International Journal for Research Trends in Social Science & Humanities
Volume 4, Issue 3
May-june- 2026, PP 1-21

The Impact Of Social Media Context-Switch Otifications On Students' Reading Attention And Comprehension: A Case Study of University Students in Uganda.

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Abstract- There is a growing concern among parents and educators regarding students reading attention and comprehension in the face of continued use of social media, including unprecedented switching from academic work to social media; replacing their reading time with entertainment and /or chatting with friends. This study investigated the effects of social media context-switch notifications on university students' reading attention and comprehension across university students in Uganda. The study utilized cross-sectional explanatory design using interview guides, a standardized academic reading passage, a reading comprehension test, an attention observation checklist, individual's gadgets' notifications tuned on. This is what simulated fulltime social media alerts. A total of 320 students from Gulu University, Mountains of the Moon university, St. Johns Baptist Ggaba Teachers' Institute, Rwenzori International University, and Victoria University were sampled using stratified random sampling. Data was collected using a controlled reading task, a reading comprehension test, and a notification exposure checklist. Findings revealed that students frequently switched from reading activities to respond to what they deemed essential, following social media notifications. This significantly reduced sustained reading attention, concentration and comprehension. The study concludes that context-switch notifications act as cognitive disruptors, not only during academic reading, but also during other reading activities. Institutions should emphasize student self-regulation strategies, guiding them to disable all social media notifications to ensure digital literacy remains uninterrupted.

Keywords: Context-switch notifications, social media, reading attention; reading comprehension, reading concentration, university students.

I. Introduction

1.1. Background of The Study

Globally, use of social media is unchallengeable. There is rapid growth of social media usage among all ages. This has transformed how individuals access and share information as well as how long they can concentrate on a given task. Students at all levels are daily entangled in social media use, most especially, within higher education environments. Several social media platforms are used to share information, for social purposes, informal, and formal reasons through short text messages, voice mails, audio and video calls and occasionally for meetings. Facebook, Instagram, TikTok, WhatsApp, and YouTube are platforms widely used by students to communicate, share information, and entertain themselves (Campbell, 2018). It should be noted that social media offers numerous benefits such as instant communication, access to information, knowledge sharing, and engagement. However, its influence and effects on students' learning and /or reading using internet connected gadgets, as the case is at university campuses where Wifi is provided freely to students, raises concerns about students'

concentration, academic performance, and overall cognitive development (Keles, McCrae, & Grealish, 2020).

Ghana Statistical Service (2021), indicated that about 89% of young adults between the ages of 18 and 35 were actively engaged in social media use by 2015. This is precisely an overwhelming percentage of University going students, the most youthful population that is expected to do well in school.

In the East African region, social media has significantly influenced various aspects of society, including the political atmosphere. It heavily influences information-seeking and sharing behaviour among young adults and the youth, facilitating quick access to diverse content despite concerns about reliability (Duncan Mbeeria, 2024). Besides reliability, there are also concerns regarding suitability, given that young brains may be vulnerable to damaging content (Kuss & Griffiths, 2021).

In Uganda, platforms like Facebook, which was heavily used by many people because of its friendliness even with low-cost gadgets, was banned in January 2021 by President Yoweri Kaguta Museveni ahead of the presidential elections when he accused face book of bias and interfering in Uganda's political affairs. While this ban should have reduced the number of users, many Ugandans opted to use virtual private networks (VPN) to access face book. So, it is still being used privately but with a big number now using WhatsApp, Instagram, You Tube, twitter (X) and TckTok. In addition, internet accessibility has expanded significantly, with increasing smartphone penetration even in rural and semi-urban areas (NITA-U, 2022). Social media has become an integral part of daily life for people of all ages, including children in primary schools, especially in urban settings. While the government of Uganda is pursuing the digital agenda, which was launched on August 22, 2024, in which digital tools such as smartphones, tablets, and laptops will be used at secondary and primary levels, it will only be under controlled conditions, where students won't be allowed to use these gadgets outside the planned lesson or class agenda. This won't affect usage among University students. In the Universities studied, a student was free to use his / her phone, computer even during the lesson. Some of the work including assignments and examinations, as for Victoria University was uploaded and students have to use their gadgets to access assignments, examinations and other resources. Sometimes, social media usage been found not for the intended learning agenda but to chat with friends, watch cartoons, create videos, watch nudes, and many other amusing sites. According to Uganda's Daily Monitor (September 02, 2023), by early 2023, there were approximately 2.03 million social media users, representing 4.3% of the total population. Given that 78% of Uganda's population is under the age of 30, a substantial portion of these users are young people, many of whom in universities (UBOS, 2023).

In many urban centres, students are increasingly exposed to social media through personal devices, computer labs, and community-based digital hubs, which provide free Wifi.
While these platforms, free community internet hubs and free University Wifi facilitate communication and information sharing, the notification systems from the numerous sites used by students frequently interrupt academic activities, including reading and comprehension. Context-switch notifications demand immediate attentional shifts,

potentially disrupting cognitive processes necessary for sustained reading, concentration and comprehension. Although global research has raised concerns about digital distractions, limited empirical studies have isolated the specific effects of notification-induced interruptions on reading outcomes, especially within African university contexts.

In this study, the researcher was exploring the effects of social media context-switch notifications on students' reading attention and comprehension among University students in Uganda.

1.2. Problem Statement

There is a conspicuous increase in the use of social media among students in higher education in Uganda. The challenge goes down to even younger learners in primary and secondary schools raising great concerns about the potential impact of social media usage on academic concentration and the eventual performance and well-being of the learners. While these platforms offer learning opportunities, students in universities seem to have become fully addicted to them to a level that they keep interfering with their learning. But also, aware that, when we behold, we get changed, it is worthwhile to note that what students are exposed to in the home and school does not leave them the same.

The biggest concern is on the negative impact of social media notifications and how it can interrupt reading or academic concentration diverting the student to watching (as for Tik-Tok), chatting (as for WhatsApp, face book, telegram, Instagram and others) and also creating videos and other non-academic posts in response to notifications that are always intrusive. It should be noted that many students at home and campus spend significant time on social media at the expense of their studies. Yet still, even the little time they tend to devote to reading or working, there notifications that keep coming alluring them to switch onto social media to respond. In the end, much time is devoted to non-academic work instead of working on assignments and homework activities. Yet also, health experts have warned users about excessive screen time, which is associated with reduced attention spans, lack of focus, and poor academic performance (Orben & Przybylski, 2019).

It is worth noting that University students increasingly engage in academic reading because of the nature of learning at higher levels of education. They are involved in research which requires them to turn pages and pages, looking for facts here and there and reviewing other scholars' work. They have assignments to write with critical deadlines to meet. Yet also, they are exposed to different social media platforms which keep sending notifications frequently. Interruptions of this kind may fragment attention and concentration, and impair comprehension, yet higher education institutions often lack empirical evidence to inform policy, pedagogy, and student support interventions. Existing studies tend to emphasize general screen time or multitasking rather than the cognitive cost of notification-driven context switching. This gap necessitated a focused investigation into how social media context-switch notifications influence reading attention, concentration, and comprehension among university students in Uganda.

1.3. Purpose of the Study

This study was taken entirely to examine the effects of social media context-switch notifications on university students' reading attention and comprehension.

1.4. Objectives of the Study

1. To examine the effect of social media context-switch notifications on students' reading attention.
2. To examine the effect of social media context-switch notifications on students' reading comprehension.
3. To compare reading performance between students exposed to notifications and those not exposed.

1.5. Research Hypotheses

1. Social media context-switch notifications have a significant effect on students' reading attention.
2. Social media context-switch notifications have a significant effect on students' reading comprehension.

1.6. Justification of the study

The rapid growth of social media usage among university students in Uganda has introduced new challenges to academic engagement, particularly in relation to reading attention and comprehension. While previous studies have explored general screen time and multitasking, there is limited empirical research focusing specifically on context-switch notifications and their cognitive effects on learners in higher education within the Ugandan context. This creates a critical knowledge gap that this study seeks to address.

Social media platforms are designed to maximize user engagement through frequent notifications, which continuously compete for students' attention. In academic environments where sustained reading and deep comprehension are essential, such interruptions significantly undermine learning outcomes. Besides these concerns, universities in Uganda lack context-specific evidence to guide policy formulation, instructional design, and student support mechanisms regarding digital distractions.
Furthermore, much of the existing literature is based on studies conducted in developed countries, whose technological environments, student behaviors, and academic systems may differ from those in Uganda. So, this study is justified in its attempt to generate localized, evidence-based insights into how notification-driven interruptions influence students' reading processes.

Additionally, as higher education increasingly incorporates digital tools and online resources, understanding how these technologies affect cognitive functions like attention and comprehension becomes even more urgent. Without such understanding, efforts to integrate technology into learning may inadvertently hinder rather than enhance academic performance.

1.7. Significance of the Study

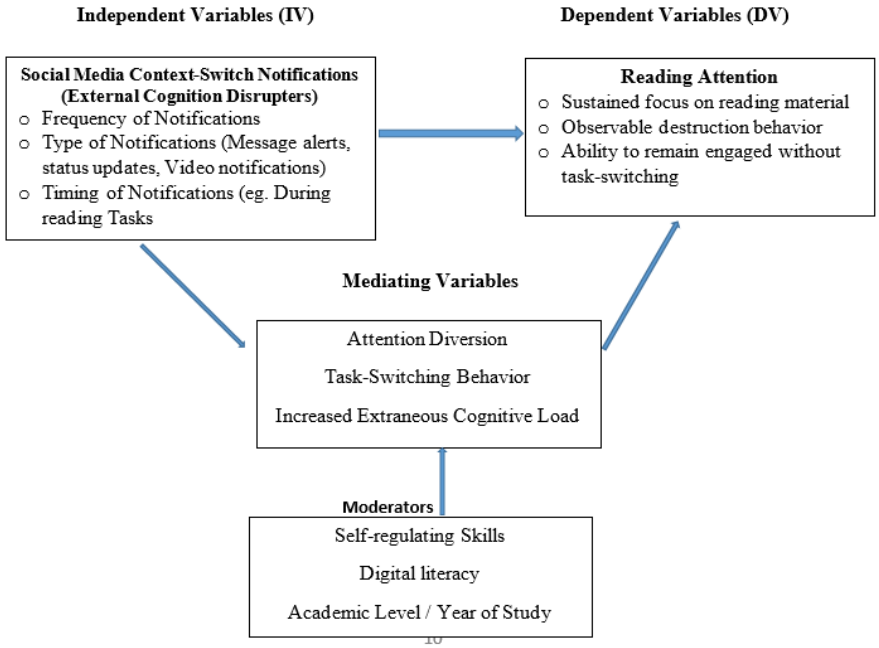
The study will be significant to different stakeholders in education in different ways:
The findings will help students become more aware of how social media notifications affect their reading habits, distract their attention, and comprehension. This awareness may encourage them to adopt better self-regulation strategies, such as managing notifications or scheduling focused study time.

The study insights into how digital distractions impact students' learning processes will inform teaching strategies, such as designing more engaging reading tasks, promoting focused learning environments, and advising students on effective study practices.
University Administrators and Policy Makers will obtain empirical evidence that can guide them in the development of institutional policies on technology use in academic settings. Universities may use the findings to design interventions, such as digital wellness programs and other guidelines on device usage during study and lectures.
Curriculum Developers and planners may make use of the findings to integrate digital literacy and self-regulation skills into academic programs, ensuring that students are equipped to manage technological distractions effectively.

Researchers and Scholars will utilize these study findings to contribute to the existing body of knowledge. They will obtain empirical data on the cognitive effects of social media notifications, particularly within the Ugandan higher education context. It will also open avenues for further research on digital behavior, attention, and academic performance.
Parents and Guardians will be helped to understand the academic implications of excessive social media use so as to encourage them to support students in developing disciplined study habits.

1.8. Conceptual Framework

This study is guided by the conceptual framework shown below, explaining the relationship between social media notifications and learners' reading attention, with attention diversion acting as a mediating mechanism and selected learner characteristics functioning as moderating variables.



The independent variable in this study is social media context-switch notifications, conceptualized as external cognitive disruptors. These include the frequency of notifications, type of notifications (such as message alerts, status updates, and video notifications), and the timing of notifications, particularly those that occur during reading tasks. These notifications are assumed to interrupt learners' cognitive processes by drawing attention away from academic activities.

The dependent variable is reading attention, which refers to the learner's ability to maintain sustained focus on reading material, exhibit observable distraction behavior, and remain engaged without unnecessary task-switching. Reading attention is critical for comprehension, retention, and overall academic performance.
The framework proposes that the relationship between social media notifications and reading attention is partly indirect, operating through a mediating variable, the attention diversion, which includes task-switching behavior and increased extraneous cognitive load. When learners receive frequent or intrusive notifications, their attention is diverted, leading to frequent switching between tasks. This behavior increases cognitive load, thereby reducing the efficiency and depth of information processing during reading activities.

The framework is anchored in Cognitive Load Theory, which posits that excessive external stimuli increase extraneous cognitive load, thereby hindering learning, and Attention Theory, which emphasizes the limited capacity of human attention and the negative effects of task-switching on performance.
Increased exposure to social media notifications leads to reduced reading attention, both directly and indirectly through attention diversion, with the strength of these relationships varying depending on individual learner characteristics.

II. Literature Review

2.1. Introduction

This chapter presents the literature review that links the current study to previous studies, but it also highlights the gaps that need to be addressed. It is arranged according to the objectives and scope of the study, addressing the three objectives that guided this study, that is, the effect of social media context-switch notifications on students' reading attention, reading comprehension and a comparison of the performance between students exposed to notifications and those not exposed. The review is based on different theoretical theories upon which the study is anchored.

2.2. Theoretical Framework

The study regarding the impact of context switch notification on students reading and comprehension was guided by the cognitive and educational psychological theories that describe how external digital stimuli influences attention and learning processes nearly at all levels of higher education. Precisely, the study was guided by the Attention Control Theory and Cognitive Load Theory, with backing from the Context Switching Theory, in explaining the effect of social media context-switch notifications on students' reading attention and comprehension in higher education.

2.2.1. Attention Control Theory

Kahneman (1973), in his Attention Control Theory (ACT), says that attention is a limited cognitive resource that must be allocated selectively among competing stimuli. When multiple stimuli demand attention simultaneously, performance on cognitively demanding tasks such as academic reading declines. Eysenck (1992) also explains how anxiety impairs cognitive performance by disrupting our ability to focus and control attention, and by weakening goal-directed focus (inhibition of distractions, shifting focus) and increasing focus on threats, leading to reduced processing efficiency. Social media notifications are designed to be noticeable and attention-grabbing, thereby competing directly with other tasks for limited attentional resources.

In this study, social media context-switch notifications are the external attention disruptors that divert students' focus away from reading tasks. Pursuant to this theory, such interruptions diminish sustained attention, leading to fragmented reading processes. The theory, thus, provides a theoretical explanation for the observed decline in reading attention among students exposed to notification interruptions and directly augment the effect of notifications on students' reading attention.

Moreover, Nicholas Bouchard, (2024) states that context switching doesn't just lower the quality of your work, rather it hinders your ability to actually get work done. This is because you actually shift from one task to another, one assignment to something else switching in response to notification prompts. The internet ads are also another good example that can derail you from your determined path to what the notification (ad) creator desires you to read.

2.2.2. The Cognitive Load Theory

The study was guided by the cognitive Load theory of an Australian educational psychologist, John Sweller (1988), who suggests that working memory has limited capacity, so instructional design must minimize unnecessary cognitive load to enhance learning. Other theorists like Sweller (1988) and Sweller et al., (2011) similarly explain how learning is constrained by the limited capacity of working memory. The theory distinguishes between intrinsic cognitive load related to task complexity, and extraneous cognitive load imposed by irrelevant stimuli. Learning is most effective when extraneous cognitive load is minimized.

In this study, social media notifications introduce inessential or extraneous cognitive load by interrupting the reading process and forcing learners to repeatedly shift their mental focus. These interruptions disrupt the integration of ideas and hinder deep processing of textual information, thereby impairing reading comprehension. Cognitive Load Theory therefore provides a strong theoretical basis for explaining the significantly lower comprehension scores recorded by students exposed to notification interruptions, directly addressing the second objective of the study.

2.2.3. Context Switching Theory

Altmann and Trafton (2002), explain the cognitive costs associated with shifting attention between tasks. The theory claims that task switching incurs resumption costs, as individuals require time and cognitive effort to re-establish the goals and context of the original task after an interruption. Interruptions call for reorganization on the part of the one disoriented to get on track again. Many a time, after a disruption, it is possible to ask yourself, "Where was I?", "Where had I reached?" "What was I looking for?" requiring that you get back to the drawing board to ascertain where you had reached

and what you were intending to do next. It is a call for flash backs to trigger memory in order to get started again.

As for this study, social media notifications trigger context switches or shifts that not only interrupt reading momentarily but also extend the duration of disengagement. The testimonies from participants during interactions in the interviews that revealed prolonged disengagement with academic tasks for social media platforms after eye-catching notifications align directly with this theoretical perspective. The Context Switching Theory, thus, helps explain why brief notifications can result in sustained loss of attention and incomplete academic tasks, reinforcing the comparative findings between notification-exposed and non-exposed students.

2.2.4. Integration of the Theoretical Framework with the Study Variables

Studied together, these theories explain the pathways through which social media context-switch notifications influence reading performance. Notifications act as external stimuli that turn away attention. They act as disruptive stimuli that automatically capture attention due to their uniqueness and auditory or visual nature, shifting focus from reading to the device, (Attention Control Theory by Eysenck 1992). This increase extraneous cognitive load (Cognitive Load Theory by John Sweller 1988), and impose resumption challenges during task re-engagement (Context Switching Theory by Altmann and Trafton 2002). These mechanisms collectively lead to reduced reading attention and comprehension, thus lowering overall reading performance among students exposed to notifications.

The theoretical framework, therefore, provides a coherent explanatory basis for the study's objectives, methodology, findings, and interpretations.

2.3. Social Media Use and Academic Reading in Higher Education

The explosion in the use of various social media platforms has transformed students' academic and social experiences, particularly in higher education in Uganda. University students increasingly rely on internet-connected devices for academic reading, formal and informal communication, research, and social interactions, through short messaging systems or chats, making them highly predisposed to digital disruptions. Studies have shown that young people and the use of different social media platforms are inseparable. There is also frequent engagement with social media even during academic tasks. In separate cross-sectional study among 996 undergraduate students at Makerere University regarding social media use and alcohol consumption among students, the study found out that 97% of the students used social media, (Edwinah, Maria et al 2022). This followed another study by Dr. Irshad Hussain (2012) in which 600 students of Islamia University of Bahawalpur, Pakistan were studied and 90% was found using face book. It should be noted that during that time, there were fewer social media handles that they are today. Face book was the most common and the study shows that it was highly used by university students. These studies indicate that social media has been widely used by students globally. It is this high level of involvement in the use of social media that has been found impacting students reading concentration, fragmented attention, and poorer academic outcomes (Rosen et al., 2014; Wilmer et al., 2017). The presence of mobile notifications almost all the time creates an environment in which sustained academic reading becomes increasingly difficult, especially where learning and the use of digital platforms becomes inseparable.

2.4. Context-Switch Notifications and Reading Attention

Context-switch notifications are alerts that prompt users to disengage from a primary task and attend to a secondary stimulus, such as a message, status update, or media alert and different adds. Research indicates that such notifications disrupt attentional control by forcing rapid shifts between cognitive tasks (Monsell, 2003). Even brief interruptions can impose significant attentional costs, reducing the ability to maintain sustained focus during reading activities (Mark et al., 2008).

Empirical evidence demonstrates that receiving social media notifications during cognitive tasks significantly diminishes attentional performance. Stothart et al. (2015) found that smartphone notifications impair attention even when users do not respond to them, suggesting that cognitive resources are involuntarily diverted. In academic contexts, these disruptions are particularly detrimental during reading tasks that require prolonged concentration and information integration.

2.5. Effects of Context Switching on Reading Comprehension

Context switching, especially when notifications are not managed or turned off 'kill' focus and fragment attention. When one switches from Task X to Task Y, part of their attention remains stuck on Task X, dividing and reducing cognitive capacity for task Y. Accordingly, a single notification can destroy the 'flow state', which takes significant time to rebuild thereby affecting concentration and comprehension, (Justin Oberbauer, 2025).

Context switching habit creates mental fatigue and increases the likelihood of errors as the brain struggles to refocus on new information. The best way to reclaim one's attention is by having the right tools that you can use to manage notifications. The right strategies and tools will help reclaim your focus, reduce mental fatigue, and accomplish more meaningful work, (Atlassian, 2025).

In a study carried out by Microsoft team found out that a knowledge worker spends less than three minutes on a digital screen before switching to something else. They say that this should not be mistaken for multitasking, but serial theft of attention and a constant reorientation that exhausts the brain and drains the day, (Justin Oberbauer, 2025).

For comprehension, students, like all other readers, require devoted concentration on the subject they are reading. Serious students establish separate, solitary reading spaces to avoid interferences from family and friends. Unfortunates, students and electronic gadgets are inseparable. This makes interruptions inevitable not only through calls but also due to a number of notifications that users keep sending to whoever leaves his / her gadgets free to receive notifications. There are interruptions caused by context-switch notifications which increase extraneous cognitive load, competing with intrinsic processing demands (Sweller, 1988). When students repeatedly switch attention between reading and social media alerts, their ability to comprehend and grasp the content reduces significantly due to fragmented cognitive processing and reduced working memory efficiency.

Rubinstein et al. (2001) established that task switching incurs measurable performance costs, including slower processing and increased error rates. This sometimes ends up in forgetting the task the reader was handling, or a number of regressions. When in academic reading, such challenges manifest in form of reduced comprehension, poor

recall, and shallow engagement with text. Studies on digital multitasking further confirm that students who engage with social media while reading exhibit significantly lower comprehension outcomes compared to those who read without interruptions (Rosen et al., 2014).

Social Media notifications attract attention, which is why they were created. Certain social media platforms employ design features that intensify user engagement through frequent and personalized notifications. When you read with the phone data connected, there are a lot of diversionary tickling alerts that are meant to divert you from what you are doing. WhatsApp, Facebook and other news sites like Phoenix are some of the common social media examples. Montag et al. (2021) argue that addictive design elements, including alert frequency and novelty cues, encourage habitual checking behaviors that undermine academic focus. Platforms such as WhatsApp, Instagram, You Tube, twitter (X) and TckTok which rely heavily on real-time updates and visual stimuli, have been identified as particularly disruptive to students' academic routines. Yet, these are the very sights students heavily use because of their friendly interfaces.
Further studies in African higher education have shown that, increased smartphone access has intensified exposure to such distractions (Mwangangi, 2021). Empirical research examining the specific impact of notification-induced context switching on academic reading remains limited, particularly across multiple universities. What has generally been documented is the low performance of students who take more time on social media than on the books.

2.6. Research Gaps

Although existing literature speaks volumes about the negative influence of social media on academic performance, several gaps persist. First, most of these studies examine general multitasking behaviors rather than isolating context-switch notifications as a distinct mechanism of distraction. Second, there is limited empirical research that focuses on reading attention and comprehension as separate but related constructs and with particular attention to university students. But also, it should be noted that there are few studies that adopt a multi-university and cross-regional approach, particularly within the Ugandan higher education context.
Therefore, this study addresses these gaps by experimentally examining the effects of social media context-switch notifications on university students' reading attention and comprehension across institutions located in central, western, and northern Uganda.

2.7. Summary of the Literature Review

In reviewing the existing literature, the findings demonstrate how social media notifications disrupt attentional control and cognitive processing during academic reading. However, the specific effects of context-switch notifications on reading attention and comprehension among university students remain underexplored. With evidence from studies on cognitive load, attention control, and task-switching theories, this study extends existing research by providing empirical evidence on how notification-induced interruptions affect reading performance across diverse higher education contexts.

International Journal for Research Trends in Social Science & Humanities
Volume 4, Issue 2
Mar-Apr- 2026, PP 1-11

III. Chapter Three: Methodology

3.1. Research Design

The study adopted stratified sampling techniques with disproportionate allocation across the five universities based on accessibility and researcher engagement duration in each university. The study employed stratified sampling by institution to ensure representation from universities across central, western, and northern Uganda. A disproportionate stratified sampling approach was adopted, resulting in varying sample sizes across universities, (Sharon Lohr 2022).

3.2. Sample Size

The researcher used Horvitz Thompson estimator and unequal selection probabilities (1952) as cited by Tille, (2016), where contemporary survey techniques recognize samples drawn from unequal probabilities to increase estimator precision when probabilities are chosen appropriately.

A total of 320 respondents selected, comprised of 40 from Gulu University, 30 from Mountains of the Moon University, 180 from Rwenzori International University, 30 from Uganda Martyrs University, and 40 from Victoria University. The larger sample from Rwenzori International University was due to prolonged researcher engagement and greater accessibility to participants at the institution. Within each university stratum, participants were selected using convenience sampling based on availability and willingness to participate. This approach was considered appropriate because the study is effect-focused rather than being prevalence-focused, allowing national-level representation.

Table 3.01 Sampling Size

Universities	**Sample size**	**Sampling technique**
Gulu University	40	Stratified sampling
Mountains of the Moon University	30	Convenience Sampling
Rwenzori International University	180	Simple random sampling
St. Johns Ggaba Teachers' Institute	30	Disproportionate Sampling
Victoria University	40	Stratified sampling

3.3. Procedure

The Data collection instruments used were interview guides, standardized academic reading passage, a reading comprehension test, an attention observation checklist. These worked meaningfully when the individual respondent's gadget notification key was turned on to simulate social media alerts during reading tasks. Most of these tools were provided in software form to be read from the very gadgets the students used to access social media. Notifications were allowed and participants were in rich of internet connectivity at their campuses. The reading was supervised and observed, and then an interview was conducted later. To ensure consistence, the reading materials and

instructions to participants were the same across all the 5 universities. Some participants, where opportunity was realized were gathered and tested in one place but under supervision. In places where students' schedules weren't permitting gathering them at the same time, individual participants were tested at different times but following the same procedures.

3.4. Data Collection Instruments

In this section, the study outlines the data collection instruments / tools used to examine the effect of context-switch notifications on university students' reading attention, concentration and comprehension.

To achieve the objectives of the study, the researcher utilized a combination of both qualitative and quantitative data collection tools, designed to capture comprehensive information from different students at different university campuses.

3.5. Interview

A semi-structured interview guide was used to collect qualitative data from students in the five universities regarding their reading habits, the nature and frequency of social media notifications. The questions also probed the perceived extent and effects of interruptions on concentrations, concentration and coping strategies students used during academic reading tasks. Students were reached in their convenient places where they were comfortable to respond. Some were found in the lecture halls during their free time, others in the libraries, some in the designated open spaces. Participants were purposively selected from among the very ones who had participated in in the reading tasks. At Rwenzori International University, many students were interviewed over a longer period that the research spent in the university because he taught there. At Gulu, Mountains of the Moon and Uganda Martyrs universities, interviews were conducted within a specified time frame because the researcher went visiting several days in each. While at Victoria university, the researcher had more time with the holiday study students when he taught them. Interviews lasted between 10 – 15 minutes depending on each participant's responses and the level and ways of engagement.

3.5.1. Standardized academic reading comprehension test

This tool was used to quantitatively assess the effect of social media context-switch notifications on students' comprehension of an academic text. The respondents were examined on their ability to extract meaning, interpret details, identify main ideas and make clear inferences after reading. The test was made up of an expository academic reading passage followed by comprehension questions designed to assess literal, inferential, and critical understanding of the text. The passage served as a stimulus material and the accompanying questions were constructed for purposes of measurement. The reading comprehension test was conducted in quiet reading rooms, libraries, lecture halls, designated open spaces across all the five universities. In all these universities, the researcher ensured that there were no external distractions besides the active social media notifications, treated as internal distractions under study.

3.5.2. Reading Attention Observation Checklist

In addition to the standardized academic reading comprehension test, a reading attention observation checklist was used to capture observable indicators of sustained during the reading activity. Behaviors such as gaze diversion, task disengagement and

interruption responses were recorded when observed. This data was used to support and contextualize the comprehension test scores.

3.6. Data Analysis

3.6.1. Quantitative Data Analysis

Quantitative data which was obtained from the standardized academic reading comprehension test were coded and entered into the Statistical Package for the Social Sciences (SPSS) for analysis. The descriptive statistics, including the mean, standard deviations, frequencies, and percentages, were computed to summarize participants' comprehension performance across the experimental and control conditions.

To observe the effect of social media context-switch notifications on students' reading concentration, inferential statistical analyses were conducted. An independent samples t-test was used to compare mean comprehension scores between students exposed to simulated notification interruptions and those who completed the reading task without interruptions.

Statistical significance was determined at the 0.05 alpha level. Effect sizes were computed to estimate the magnitude of the observed effects and enhance interpretability beyond statistical significance.

3.6.2. Qualitative Data Analysis

Qualitative data from semi-structured interviews were also analyzed thematically. Interview responses were transcribed verbatim and subjected to a systematic coding process. Initial open coding was used to identify recurring ideas and patterns related to students' experiences of notification-induced interruptions, perceived diversions and concentration loss, coping strategies, and reading behavior.

Themes were refined to ensure internal consistency and alignment with the study objectives. Descriptive verbatim quotations were selected to illustrate key findings and enrich the interpretation of quantitative results.

3.6.3. Integration of Quantitative and Qualitative Findings

Findings from the interviews (qualitative data) and the standardized reading comprehension passage test and checklist (quantitative data) strands were combined during data interpretation to provide a comprehensive understanding of the effect or influence that social media notifications have on students' reading concentration. Quantitative results helped the researcher to measure the impact of notification interruptions on reading comprehension, while qualitative awareness contextualized these outcomes by shading light on students' lived experiences and attentional challenges in their academic endeavors.

This integrative approach enhanced the explanatory power of the study and strengthened the validity of the conclusions drawn.

Data from the reading attention observation checklist were analyzed descriptively using frequencies and percentages to identify common observable indicators of attentional disruption during the reading tasks. These observations were used to support and triangulate findings from the comprehension test and interview data.

Table 3.1
Comparison of Reading Attention Scores Between Notification-Exposed and Non-Exposed Students

Group	N	Mean	SD	t-value	p-value
Notification-exposed	160	5.42	1.31		
Not exposed	160	7.18	1.24	8.96	< .001

Students exposed to social media context-switch notifications demonstrated significantly lower reading attention scores compared to students who completed reading tasks without notification interruptions.

Table 3.2
Comparison of Reading Comprehension Scores Between Notification-Exposed and Non-Exposed Students

Group	N	Mean	SD	t-value	p-value
Notification-exposed	160	11.36	2.14		
Not exposed	160	14.92	2.07	10.42	< .001

Exposure to social media context-switch notifications significantly reduced students' reading comprehension performance.

Table 3.3
Frequency Distribution of Interview Responses on Notification Disruption

Theme	Frequency (%)
Frequent reading interruption	90.6
Task switching to WhatsApp/TikTok/Instagram/ You Tube/ X	95.2
Delayed task completion	88.4
Reduction in sustained attention	91.8
Overall Effect (Average)	**91.5**

3.6.4. Ethical considerations

Ethical approval for the study was sought and obtained from all relevant institutional officers before interactions with students for data collection. All participants were informed about the purpose of the study, the procedures involved, and all, at every university volunteered to be part. They were also informed of their right to declaim participation before the start or even when the interviews and other data collection procedures were in progress.

In addition, the tools were coded instead of using names to guarantee confidentiality. However, schools and /or departments were captured. Students were not exposed to harmful notifications but only those from the sites they visited. They voluntarily enabled their gadgets' social media notifications for the very sites they visited often.
Foe the standardized reading passage / task, the checklist and the interviews, participants were informed that they were only meant to enrich the study and nothing more besides. Hard copy materials were securely kept by the researcher and soft-copy materials, such as the passages were protected with passwords.

The study paid attention to established ethical principles and etiquettes of conventional standards. The right to ask questions for further clarifications during interviews, the right to withdraw during the exercise, the right to withhold any other information that the participant finds sensitive.

IV. Results

The findings revealed statistically significant differences in reading attention and comprehension between students with active social media notifications which kept flashing on their reading gadgets and those who completed the reading task with disabled notifications. For the later, there were no interruptions. Students in the notification-exposed group recorded lower mean scores in both reading attention and comprehension compared to their counterparts in the non-notification condition. Inferential statistical analysis confirmed that exposure to social media notifications had a negative and statistically significant effect on students' reading performance ($p < 0.05$).

Data from the interviews provided evidence in support of the quantitative findings. In other words, qualitative data from the interviews complemented quantitative data from the reading comprehension passage tests and the reading attention checklists. An overwhelming majority of the participants (over 90%) reported that social media notifications frequently disrupted their concentration during academic activities, particularly when reading was carried out using internet-connected devices - the smartphones and laptops. Participants consistently showed that these notifications elicited shifts or switching from academic tasks, such as reading or even surfing for important information, resulting in prolonged interruptions and reduced task completion.

One participant stated:
"At times, I would switch to WhatsApp and chat with friends endlessly until sleep steals me. When I wake up, I realize I had not completed my tasks, including assignments and other academic work of critical deadline to meet."
Furthermore, about 95% of the respondents identified TikTok and WhatsApp as the most diverting social media platforms, citing frequent and visually or socially appealing notifications such as new video uploads, status updates, and message alerts. These notifications were reported to repeatedly draw attention away from reading tasks, contributing to sustained loss of focus during academic reading sessions.

Overall, the convergence of quantitative and qualitative results indicates that social media context-switch notifications are associated with reduced reading attention and comprehension among university students across the participating institutions.

V. Discussion Of The Findings

The study examined the effect of social media context-switch notifications on students' reading attention, comprehension but also compared performance between students exposed to social media notifications and those not exposed. These study objectives guided the study as well as the discussion of the findings.

5.1. Effect on Students' Reading Attention

The data collected showed that exposure to social media context-switch notifications significantly disrupts students' reading attention. They do not only disrupt their attention but also can upset them depending on the kind of post notification received. Students who received notification interruptions displayed reduced sustained focus during the reading task, as evidenced by lower attention-related performance indicators and corroborated by qualitative accounts from participants. This suggests that notification-induced context switching interferes aren't good for students if they are to maintain their continuous cognitive engagements with academic texts.

These findings can be understood within the framework of attentional control theory, which theorizes that attention is a limited cognitive resource vulnerable to external interruptions. This means that Social media notifications are striking attentional cues that compete and quite often divert academic attention as well as impairing perception and encoding. The live testimonies provided by participants during interviews illustrate how notifications trigger immediate shifts of attention, often leading to extended disengagement from the reading task. Such prolonged attentional lapses suggest that even brief notifications may result in disproportionately large disruptions to sustained academic concentration.

5.2. Effect on Students' Reading Comprehension

Further than attention, the study found out that notifications negatively affected reading comprehension and grasping the content. Students exposed to notifications recorded significantly lower comprehension scores than those who completed the reading task without interruptions. The study showed that comprehension is not only influenced by reading ability but is also highly dependent on emotional stability and uninterrupted cognitive processing.

For a text comprehension when reading, the reader needs to integrate ideas, remember and retrieve previously read information that is connected to the content being read, and then construct coherent mental representations of text. Any interruptions, such as system notifications fragment this process of integrating ideas, forcing students to repeatedly reorient their cognitive focus. During the interviews, some participants narrated instances of repeated switching to platforms such as WhatsApp and TikTok. This highlights how interruptions disrupt deep processing, resulting in superficial reading, fragmentation of ideas because of pauses and reduced understanding. This supports the cognitive load theory, which proposes that interruptions increase

inessential cognitive load, thereby limiting the mental resources available for meaningful learning.

5.3. Reading Performance Comparison Between Students Exposed to Notifications and Those Not Exposed

The comparative analysis revealed that students who completed reading tasks without notification interruptions outperformed those exposed to notifications in both attention and comprehension. This difference underscores the cumulative impact of context-switch notifications on overall reading performance. The group not exposed to notifications benefited from uninterrupted engagement, enabling more efficient processing and better comprehension outcomes.

The consistency of this pattern across students from multiple universities located in different regions of Uganda suggests that the observed effects are not institution-specific but reflect a broader phenomenon among university students. The qualitative data further reinforce this conclusion, as participants from diverse academic and geographical backgrounds reported similar experiences of distraction and task abandonment following notification exposure. However, there were more minor notifications disruptions reported beyond those of social media. Email notifications and message alerts, from telecom service providers and friends were some of them for those who used smartphones.

5.4. Integration of Quantitative and Qualitative Evidence

The merging of quantitative results and qualitative testimonies strengthens the validity of the study's findings. While statistical analyses objectively demonstrated the negative impact of notifications on reading performance, participant narratives provided insight into the mechanisms underlying these effects. The testimonies reveal that notifications do not merely interrupt reading momentarily but often initiate extended engagement with social media platforms, leading to incomplete academic tasks and missed deadlines.

This integration highlights the complex nature of digital distraction, where the initial notification acts as a trigger for prolonged disengagement rather than a brief interruption. Such findings emphasize the importance of examining both measurable outcomes and lived experiences when studying the academic effects of social media use.

5.5. Summary of the Discussion

Overall, the findings suggest that social media context-switch notifications significantly impair students' reading attention and comprehension, resulting in lower reading performance among exposed students. The results underscore the cognitive costs of frequent digital interruptions and raise concerns about the inescapable presence of social media notifications in academic environments.

VI. Conclusion Of The Study

6.1. Summary of the Key Findings

The study investigated the effect of social media context-switch notifications on university students' reading attention and comprehension, as well as differences in reading performance between students exposed to notifications and those not exposed.

The study findings established that exposure to notification interruptions significantly reduced students' reading attention and comprehension levels. Students who completed reading tasks without notification interruptions consistently performed better than those exposed to notification interruptions.

Furthermore, during engagements with participants, they testified that social media notifications often elicited extended disengagement from academic tasks, most especially through WhatsApp and TikTok platforms. These interruptions did not only disrupt sustained attention but also led to failure to complete academic tasks and meeting critical deadlines.

Generally, the study concludes that social media context-switch notifications pose a significant challenge to effective academic reading among university students. Addressing this challenge requires coordinated efforts from educators, students, institutions, and policymakers to foster learning environments that support consistent attention and comprehension.

6.2. Implications for Teaching, Learning, and Policy

6.2.1. Implications for Teaching Practice

The findings of this study highlight the need for educators to recognize the detrimental effects of social media context-switch notifications on students' reading attention and comprehension.

Emphasis on scheduling for every student should be made. Teachers should advise students on how to have specific time / schedule for their daily tasks including the use of social media.

Lecturers and instructors should explicitly encourage focused reading practices by guiding students on how to manage digital distractions during academic tasks. This may include advising students to disable all or non-essential notifications during lectures, reading sessions, and independent study periods.

6.2.2. Implications for Student Learning

For students, the results stress the importance of intentional and planned control over digital environments when engaging with academic work using electronic gadgets or in the presence of such tools.

The study has revealed that uninterrupted reading conditions are the best for deeper academic comprehension and sustained attention. Students should therefore learn to adopt personal strategies like scheduling for uninterrupted study times, turning off all notifications, putting their smart phones in the 'do not disturb' modes, but also consider designated device and internet-free reading time and place. Such practices can improve academic productivity, enhance attention control, aid task completion, but also reduce cognitive load associated with notification-induced distractions.

6.2.3. Implications for Educational Policy

Education policy planners should emphasize integrating digital literacy and self-regulation strategies in the teaching to help students develop greater awareness of how notification interruptions affect their learning processes.

In addition, universities and other higher education institutions should consider developing guidelines that promote responsible digital device use in academic contexts.

Campus policies should include awareness campaigns on digital distraction, incorporation of attention management skills into orientation programs, and support for learning environments that minimize unnecessary digital interruptions.
Policymakers may also consider integrating digital wellbeing frameworks into higher education policies to address the growing influence of social media on academic engagement.

6.3. Recommendations for Future Research

Longitudinal research designs are recommended to assess the cumulative impact of social media notifications on academic performance over time. Additionally, future research could explore intervention-based studies that test the effectiveness of notification management strategies in improving students' attention and learning outcomes. Investigating the role of individual differences, such as self-regulation skills and digital literacy, may also provide deeper insights into how students can better manage digital distractions.
Future studies should consider expanding the scope of participants to include students from other educational levels, such as secondary schools, to examine whether similar effects occur across different age groups.

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International Journal for Research Trends in Social Science & Humanities
Volume 4, Issue 2
Mar-Apr- 2026, PP 1-11