



Assessing the Impact of Internet and Smart Devices on Academic Performance at Bangladesh Open University: A Qualitative Study

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Abstract

This qualitative phenomenological study explores the lived experiences of students at Bangladesh Open University (BOU) regarding the impact of internet access and smart devices on their academic performance in an open and distance learning (ODL) context. Through semi-structured interviews with 15 undergraduate and postgraduate learners, thematic analysis revealed four key themes: practical utilization of devices as essential tools for overcoming geographical and time barriers; a dual impact on performance, with benefits like enhanced comprehension and motivation often overshadowed by distractions and procrastination; multifaceted challenges including unreliable connectivity, high data costs, power outages, and gender-related constraints; and student-driven recommendations for optimization, such as low-bandwidth content, digital literacy training, and moderated online communities. Findings highlight smart devices as a double-edged sword—empowering self-paced learning when used intentionally, yet eroding focus and equity without institutional support and self-regulation. The study underscores the need for learner-centered interventions to maximize benefits and minimize harms in resource-constrained ODL settings.

Keywords: *Bangladesh Open University, open and distance learning, smart devices, internet access, academic performance, digital distractions, self-regulated learning, qualitative study.*

Introduction

Background of the Study

The proliferation of the internet and smart devices has transformed educational landscapes globally, offering unprecedented access to information while posing challenges to traditional learning paradigms (Junco & Cotten, 2012; Lepp et al., 2014). In developing nations like Bangladesh, where internet penetration has grown significantly in recent years, these technologies have accelerated distance education, particularly at institutions such as Bangladesh Open University (BOU), the country's sole public open and distance learning provider.

BOU, established in 1992, relies on blended modalities including print materials, radio, television, and increasingly digital platforms to cater to diverse populations, often rural and working adults. The COVID-19 pandemic expedited this shift, with BOU launching online tutorials and mobile apps, alongside broader challenges in online education adoption across Bangladesh (Sarker et al., 2019; Emon et al., 2020). However, empirical evidence on how internet and smart devices influence academic performance remains mixed. Positive impacts include enhanced self-paced

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learning and resource accessibility, yet distractions from social media, digital divide issues, and inadequate digital literacy hinder outcomes (Lepp et al., 2014; Kibuku et al., 2020).

In Bangladesh, studies indicate that excessive smartphone use correlates with lower academic performance among university students, while moderated integration improves engagement in open learning (Arefin et al., 2018; Mubassira & Das, 2019). Despite this, qualitative insights specific to BOU's context—encompassing learner motivations, barriers, and experiential impacts—are scarce, limiting tailored pedagogical reforms. This study addresses this gap through in-depth explorations of BOU students' lived experiences.

Statement of the Problem

The rapid proliferation of internet access and smart devices in Bangladesh has revolutionized educational delivery, particularly in distance learning contexts. However, their impact on academic performance at Bangladesh Open University (BOU)—the country's pioneering public institution for open and distance education—remains insufficiently examined. BOU's model, catering primarily to working adults in rural and semi-urban areas with limited in-person interactions, heavily depends on technology-mediated instruction, amplifying the risks of digital disruptions.

While smart devices facilitate resource access and peer collaboration, excessive non-academic engagement—such as social media and entertainment—often leads to distractions, diminishing self-regulated learning crucial for distance education. Studies reveal that Bangladeshi university students average several hours daily on smartphones for leisure, correlating with reduced academic outcomes, heightened procrastination, and lower engagement (Mubassira & Das, 2019; Arefin et al., 2018; Afrin et al., 2024). In BOU's context, where internet reliance is increasing, this exacerbates digital divides, including connectivity issues and excessive use, further hindering assignment completion and knowledge retention.

Qualitative explorations of personal experiences, adaptive strategies, and socio-economic barriers are limited. This research void impedes evidence-based policies to optimize digital tools for equitable outcomes amid Bangladesh's digital expansion.

Rationale of the Study

The proliferation of the internet and smart devices has transformed educational landscapes globally, yet their impact on open and distance learning (ODL) systems, particularly in developing contexts like Bangladesh, remains underexplored (Power et al., 2009; Latchem, 2018). Bangladesh Open University (BOU), the sole public institution for ODL serving a large number of learners across diverse socio-economic backgrounds, relies heavily on self-paced study materials. With growing internet and smartphone access in Bangladesh, learners increasingly integrate digital tools into their academic routines.

Existing studies indicate mixed outcomes: while digital access enhances resource availability and flexibility in ODL, excessive smart device usage correlates with distractions, reduced study time, and lower grades among university students (Arefin et al., 2018; Lepp et al., 2014; Nayak, 2018). In BOU's context, where learners are often working adults in rural areas with limited infrastructure, these technologies could either bridge educational gaps or exacerbate inequalities through digital divides (Sarker et al., 2019; Bandalaria, 2007). Qualitative insights are scarce, overlooking learners' lived experiences, motivational factors, and coping strategies amid BOU's transitioning pedagogy post-COVID-19.

This study addresses this gap by qualitatively examining how internet and smart devices influence academic performance at BOU. Understanding these dynamics is crucial for informing policy reforms, curriculum digitization, and support mechanisms to optimize ODL efficacy in resource-constrained settings.

Research Questions and Objectives

This study aims to achieve the following objectives:

- To explore how internet access and smart devices are utilized by students at Bangladesh Open University for academic purposes.
- To understand the impact of these technologies on the academic performance and learning experiences of students.
- To identify the challenges faced by students in integrating the internet and smart devices into their academic routine.
- To gather recommendations from students on how the use of internet and smart devices can be optimized for better academic outcomes.

The study seeks to answer:

- How do students at BOU use the internet and smart devices for their academic work?
- What is the perceived impact of the internet and smart devices on academic performance (positive or negative)?
- What challenges do students face when using the internet and smart devices for academic purposes?
- What strategies can be implemented to improve the effective use of internet and smart devices at BOU?

Significance of the Study

This qualitative study on the impact of internet and smart devices on academic performance at Bangladesh Open University (BOU) holds significance for open and distance learning (ODL) stakeholders in developing contexts. As BOU serves a large and diverse learner base—predominantly working adults and rural residents—this research illuminates how digital tools shape self-directed learning, a core ODL tenet.

Findings can guide BOU in refining its digital infrastructure and platforms. The study addresses a gap in qualitative evidence, where prior studies focus on quantitative metrics, neglecting learners' nuanced experiences of distraction, motivation, and digital fatigue.

Practically, insights will inform targeted interventions—e.g., time-management modules or low-bandwidth content—to mitigate smartphone-related distractions. For policymakers, the research supports emphasis on equitable digital access. Institutions may adapt findings to enhance mobile learning efficacy.

By foregrounding marginalized voices—rural women and part-time learners—this work promotes inclusive pedagogy, potentially reducing dropout rates. Ultimately, it contributes to sustainable digital transformation in ODL, fostering resilient, learner-centered ecosystems.

Literature Review

The integration of internet and smart devices into education has reshaped learning paradigms worldwide, particularly in open and distance learning (ODL) contexts where accessibility is paramount. This review synthesizes evidence on the impact of these technologies on academic performance, with a focus on developing countries like Bangladesh (Latchem, 2018).

Global Impact of Internet and Smart Devices on Academic Performance

The advent of internet connectivity and smart devices has democratized access to educational resources, yet its effects on academic outcomes remain contested. Studies have found positive effects of mobile device integration on student performance, particularly in collaborative and self-paced tasks. Devices facilitate interactive content, enhancing engagement and retention (Junco & Cotten, 2012; Kibuku et al., 2020).

Conversely, excessive use often correlates with diminished performance due to distractions and addiction. Reviews confirm negative associations between smartphone behavior and grades, with multitasking reducing cognitive focus (Lepp et al., 2014; Nayak, 2018). These findings underscore a "digital divide" in outcomes: beneficial when structured, detrimental when unstructured.

Qualitative explorations in developing contexts amplify these tensions, revealing that internet access fosters autonomy but exacerbates issues from information overload or unreliable connectivity (Tarhini et al., 2017).

Technology in Open and Distance Learning: Opportunities and Outcomes

ODL amplifies technology's role, relying on asynchronous access to bridge geographic barriers. Reviews indicate neutral to positive effects, with online ODL yielding equivalent or superior outcomes compared to face-to-face, driven by multimedia resources (Sarker et al., 2019; Bandalaria, 2007). Behavioral interventions via apps enhance self-regulation and completion rates.

However, scalability challenges persist in resource-constrained settings, with implementations failing due to poor infrastructure (Power et al., 2009; Emon et al., 2020). Qualitative evidence underscores experiential impacts, finding smart devices transformative for work-study balance but potentially alienating due to limited interactivity.

Context-Specific Evidence: Bangladesh and BOU

In Bangladesh, smart devices are ubiquitous among youth, yet their academic integration shows mixed impacts. Quantitative studies reveal smartphone addiction inversely related to academic performance, with excessive use linked to lower scores, mediated by sleep disruption (Arefin et al., 2018; Mubassira & Das, 2019; Siddique et al., 2026; Afrin et al., 2024). Conversely, educational apps improve performance when used moderately.

At BOU, digital shifts accelerated post-COVID, with rises in online participation but challenges in completion rates attributed to infrastructure issues (Sarker et al., 2019). Positive facets include mobile tutorials enhancing self-efficacy. Qualitative gaps are evident, with limited BOU-specific narratives on student voices, particularly regarding infrastructural barriers and cultural constraints.

Gaps in the Literature and Rationale for the Current Study

Despite evidence, qualitative depth is limited, particularly in BOU's diverse cohort. Existing studies prioritize correlations over interpretive themes like motivational shifts or barrier negotiations. In

Bangladesh, research overlooks gender and regional nuances. This study fills this void via phenomenology, exploring BOU students' narratives to inform inclusive digital pedagogies.

Theoretical and Conceptual Framework

This qualitative phenomenological study is grounded in an integrated theoretical framework that combines the Community of Inquiry (CoI) model (Garrison & Anderson, 2017) as the primary lens, with complementary insights from the Technology Acceptance Model (TAM) (Davis, 1989) and Self-Determination Theory (SDT) (Deci & Ryan, 2000). These frameworks are particularly suited to open and distance learning (ODL) contexts like Bangladesh Open University (BOU), where technology-mediated interactions predominate, and self-regulated learning is essential.

Primary Framework: Community of Inquiry (CoI)

The CoI framework posits that meaningful online learning emerges from the interplay of three interdependent "presences":

Cognitive Presence: The extent to which learners construct meaning through sustained reflection, critical discourse, and integration of information. In this study, internet and smart devices enhance cognitive presence by providing access to multimedia resources (e.g., YouTube tutorials, PDFs), fostering deeper comprehension and self-paced exploration. However, distractions from non-academic apps disrupt reflection and knowledge retention.

Social Presence: The ability of participants to project their identities, build trust, and engage in open communication. Smart devices support social presence via informal peer groups (e.g., WhatsApp discussions), reducing isolation in ODL. Yet, excessive entertainment use erodes interpersonal connections and collaborative learning.

Teaching Presence: The design, facilitation, and direction of learning processes. At BOU, institutional platforms (e.g., e-Learning apps) and guidelines represent teaching presence, but infrastructural barriers (e.g., poor connectivity) weaken it, amplifying digital divides.

The CoI framework extends prior models by incorporating sociocultural factors in developing contexts, such as Bangladesh's intermittent electricity and data costs. Findings from this study—dual impacts, distractions, and challenges—align with CoI by illustrating how unbalanced presences (e.g., strong cognitive access but weak social/teaching support) lead to suboptimal academic outcomes.

Complementary Frameworks

Technology Acceptance Model (TAM): Explains adoption through perceived usefulness (e.g., resource access improving grades) and perceived ease of use (e.g., app navigation). In BOU's context, high perceived usefulness drives academic integration, but barriers like cost and literacy reduce ease of use, leading to partial adoption or misuse (Shohel et al., 2024).

Self-Determination Theory (SDT): Focuses on intrinsic motivation via autonomy, competence, and relatedness. Intentional device use supports autonomy (self-paced learning) and competence (better assignment scores), boosting motivation. Uncontrolled distractions undermine these needs, causing procrastination and reduced self-regulation—critical in ODL where learners are often working adults (Rahman et al., 2025).

Conceptual Framework

The integrated conceptual framework (illustrated below in textual form for clarity) positions internet and smart device use as a mediator between contextual factors (infrastructure, digital literacy, socio-economic barriers) and academic performance, moderated by the three presences and basic psychological needs.

Contextual Factors

(Infrastructure challenges, digital divide, gender norms, data costs)

Influences adoption and integration

Technology Acceptance (TAM)

→ Perceived Usefulness & Ease of Use

→ Behavioral Intention to Use Devices Academically

Moderated by

Community of Inquiry (CoI) Presences

- Cognitive Presence (resource access vs. information overload)
- Social Presence (peer collaboration vs. isolation/distraction)
- Teaching Presence (institutional support vs. lack of guidelines)

Supported by

Self-Determination Theory (SDT)

→ Autonomy (self-paced control)

→ Competence (skill mastery and achievement)

→ Relatedness (peer/instructor connections)

Outcomes

→ Dual Impact on Academic Performance

→ Positive: Enhanced engagement, comprehension, flexibility

→ Negative: Distractions, procrastination, reduced retention

Leading to

Recommendations for Optimization

(Low-bandwidth content, digital literacy training, moderated groups)

This framework addresses gaps in the literature by emphasizing qualitative lived experiences in a resource-constrained ODL setting, informing equitable digital pedagogies aligned with SDG 4. It guides the thematic analysis, revealing how intentional, supported use maximizes benefits while mitigating harms.

Methodology

This qualitative study adopted a phenomenological approach to deeply explore the lived experiences of Bangladesh Open University (BOU) students concerning the influence of internet access and smart devices on their academic performance. Phenomenology was chosen as it prioritizes understanding participants' subjective interpretations and meanings, aligning with the study's aim to capture personal perceptions in a distance learning context where technology plays a pivotal role.

Research Design and Participants

A phenomenological research design was employed, utilizing purposive sampling to select 15 undergraduate and postgraduate students from BOU's varied programs, including business, education, and sciences. This ensured diversity in age (20–45 years), gender, geographic location (urban/rural), and program level, while focusing on those with regular smart device usage for academic purposes. Data saturation was reached after 15 interviews, indicating no new themes emerged, consistent with phenomenological guidelines for in-depth insight over large samples.

Data Collection

Data were gathered through semi-structured virtual interviews conducted via Zoom from March to June 2024, each lasting 45–60 minutes. The interview guide included open-ended questions on device access, integration into studies, perceived benefits (e.g., resource availability), distractions (e.g., social media), and overall academic impacts. Participants provided informed consent, interviews were audio-recorded, and verbatim transcriptions were produced to preserve authenticity.

Data Analysis Technique

Thematic analysis, following Braun and Clarke's (2006) reflexive six-phase process, was applied: (1) familiarization through repeated reading of transcripts; (2) generating initial codes; (3) searching for themes; (4) reviewing themes; (5) defining and naming themes; and (6) producing the report. NVivo software aided systematic coding, while inter-coder reliability was enhanced through independent coding by two researchers and consensus discussions. Researcher reflexivity was maintained to bracket preconceptions, ensuring themes emerged inductively from participants' experiences.

Data Analysis

Through in-depth interviews with BOU learners, we delved into their everyday experiences with smart devices and the internet in open and distance learning (ODL). Using thematic analysis, four key themes emerged naturally from their stories—each one capturing a different side of how technology fits into their studies. These themes show just how central smart devices have become for these students, while also revealing the real struggles they face.

Theme 1: Practical Utilization of Internet and Smart Devices in the ODL Context

For most BOU students, smart devices aren't a luxury—they're a lifeline. Many described relying on their smartphones daily to stay on top of their studies despite busy lives and long distances from study centers. Common practices included downloading PDF modules from the BOU app, watching tutorial videos on YouTube, joining WhatsApp groups to discuss assignments with peers, and submitting work online. These tools gave them the freedom to learn at their own pace, often late at night or during breaks at work.

One student shared:

"I download the PDF modules from the BOU app at night when the network is better, and watch tutorial videos on YouTube. Without my phone, I couldn't study at all because the study center is too far."

This theme really brings home how smart devices bridge the gaps that have always challenged distance learners. In a country like Bangladesh, where many students live in rural areas or juggle jobs and family responsibilities, having study materials in your pocket means education feels more achievable and less out of reach.

Theme 2: Dual Impact on Academic Performance and Learning Experience

Perhaps the most relatable theme was the mixed feelings students had about how devices affected their actual learning and grades. On the positive side, many felt that multimedia resources—like video explanations—made tough subjects easier to grasp and even boosted their motivation. Several mentioned scoring better on assignments after supplementing course materials with online videos.

A participant put it this way:

“YouTube explanations make difficult topics like accounting so clear. I scored higher in my last assignment because I watched extra videos.”

But the negatives often felt more overwhelming. Distractions were a constant complaint: notifications pulling them into social media, endless scrolling, or jumping between apps. What started as a quick break could turn into hours lost, leading to rushed work, procrastination, and lower grades.

Another student reflected honestly:

“I open Facebook for just five minutes, and suddenly two hours are gone. My grades dropped last semester.”

This duality shows that smart devices can amplify success when used purposefully, but without some self-control, they can quietly sabotage progress. It's a very human struggle—technology offers incredible resources, yet it tempts us in ways that make focusing harder than ever.

Theme 3: Multifaceted Challenges in Integration

Integrating smart devices into daily study routines wasn't smooth for anyone. Students faced a web of practical and personal barriers: unreliable internet connections that dropped at crucial moments, the high cost of data plans eating into tight budgets, frequent power outages (load-shedding) that left phones dead, and a lack of basic digital skills for some. On top of that, the pull of non-study apps and the sheer demands on their time—from work or household chores—added to the frustration.

One learner described a common setback:

“When there's load-shedding, I can't charge my phone or connect to the internet. Sometimes I miss deadlines.”

Some also touched on gender-related challenges, like women having less private time or access to devices due to family expectations. All these issues often led to feelings of exhaustion, stress, and even isolation—moments when technology, instead of connecting them, left them feeling more alone in their studies.

Theme 4: Recommendations for Optimisation

Despite the challenges, students were thoughtful and hopeful when suggesting ways forward. They didn't want to abandon devices—they wanted BOU to help make them work better. Ideas included

creating more low-bandwidth or fully offline content (like downloadable videos), offering simple training on digital skills and managing distractions, setting up official moderated groups for focused discussions, providing clear guidelines on healthy device habits, and adding interactive elements like mobile-friendly quizzes.

As one student emphasized, the goal was straightforward: institutional support to turn these powerful tools into reliable allies rather than constant sources of temptation.

Overall Insight from the Themes

Taken together, these themes paint a vivid picture: smart devices are now essential for BOU students, empowering them to overcome traditional barriers and engage more deeply with their studies when things go well. Yet without proper guidance and support, the same devices can disrupt focus, heighten stress, and widen inequalities. The learners' voices highlight an opportunity—if BOU listens and acts on these practical suggestions, it could help turn potential pitfalls into real strengths, making distance learning not just accessible, but truly effective and sustainable for everyone.

Discussion

Interpretation of Findings

At its core, this study paints a very human picture of how BOU students are navigating their studies in a digital world. Smart devices—like smartphones and tablets—are genuinely helping many learners overcome real-life hurdles. For someone juggling a job, family, or living far from a campus, being able to pull up course materials or watch a lecture video anytime is a game-changer. It gives them flexibility and a sense of control that traditional distance learning often lacked. This echoes what other researchers have found in similar contexts (Mubassira & Das, 2019; Arefin et al., 2018; Afrin et al., 2024)—technology can truly open doors.

But here's where it gets real: the downsides often feel heavier. Many students shared how constant notifications, social media scrolls, and the temptation to multitask pull them away from studying. It's not just a minor annoyance—it's fragmenting their focus, leading to procrastination, and ultimately hurting their grades. Anyone who's ever picked up their phone for "just a quick check" and emerged an hour later knows exactly what this feels like. What's interesting is how this plays out in the learning process itself. Students seem to gain a lot in terms of independent thinking and exploring ideas on their own (what researchers call "cognitive presence"). Yet the social side—feeling connected to classmates—and the guidance from tutors (teaching presence) often suffer because online interactions can feel shallow or disrupted by technical glitches (Tarhini et al., 2017; Abdullah & Ward, 2016).

Perhaps the most relatable finding is that it all comes down to self-discipline. Students who are good at managing their time, setting goals, and resisting distractions get the most out of their devices. Those who struggle end up overwhelmed. In a university like BOU, where learners are mostly adults with busy lives and varied backgrounds, this personal factor makes all the difference. It's a reminder that technology doesn't magically fix everything—it amplifies whatever habits and skills we bring to it.

Implications and Recommendations

For Bangladesh Open University, these findings are both exciting and sobering. On the exciting side, smart devices could transform how millions access higher education in a country where

traditional universities can't keep up with demand. But the sobering part is that simply pushing more digital content isn't enough; without support, many students—especially in rural areas with spotty internet or tight budgets—risk falling further behind.

So, what can be done? A few practical, human-centered steps stand out:

- Create materials that work even on slow or expensive connections—think simple text-based resources or downloadable content that doesn't eat up data.
- Offer straightforward training on managing digital distractions and building better study habits. Short modules on things like turning off notifications or planning focused study sessions could make a real difference.
- Build more structured online communities where tutors actively guide discussions, helping students feel less alone and more supported.
- Develop clear guidelines (and gentle reminders) about healthy device use during study time.

These aren't fancy solutions—they're realistic ones that respect the challenges BOU students face every day. If implemented well, they could help more learners thrive rather than just survive in a digital learning environment.

Limitations and Suggestions for Future Research

Like any study, this one has its limits. We worked with a relatively small group of students, so we can't claim these experiences represent every BOU learner. People also shared their thoughts through self-reports and online interviews, which means we might have missed some nuances—no body language or casual follow-ups that happen in person. And virtual conversations sometimes feel a bit less natural.

Moving forward, it would be valuable to combine surveys with actual data (like app usage logs or grades over time) and follow students for longer periods to see how things evolve. Including more voices—especially from women in rural areas—would give a fuller picture of equity issues. Comparing BOU with other open universities could also reveal what works best in different settings.

Conclusion

In the end, smart devices and the internet are neither heroes nor villains for BOU students—they're tools that reflect how we use them. When approached with intention and support, they open up incredible opportunities for learning and growth. Without boundaries, though, they can quietly chip away at focus, connection, and progress. The good news is that small, thoughtful changes—like better-designed content, practical training, guided online spaces, and clear guidelines—can tip the balance toward the positive. By putting students' real lives at the center, BOU has a chance to make distance learning not just accessible, but truly empowering. In a world that's increasingly digital, that's the kind of inclusive education that can change lives.

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