies linking usage patterns to objective academic outcomes would strengthen future research but were beyond the scope of the present study.

## **RESULTS**

This section presents the empirical findings of the study, integrating both quantitative survey results and qualitative insights from institutional interviews. The dual approach allows for a comprehensive understanding of students' social media behaviours across different institutional types, as well as the policy environments that shape their digital practices. Quantitative data highlight patterns of platform familiarity, active usage, content preferences, and perceived academic impact, while qualitative responses from administrators provide contextual explanations for these trends. Together, these findings offer a nuanced picture of how social media—particularly WhatsApp—functions within Nigerian university settings as a tool for communication, learning, and institutional governance.

### **Quantitative Findings**

This section presents the survey data capturing patterns of digital platform usage among Nigerian university students. The analysis highlights platform prevalence, usage intensity, and variations across different institutional types. By examining these quantitative indicators, the study establishes a foundational understanding of how students engage with digital tools in their learning environments.

The findings reveal not only which platforms are most familiar but also the extent to which students integrate them into everyday academic and social practices. These patterns provide essential context for interpreting qualitative insights and for understanding the broader implications of technology adoption in higher education.

### **Overwhelming Platform Prevalence**

The survey results show a clear and consistent pattern: WhatsApp is the dominant digital platform across all institutional types. Familiarity levels reached 90.8% among faith-based students, 100% among non-faith-based students, and 94.8% among those unsure of their institutional orientation (Table 1). These figures far exceed familiarity with other platforms, underscoring WhatsApp's near-universal visibility within Nigerian university environments.

Table 1: Platform Familiarity by Institutional Type

| Platform  | Faith-Based (%) | Non-Faith-Based (%) | Uncertain (%) |
|-----------|-----------------|---------------------|---------------|
| WhatsApp  | 90.8            | 100.0               | 94.8          |
| Facebook  | 65.8            | 81.3                | 72.7          |
| Instagram | 59.2            | 75.0                | 67.5          |
| TikTok    | 53.1            | 61.7                | 57.1          |
| YouTube   | 55.0            | 75.0                | 63.6          |
| LinkedIn  | 16.7            | 25.0                | 20.8          |

Active usage—defined as regular subscription and engagement—was naturally lower than familiarity. Yet WhatsApp maintained its dominance, with 73.3% of faith-based students, 87.5% of non-faith-based students, and 77.9% of uncertain students actively using it (Table 2). No other platform approached these levels.

Table 2: Active Usage by Institutional Type

| Platform  | Faith-Based (%) | Non-Faith-Based (%) | Uncertain (%) |
|-----------|-----------------|---------------------|---------------|
| WhatsApp  | 73.3            | 87.5                | 77.9          |
| Facebook  | 40.8            | 71.9                | 54.5          |
| TikTok    | 40.6            | 50.8                | 45.5          |
| Instagram | 40.6            | 41.7                | 41.6          |
| YouTube   | 36.7            | 53.1                | 44.2          |
| Twitter/X | 14.2            | 31.3                | 22.1          |

The gap between available alternatives and actual usage suggests intentional platform selection, not a lack of options. Students demonstrably know and use multiple platforms but prioritise WhatsApp for everyday communication and academic coordination.

## Educational Content Engagement

Content preference results also reveal strong academic alignment. Educational content attracted 57.5% of faith-based students and 65.6% of non-faith-based students. Information-based content yielded even higher engagement levels (65.8% and 87.5%, respectively). These two categories—taken together—show that students actively use social media for educational and informational purposes, with WhatsApp serving as the primary channel.

Figure 1: Content Preferences by Institutional Type

#### Educational Content:

Faith-Based: 57.5%

Non-Faith-Based: 65.6%

#### Information Content:

Faith-Based: 65.8%

Non-Faith-Based: 87.5%

#### Entertainment Content:

Faith-Based: 70.8%

Non-Faith-Based: 71.9%

Although entertainment content also attracted high engagement—consistent with global social media trends—students showed clear capacity to compartmentalise educational and recreational uses. WhatsApp was predominantly used for academic coordination, while platforms such as TikTok and Instagram served mainly recreational purposes.

Religious and political content attracted comparatively lower attention (15–46.9% for religious and 15–21.9% for political), further indicating selective and purposeful engagement.

### Positive Academic Impact Perceptions

A striking finding is the overwhelmingly positive perception of social media’s academic value. Across both institutional types, students reported that social media “*enhances*” or “*greatly enhances*” their studies at much higher rates than it detracts from them. For faith-based students, 70.8% reported enhancement; for non-faith-based, 84.4% did (Table 3).

Table 3: Perceived Academic Impact

| Perception       | Faith-Based (%) | Non-Faith-Based (%) |
|------------------|-----------------|---------------------|
| Greatly Enhances | 20.0            | 31.3                |
| Enhances         | 50.8            | 53.1                |
| Detracts         | 22.5            | 15.6                |
| Greatly Detracts | 6.7             | 0.0                 |

These results challenge dominant narratives portraying social media primarily as a distraction. Rather than experiencing widespread academic harm, most students report tangible academic benefits.

### Access Patterns and Expenditure

Usage patterns reinforced WhatsApp’s integration into daily routines. Approximately two-thirds of students across both institutional categories (68.3% and 68.8%) reported using platforms with no specific timing or structured intervals, indicating constant and opportunistic engagement.



Spending patterns revealed socioeconomic differences. Non-faith-based students reported higher monthly expenditure, with 34.4% spending ₦10,000 or more, compared to only 10.8% of faith-based students. By contrast, nearly a quarter (24.2%) of faith-based students reported spending nothing, suggesting reliance on institutional WiFi, family data plans, or restricted access.

### **Qualitative Findings**

This section examines institutional perspectives on smartphone and social media use within Nigerian universities. Through interviews with management staff, the study explores how policy variations influence student practices and the broader learning environment.

By analysing institutional approaches—from strict prohibitions to autonomy-oriented frameworks—the study highlights the practical tensions between formal regulations and actual student behaviour. These qualitative insights provide context for understanding how policy shapes, but does not necessarily constrain, the widespread use of WhatsApp and other digital platforms.

### **Institutional Policy Variations**

Interviews with management staff revealed substantial variation in institutional approaches to smartphone and social media use.

- i) Anchor University maintained a strict prohibition of smartphones and internet-enabled devices, justified by concerns about exposure to distracting or inappropriate content. However, quantitative data showing high WhatsApp usage among faith-based students suggest practical limits to such restrictions.
- ii) Trinity University operated under an informal, non-codified policy. Administrators expressed balanced views, acknowledging both the risks and educational benefits of social media.
- iii) University of Lagos adopted an autonomy-oriented approach, imposing no smartphone restrictions beyond examination settings. Administrators emphasised students' responsibility to self-regulate.

These varied policy orientations shape student experiences but do not appear to diminish WhatsApp's widespread use.

### **Recognition of Educational Benefits**

Across institutions, administrators openly acknowledged WhatsApp's educational value. They cited several advantages:

- i) rapid dissemination of academic materials
- ii) coordination of group assignments
- iii) student-to-student peer tutoring
- iv) faster communication than official channels

Such testimonies indicate that WhatsApp is recognised as an indispensable academic tool, even by those who favour restrictive policies.

### **Enforcement Challenges**

Administrators from restrictive institutions acknowledged considerable enforcement difficulties. Students often bypass policies by hiding devices, using restricted areas, or framing usage as necessary for family communication. Staff also noted that strict enforcement can fuel resentment and strain staff–student relations.

This suggests that prohibitive models struggle to accommodate contemporary communication realities.

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## Calls for Pragmatic Integration

Several administrators advocated more pragmatic, future-oriented solutions. Suggested approaches included:

- i) training students in responsible digital literacy
- ii) moderating official WhatsApp groups for academic purposes
- iii) balancing risk management with recognition of student agency

Such views highlight an emerging shift toward governance models that integrate, rather than suppress, student-driven technological practices.

## DISCUSSION

This section interprets the findings by examining how WhatsApp's affordances align with students' practices, the forms of agency students display in appropriating the platform for learning, and the limitations and risks that accompany these benefits. The discussion draws on Uses and Gratifications Theory (UGT) and Social Cognitive Theory (SCT) to explain why WhatsApp dominates educational communication in Nigerian universities. It also outlines wider intercultural, interdisciplinary, and institutional implications.

### Affordance–Practice Alignment

WhatsApp's educational effectiveness arises from a close fit between its technical affordances and Nigerian learning conditions. Several features stand out.

**Low bandwidth consumption:** WhatsApp compresses media files and allows messages to queue offline. This is crucial where data is costly and connectivity is unstable. From a UGT perspective, this meets students' need for economic efficiency. Students reported very low expenditure, with many relying on free WiFi to download files—something WhatsApp's offline functionality enables.

**Asynchronous communication:** Students can send and receive messages at different times. This flexibility suits contexts marked by unreliable electricity, competing responsibilities, and uneven schedules. SCT helps explain how students still learn from one another: they observe peers' explanations and study habits through message histories without needing to be online at the same moment.

**Multimedia support:** WhatsApp accommodates text, audio, images, documents, and short videos. This multimodality allows students to circulate lecture notes, clarify difficult concepts, and maintain social presence. UGT explains this as the platform's ability to satisfy multiple gratifications at once—information seeking, convenience, and social integration.

**Group functionality:** Large group chats enable class-wide coordination and collaborative work. SCT's idea of collective efficacy is useful here: when students see peers sharing resources and solving problems together, confidence in group capability grows, reinforcing participation.

**Intuitive interface:** WhatsApp is simple, familiar, and requires minimal digital literacy. Students therefore adopt it readily, especially compared to learning management systems that demand higher technical competence. Anticipated effort—a key UGT concept—remains low.

**Cross-platform compatibility:** WhatsApp works across mobile and desktop devices. Given low laptop ownership, this flexibility helps students access academic content whenever a device is available.

### Student Agency and Educational Appropriation

The findings show that students do not simply “fall into” WhatsApp use. They actively shape the platform for academic ends.

Resource sharing: Students share notes, images, PDFs, and links. This supports both UGT's information-seeking motives and SCT's observational learning, as students imitate helpful peer behaviours.

Coordination of group work: Assignments are organised through flexible, asynchronous exchanges. SCT's reciprocal determinism explains how environmental limits (lack of meeting spaces), personal preferences, and platform features combine to create new coordination practices.

Peer support networks: Students ask questions, offer explanations, and share encouragement. This reduces social anxiety linked to asking questions in class and enables vicarious learning.

Informal learning communities: Beyond formal courses, students form groups around shared interests or career goals. Educational and social motivations blend here, supporting UGT's emphasis on social integration.

Rapid information retrieval: WhatsApp enables quick clarifications, though the risk of misuse remains. In practice, the platform functions as an informal extension of academic support structures.

### **Perception–Performance Gaps and Hidden Costs**

Despite the clear benefits, risks and limitations exist.

Students often believe they can multitask effectively, but research shows that multitasking reduces performance. Notifications disrupt deep focus, and even silenced devices can draw attention through anticipation. SCT highlights how environmental cues—alerts, message previews, “last seen” indicators—shape cognitive habits.

Students may also overlook opportunity costs. Time spent on WhatsApp, even for study, may displace more productive activities such as extended reading or richer face-to-face collaboration.

Dependency on a single commercial platform creates vulnerability. Students without adequate devices or data may be excluded. Changes to WhatsApp's commercial policies could affect educational use. Academic integrity concerns further complicate collaborative practices: boundaries between legitimate cooperation and inappropriate collusion can be difficult to police.

### **Theoretical Integration: UGT and SCT**

Bringing UGT and SCT together provides a stronger explanation than either theory alone. The integration suggests that:

1. Students choose WhatsApp because they expect it to meet their needs (UGT), shaped by observing peers using it successfully (SCT).
2. They continue using it because they obtain the gratifications they seek (UGT) through socially mediated learning practices (SCT).
3. WhatsApp's affordances simultaneously support individual motivations and social learning.
4. Environmental constraints—high data costs, low laptop ownership—interact with both motivational and social processes.

This integrated view moves beyond simplistic explanations that blame either technology or students. Instead, it shows a dynamic interaction between people, tools, and contexts.

### **Intercultural and Interdisciplinary Contributions**

The Nigerian case illustrates that platform success is culturally situated. WhatsApp thrives not because it is universally superior but because it aligns with local constraints and practices. Educational technology research

must therefore avoid assuming Western conditions—reliable broadband, widespread laptop use, and established LMS infrastructures—apply everywhere.

The study also demonstrates the value of interdisciplinary work. Communication studies, psychology, sociology, and technology studies all contribute to understanding how students engage with digital tools. Mixed-methods research was vital in capturing both patterns and deeper meanings.

Importantly, the findings challenge deficit narratives about African learning environments. Nigerian students show creativity and adaptability in using available tools to sustain learning within real constraints.

### **Institutional Implications and Policy Directions**

Several implications for universities emerge.

1. Move beyond prohibition: Strict bans on smartphones rarely work and may undermine trust. Digital literacy education is a more constructive alternative. Training should cover time management, academic integrity, critical information evaluation, privacy awareness, and self-regulation.
2. Integrate WhatsApp into pedagogy: Institutions can create official course groups, share materials, offer limited consultation, and recognise meaningful contributions as part of participation. This builds on existing student practices rather than competing with them.
3. Address infrastructure deficits: Improved LMS mobile interfaces, better campus WiFi, longer lab hours, and subsidised data access can reduce forced dependency on WhatsApp.
4. Support evidence-based policy: Further research should examine links between platform use and academic performance, compare outcomes across platforms, and evaluate digital literacy interventions.
5. Adopt flexible policies: Policies should acknowledge both benefits and risks. They should regulate WhatsApp use during assessments while supporting educational uses elsewhere.

### **Design Implications for Educational Technology**

The success of WhatsApp offers lessons for developers working in resource-constrained contexts:

- i) Prioritise mobile-first design.
- ii) Optimise for low data use.
- iii) Enable asynchronous rather than continuous engagement.
- iv) Keep interfaces simple and intuitive.
- v) Build strong offline functionality.
- vi) Align with cultural communication practices.
- vii) Ensure economic accessibility.

### **Contribution, Impact, and Policy Relevance**

This study offers significant insights into intercultural and interdisciplinary scholarship, national development, and educational policy. It demonstrates how digital technologies, particularly WhatsApp, are appropriated for learning in African contexts and highlights implications for theory, practice, and society.

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## Scholarly Contributions

**Methodological Contributions:** The study employs a mixed-methods design, combining quantitative prevalence analysis with qualitative institutional perspectives. This approach illustrates effective strategies for researching educational technologies in developing contexts. By integrating Uses and Gratifications Theory with Social Cognitive Theory and affordance analysis, the study provides a robust theoretical framework with applicability beyond this research.

**Empirical Contributions:** The systematic documentation of WhatsApp usage, educational applications, and student perceptions addresses a notable gap in African educational technology literature. The findings challenge the assumption that social media is inherently distracting, demonstrating the need for nuanced, context-sensitive analysis.

**Theoretical Contributions:** The study extends affordance theory from feature-focused accounts to practice-oriented analysis, showing how specific technical characteristics enable educational uses. The theoretical integration framework exemplifies cross-disciplinary synthesis, moving beyond the limitations of single-theory approaches.

**Intercultural Contributions:** By questioning Western-centric assumptions about educational technology, the study shows how contextual factors—such as mobile-first access, economic constraints, and infrastructural limitations—shape effective platform choices. African contexts are not deficient but different, requiring solutions grounded in local realities.

## Impact on National Development

The findings have direct relevance to Nigeria's national development and the mandate of the Senate Research Grant Committee of the National Open University:

- i) **Educational Quality Enhancement:** Understanding how students use WhatsApp allows institutions to support beneficial practices. Pedagogical integration can improve resource access, coordination, peer support, and learning beyond classrooms.
- ii) **Digital Literacy Development:** Recognising platform prevalence enables targeted digital literacy interventions, preparing students for participation in the digital economy. Emphasis shifts from prohibition to responsible and effective technology use.
- iii) **Equity and Access:** WhatsApp's low-cost accessibility promotes educational equity, allowing students from disadvantaged backgrounds to collaborate and access resources despite limited infrastructure.
- iv) **Innovation and Entrepreneurship:** Insights into platform appropriation can guide the development of contextually relevant educational tools, increasing the likelihood of successful innovation and building local technological capacity.
- v) **Workforce Preparation:** Skills developed through WhatsApp—remote coordination, digital resource sharing, and asynchronous communication—are directly transferable to professional environments.

## POLICY RECOMMENDATIONS FOR EDUCATIONAL STAKEHOLDERS

### For Universities:

- i) Revise restrictive social media policies to balance educational benefits and recreational risks.
- ii) Integrate digital literacy across programmes.
- iii) Train instructors in effective WhatsApp pedagogy.

- iv) Invest in mobile-optimised infrastructure.
- v) Conduct longitudinal studies linking usage to academic outcomes.

**For the National Universities Commission (NUC):**

- i) Issue guidelines promoting flexible, context-sensitive approaches.
- ii) Fund research on educational technology in Nigerian contexts.
- iii) Embed digital literacy competencies in curricula.
- iv) Support institutional capacity-building for technology integration.
- v) Facilitate inter-university sharing of best practices.

**For the Senate Research Grant Committee of National Open University of Nigeria:**

- i) Prioritise context-specific educational technology research grants.
- ii) Support development of locally relevant platforms.
- iii) Fund infrastructure improvements to enhance connectivity and access.
- iv) Provide professional development for educators in technology integration.
- v) Foster partnerships between universities and the technology sector for contextually appropriate innovation.

**For Educational Technology Developers:**

- i) Adopt mobile-first designs reflecting African connectivity realities.
- ii) Ensure data efficiency and offline functionality.
- iii) Simplify interfaces to reduce literacy barriers.
- iv) Conduct user research in local contexts rather than assuming Western transferability.

**For Curriculum Developers:**

- i) Integrate digital literacy across disciplines.
- ii) Address responsible social media use, academic integrity, and critical evaluation of information.
- iii) Develop competencies in asynchronous collaboration and digital resource management.
- iv) Emphasise ethical dimensions such as privacy, data protection, and platform literacy.
- v) Focus on transferable skills adaptable to evolving technological environments.

**Broader Societal Implications**

Beyond education, the findings have wider relevance:

- i) Community Relations: WhatsApp supports community organisation, civic engagement, and social mobilisation, informing civil society and democratic participation.



- ii) Healthcare Communication: The platform enables health education, appointment coordination, and patient-provider interaction in resource-limited settings.
- iii) Economic Development: Digital literacy acquired through educational use supports entrepreneurship, remote work, and e-commerce, contributing to broader economic growth.
- iv) Intercultural Dialogue: Understanding technological mediation enhances cross-cultural understanding, conflict resolution, and social cohesion in Nigeria's diverse society.

## CONCLUSION

This investigation demonstrates that WhatsApp functions as de facto educational infrastructure in Nigerian universities. It compensates for institutional resource deficits and enables student practices that participants overwhelmingly perceive as educationally beneficial. The platform's technical affordances—low bandwidth consumption, asynchronous communication, multimedia support, group functionality, and interface simplicity—align with contextual realities characterised by mobile-first internet access, economic constraints, infrastructural limitations, and cultural preferences for collective learning.

Students exercise significant agency in appropriating commercial messaging platforms for educational purposes. These include resource sharing, coordination practices, peer support, informal learning communities, and rapid information retrieval. Such practices indicate sophisticated technology use rather than passive susceptibility to distraction. While concerns about attention fragmentation, task-switching, and opportunity costs are valid, student testimonies and usage patterns suggest that benefits often outweigh harms.

For institutional policy, the findings argue against prohibitive approaches, which are both impractical and counterproductive. More promising alternatives include digital literacy education, pragmatic integration acknowledging both benefits and risks, and pedagogical incorporation that builds on rather than opposes existing student practices. For educational technology design, WhatsApp's success offers lessons in mobile-first design, data efficiency, asynchronous interaction, interface simplicity, offline functionality, cultural alignment, and economic accessibility.

The study's theoretical integration synthesises Uses and Gratifications Theory with Social Cognitive Theory, incorporating affordance analysis. This framework recognises that students select platforms based on expected gratifications shaped by peer observation and continue usage reflecting gratifications obtained through socially mediated practices, all mediated by technical affordances and environmental constraints.

From an intercultural perspective, the study challenges Western-centric assumptions about "appropriate" educational technologies. Contextual factors shape effective platform choices. African contexts are not deficient but different, requiring solutions grounded in local realities. Nigerian students demonstrate sophisticated technological appropriations that deserve recognition rather than deficit narratives.

## Future Research Directions

Several avenues could advance understanding:

- i) Longitudinal Studies: Tracking WhatsApp usage across undergraduate careers would reveal developmental trajectories, critical transition points, and long-term impacts on academic performance and professional preparation.
- ii) Experimental Interventions: Randomised controlled trials testing specific pedagogical integration strategies (e.g., official course groups, instructor consultation, structured activities) would provide causal evidence of effectiveness.
- iii) Comparative Investigations: Cross-African comparisons would identify contextual variations and highlight which findings are transferable versus context-specific.

- iv) Objective Performance Correlations: Linking usage patterns with grades, exam scores, retention, and graduation outcomes would validate perception-based findings.
- v) Platform Evolution Studies: Examining how platform modifications influence educational appropriations would illuminate dynamic affordance-practice relationships.
- vi) Theoretical Extensions: Integrating perspectives such as cultural-historical activity theory, distributed cognition, or practice theory would deepen theoretical understanding.
- vii) Design-Based Research: Collaborative work between researchers, educators, and platform developers could create and test innovations informed by contextual insights.

## Closing Reflection

This study challenges deficit narratives that portray social media as inherently harmful to learning. Platforms differ in affordances, purposes, and usage patterns. While entertainment-focused platforms may distract, communication-focused platforms that support coordination and resource sharing can genuinely enhance learning. Nuanced analysis attending to specific platforms, contexts, usage practices, and student perspectives is essential for understanding contemporary digital learning ecologies.

Nigerian universities face a clear question: not whether students will use WhatsApp—empirical evidence shows overwhelming adoption—but how institutions respond. Prohibition preserves symbolic purity but fails practically. Permissiveness without guidance risks unrecognised costs. Pragmatic integration that acknowledges complexity, supports effective usage, addresses concerns, and builds on student practices while providing education for informed choices offers the most promising path forward.

As educational technologies evolve, institutions require adaptive approaches grounded in empirical evidence, theoretical sophistication, cultural sensitivity, and developmental relevance. This study contributes to that ongoing conversation, demonstrating that understanding Nigerian students' actual practices and contextual realities is essential for effective educational technology policy and practice.

## REFERENCES

1. Bandura, A. (2001). Social cognitive theory: An agentic perspective. *\*Annual Review of Psychology\**, *52*(1), 1–26. <https://doi.org/10.1146/annurev.psych.52.1.1>
2. Boyd, d. (2014). *\*It's complicated: The social lives of networked teens\**. Yale University Press.
3. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *\*Qualitative Research in Psychology\**, *3*(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
4. Chiu, T. K. F. (2021). Digital support for student engagement in blended learning based on self-determination theory. *\*Computers in Human Behavior\**, *124*, Article 106909. <https://doi.org/10.1016/j.chb.2021.106909>
5. Creswell, J. W., & Creswell, J. D. (2017). *\*Research design: Qualitative, quantitative, and mixed methods approaches\** (5th ed.). SAGE Publications.
6. Crompton, H., & Burke, D. (2018). The use of mobile learning in higher education: A systematic review. *\*Computers & Education\**, *123*, 53–64. <https://doi.org/10.1016/j.compedu.2018.04.007>
7. Czerniewicz, L., & Brown, C. (2013). The habitus of digital "strangers" in higher education. *\*British Journal of Educational Technology\**, *44*(1), 44–53. <https://doi.org/10.1111/j.1467-8535.2012.01281.x>
8. Evans, S. K., Pearce, K. E., Vitak, J., & Treem, J. W. (2017). Explicating affordances: A conceptual framework for understanding affordances in communication research. *\*Journal of Computer-Mediated Communication\**, *22*(1), 35–52. <https://doi.org/10.1111/jcc4.12180>
9. Gibson, J. J. (1979). *\*The ecological approach to visual perception\**. Houghton Mifflin.
10. Isaacs, S. (2012). Turning on mobile learning in Africa and the Middle East: Illustrative initiatives and policy implications. UNESCO.

11. Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and gratifications research. *\*Public Opinion Quarterly\**, *\*37\*(4)*, 509–523. <https://doi.org/10.1086/268109>
12. Kirschner, P. A., & Karpinski, A. C. (2010). Facebook and academic performance. *\*Computers in Human Behavior\**, *\*26\*(6)*, 1237–1245. <https://doi.org/10.1016/j.chb.2010.03.024>
13. LaRose, R. (2010). The problem of media habits. *\*Communication Theory\**, *\*20\*(2)*, 194–222. <https://doi.org/10.1111/j.1468-2885.2010.01360.x>
14. Manca, S., & Ranieri, M. (2016). Facebook and the others: Potentials and obstacles of social media for teaching in higher education. *\*Computers & Education\**, *\*95\**, 216–230. <https://doi.org/10.1016/j.compedu.2016.01.012>
15. Norman, D. A. (1988). *\*The psychology of everyday things\**. Basic Books.
16. Porter, G., Hampshire, K., Milner, J., Munthali, A., Robson, E., De Lannoy, A., Bango, A., Gunguluza, N., Mashiri, M., Tanle, A., & Abane, A. (2016). Mobile phones and education in Sub-Saharan Africa: From youth practice to public policy. *\*Journal of International Development\**, *\*28\*(1)*, 22–39. <https://doi.org/10.1002/jid.3116>
17. Ruggiero, T. E. (2000). Uses and gratifications theory in the 21st century. *\*Mass Communication and Society\**, *\*3\*(1)*, 3–37. [https://doi.org/10.1207/S15327825MCS0301\\_02](https://doi.org/10.1207/S15327825MCS0301_02)
18. Sanbonmatsu, D. M., Strayer, D. L., Medeiros-Ward, N., & Watson, J. M. (2013). Who multi-tasks and why? Multi-tasking ability, perceived multi-tasking ability, impulsivity, and sensation seeking. *\*PLoS ONE\**, *\*8\*(1)*, Article e54402. <https://doi.org/10.1371/journal.pone.0054402>
19. Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social cognitive theory. *\*Contemporary Educational Psychology\**, *\*60\**, Article 101832. <https://doi.org/10.1016/j.cedpsych.2019.101832>
20. Sundar, S. S., & Limperos, A. M. (2013). Uses and grats 2.0: New gratifications for new media. *\*Journal of Broadcasting & Electronic Media\**, *\*57\*(4)*, 504–525. <https://doi.org/10.1080/08838151.2013.845827>
21. Treem, J. W., & Leonardi, P. M. (2013). Social media use in organizations: Exploring the affordances of visibility, editability, persistence, and association. *\*Annals of the International Communication Association\**, *\*36\*(1)*, 143–189. <https://doi.org/10.1080/23808985.2013.11679130>
22. Unwin, T. (2015). Reflections on mobile learning: Using mobile technologies for teacher development in Sub-Saharan Africa. In S. Price, C. Jewitt, & B. Brown (Eds.), *\*The SAGE handbook of digital technology research\** (pp. 447–461). SAGE Publications.