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RESEARCH ARTICLE

Cyberloafing Behavior as A Sustainable Online Distance Learning Challenge

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Abstract. Online distance learning has become an important component of post-pandemic higher education, yet its reliance on internet-connected technologies may also increase opportunities for student cyberloafing. Although cyberloafing has been widely examined in workplace settings, its manifestations and dynamics in online higher education remain less understood, particularly in Indonesia. This study explored the forms of student cyberloafing during online distance learning, its perceived causes and impacts, and the conditions that reinforce its recurrence. An exploratory qualitative design was employed involving 18 active university students with experience in distance learning from universities located in the Greater Jakarta area, Indonesia. The participants were divided into three focus groups, with six students in each group. Data were collected through three focus group discussions conducted on 22–24 June 2023 and analyzed using thematic analysis. Four themes were identified: (1) forms of cyberloafing, including social media use, online entertainment, shopping, gaming, and other off-task online activities; (2) perceived causes, particularly boredom, characteristics and difficulty of learning materials, easy smartphone access, and limited instructor supervision; (3) perceived impacts, including reduced concentration and understanding, additional study time, and short-term psychological refreshing; and (4) reinforcing conditions, including limited consequences, low interaction and supervision, and group norms. These findings indicate that cyberloafing in online distance learning is shaped not only by technology use, but also by motivational, cognitive, and contextual factors. Addressing these factors is important for strengthening student engagement and supporting the sustainable implementation of online learning in higher education.

Keywords: student cyberloafing; online distance learning; digital distraction; student engagement; higher education

INTRODUCTION

Digital technologies are now deeply integrated into higher education, broadening learning opportunities beyond traditional classroom boundaries (Joyce & Feez, 2018; Singh et al., 2024). The COVID-19 pandemic further accelerated this shift by intensifying the use of Information and Communication Technology (ICT) within learning environments (Taneja, Fiore and Fischer, 2015). Although much of this transition initially took place under emergency conditions, it also encouraged universities to reconsider the longer-term role and sustainability of online distance learning in higher education.

It is therefore important to distinguish emergency remote teaching (ERT) from systematically designed online learning. ERT refers to a temporary shift to remote instructional delivery in response to crisis situations, such as those experienced during the COVID-19 pandemic (Hodges et al., 2020). By contrast, online learning is intentionally planned and typically involves deliberate decisions regarding pedagogy, interaction, assessment, learning activities, and student support. In this study, online distance learning (ODL) is used as the operational term to refer to learning activities in which students and instructors interact remotely through internet-based technologies.

Previous studies have identified several benefits associated with digital transformation in higher education. Online distance learning can offer greater flexibility in time and location, promote student-centered learning, and support more personalized learning experiences. It may also encourage students to assume greater responsibility for their own learning and strengthen the motivation needed to achieve positive academic outcomes (Allen et al., 2004; Muhammad et al., 2020). In addition, online distance learning has been associated with higher student satisfaction due to its temporal flexibility (Markova, Glazkova and Zaborova, 2017), while enabling more individualized learning processes and varied forms of interaction among students, instructors, and digital learning resources (Ferri, Grifoni and Guzzo, 2020).

Previous studies have identified several benefits associated with digital transformation in higher education. Online distance learning can offer greater flexibility in time

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and location, promote student-centered learning, and support more personalized learning experiences. It may also encourage students to assume greater responsibility for their own learning and strengthen the motivation needed to achieve positive academic outcomes (Allen et al., 2004; Muhammad et al., 2020). In addition, online distance learning has been associated with higher student satisfaction due to its temporal flexibility (Markova, Glazkova and Zaborova, 2017), while enabling more individualized learning processes and varied forms of interaction among students, instructors, and digital learning resources (Ferri, Grifoni and Guzzo, 2020).

Despite these advantages, technology-mediated learning also increases students' exposure to digital distraction (Laxman and Holt, 2017; Ravizza, Uitvlugt and Fenn, 2017; Feng et al., 2019; Sarıtepeci and Sert, 2021). While attending online classes, students may remain connected to numerous internet-based activities, including email, online news, social networking and virtual communities, messaging applications, entertainment platforms, online shopping, file downloading, real-time updating, and gaming. Previous studies have shown that university students frequently engage in these activities during learning (Kalaycı, 2010; Sheikh, Atashgah and Adibzadegan, 2015; Akbulut et al., 2016; Metin-Orta & Demirtepe-Saygılı, 2023), which may divert attention away from academic tasks and reduce learning efficiency and academic performance. Internet use that is unrelated to immediate learning objectives is commonly described as cyberloafing (Kalaycı, 2010; Taneja, Fiore and Fischer, 2015; Akbulut et al., 2016; Metin-Orta and Demirtepe-Saygılı, 2021). Such off-task use of technology can shift students' attention away from instructional activities, disrupt their engagement with learning materials, and negatively affect academic participation (Taneja, Fiore and Fischer, 2015; Ravizza, Uitvlugt and Fenn, 2017; Feng et al., 2019).

As digital technologies continue to develop rapidly, research on cyberloafing in educational settings must also evolve to reflect changes in students' digital environments and learning practices (Sarıtepeci and Sert, 2021). Recent studies indicate that cyberloafing remains prevalent among university students and should no longer be viewed as a phenomenon confined to the workplace. Research in educational contexts has documented various forms of cyberloafing during lectures and has associated the behavior with boredom, self-regulatory difficulties, e-learning readiness, and student disengagement (Karali et al., 2024).

However, several dimensions of student cyberloafing have not yet been fully integrated into a coherent explanation. First, cyberloafing may result not only from individual difficulties in self-regulation but also from pedagogical mismatches. Students may disengage when learning activities are perceived as too easy, overly difficult, monotonous, or insufficiently interactive. Previous research has repeatedly identified boredom as an important correlate of cyberloafing, including in online learning contexts (Yanti, F.P & Nasution, I.N., 2022). Yet, relatively limited attention has been given to the possibility that both insufficient and excessive task challenges may lead students toward similar forms of off-task online behavior.

Second, cyberloafing may also become normalized through social processes rather than remaining solely an individual behavior. Previous research has shown that subjective norms can influence students' cyberloafing, indicating that perceptions of peer acceptance may shape engagement in off-task technology use (Mihelič et al., 2023). Even so, less is known about how students experience the everyday interpersonal dynamics through which peers may facilitate, tolerate, protect, or normalize repeated cyberloafing during online classes.

Third, the psychological consequences of cyberloafing may be ambivalent. Although cyberloafing can interfere with attention and academic engagement, students may also use short periods of non-academic online activity to reduce boredom, relieve tension, or obtain temporary psychological relief. Recent studies have begun to relate cyberloafing to emotion regulation and recovery processes, suggesting that students may turn to digital activities in response to emotional discomfort or fatigue (Gökçearslan et al., 2023). This does not suggest that cyberloafing is beneficial overall. Rather, it points to a tension between immediate emotional relief and possible longer-term cognitive or academic costs.

These dynamics can be understood through two complementary theoretical perspectives. Self-Regulated Learning (SRL) theory (Zimmerman, 2002) suggests that cyberloafing may reflect difficulties in setting learning goals, managing time, sustaining attention, and regulating behavior throughout the learning process. From this perspective, cyberloafing may occur when students are unable to maintain goal-directed learning in the presence of competing digital stimuli. Easy access to social media, messaging applications, entertainment platforms, and other online activities may create competing demands on students' attention, particularly when internal self-regulatory strategies are insufficient to maintain engagement with academic tasks.

The student engagement framework (Fredricks et al., 2004) provides a complementary explanation by positioning cyberloafing in relation to behavioral, emotional, and cognitive disengagement. Behavioral disengagement may be expressed through reduced participation in learning activities, emotional disengagement may emerge through boredom or detachment, and cognitive disengagement may involve lower investment in understanding instructional content. Taking together, these perspectives suggest that cyberloafing should not be viewed simply as a matter of classroom discipline. Instead, it can be understood as a behavior shaped by interacting motivational, cognitive, emotional, pedagogical, and contextual processes within digital learning environments.

The present study also identifies an important issue concerning the mismatch between task challenge and students' perceived capabilities. Cyberloafing may occur when learning materials are perceived as either too easy or too difficult. This pattern can be further interpreted through Control–Value Theory (CVT) of achievement emotions, which proposes that students' achievement emotions are shaped by their perceptions of control over learning activities and the value attached to those activities (Pekrun, 2006). When learning activities provide insufficient challenge, students may experience boredom because the task does not demand sufficient cognitive investment. Conversely, when tasks are perceived as excessively difficult and students experience low control over successful completion, negative achievement emotions such as frustration or hopelessness may emerge. CVT therefore provides a useful explanation for why apparently opposite instructional conditions may both weaken students' engagement with the immediate learning task.

Whereas many previous studies have examined cyberloafing primarily through quantitative survey designs, the present study addresses a methodological gap by adopting a qualitative approach. Through focus group discussions, the study explores students' subjective

experiences, contextual influences, and perceived motivations underlying cyberloafing in online learning environments. This approach allows for a more detailed understanding of how cyberloafing is experienced, interpreted, and repeated from the students' own perspectives, thereby offering both theoretical and practical insights into student engagement in online distance education.

Accordingly, this study aimed to explore university students' experiences of cyberloafing during online distance learning in the Greater Jakarta area, Indonesia. Specifically, the study addressed the following research questions:

RQ1. What forms of cyberloafing do university students engage in during online distance learning?

RQ2. What psychological and pedagogical factors do students perceive as triggering cyberloafing?

RQ3. What consequences of cyberloafing do students perceive during online distance learning?

RQ4. What do individual, instructional, and social conditions contribute to the recurrence of cyberloafing behavior?

METHODS

Participant characteristics and research design

This study employed an exploratory qualitative research design to develop an in-depth understanding of students' experiences during online distance learning in the context of higher education in Indonesia. A qualitative approach was considered appropriate because the study sought to explore students' experiences, perceptions, and meanings related to their learning behavior in online distance learning, rather than to test predetermined hypotheses or predefined categories of behavior.

Focus group discussions were used as the primary method of data collection because they allowed participants to reflect on and discuss shared experiences of technology-mediated learning. The interaction among participants was expected to facilitate the recall of situations, behaviors, and contextual factors that might not emerge as readily through individual responses.

Sampling procedures

Participants were recruited through an open recruitment process. Information about the study and the invitation to participate were distributed to prospective participants, who were then asked to complete an online registration form. The form was used to collect basic eligibility information related to the study criteria. After the recruitment deadline, the researchers reviewed all submitted registrations and identified 18 students who met the inclusion criteria. The inclusion criteria were limited to being an active university student, being enrolled at a university located in the Greater Jakarta area, and having prior or current experience with online distance learning. Participants were not selected on the basis of prior identification as individuals who engaged in cyberloafing. Instead, the study was designed to explore students' online learning experiences naturally, allowing patterns of off-task internet use and cyberloafing to emerge from participants' own accounts during the discussions. This approach was consistent with the exploratory nature of the study and avoided restricting participation only to students who had previously labeled or recognized their own behavior as cyberloafing.

Sample adequacy

As this study used a qualitative exploratory design, sample size was not determined through statistical power analysis. Instead, the number of participants was determined based on the suitability of the participants to the research objectives and the need to generate rich and meaningful qualitative data. A total of 18 participants was considered appropriate for focus group research, as the participants could be divided into three groups of six members, allowing sufficient interaction while maintaining manageable group dynamics.

The use of three separate focus groups also served as a form of data triangulation. By comparing discussions across groups, the researchers were able to identify recurring patterns, similarities, and differences in participants' accounts. In this qualitative context, precision refers not to statistical estimation, but to the depth, richness, and consistency of the data generated across focus group sessions.

Measures

Data were collected using a semi-structured focus group discussion guide developed by the researchers. The guide was designed to direct the discussion toward key issues related to cyberloafing behavior in distance learning while allowing flexibility for participants to elaborate on their experiences and perspectives. The guide covered key domains related to participants' online learning experiences, forms of non-learning-related internet use, perceived triggers, consequences, and conditions associated with the recurrence of such behavior, while still allowing participants to elaborate on issues that emerged during the discussion. For example, participants were asked: "During online distance learning, have you ever used the internet for activities unrelated to the learning material? If so, what kinds of activities did you engage in, how often did they occur, and what usually led you to do so?" Participants were encouraged to describe their experiences whether or not they had engaged in such activities. The semi-structured format allowed the facilitator to adapt the sequence and wording of questions according to the dynamics of each group and to use follow-up prompts where further clarification or elaboration was needed.

The focus group sessions were facilitated by members of the research team and supported by final-year undergraduate student assistants who had successfully completed coursework in qualitative research methodology and served as co-facilitators. All sessions were recorded and later transcribed verbatim for analysis. Three focus group discussions were conducted: two face-to-face sessions on June 22–23, 2023, and one online session via Zoom Cloud Meeting on June 24, 2023, with each session lasting approximately 1.5 hours. The face-to-face discussions were conducted on the research team's university campus in closed settings, while the online session was also conducted as a closed meeting to maintain participant privacy. Because the face-to-face and online formats could differ in interactional flow, turn-taking, access to non-verbal cues, and depth of responses, the researchers did not assume that both modes produced identical discussion conditions. Instead, recurring and contrasting experiences were compared across the three groups during analysis to identify patterns that were consistent across discussion

modes and to consider possible mode-related differences in participants' accounts.

Data analysis

The data were analyzed using thematic analysis. This method was selected because it allows researchers to identify, analyze, and interpret patterns of meaning within qualitative data. The analysis followed the six stages of thematic analysis proposed by Clarke dan Braun (2017): familiarization with the data, generation of initial codes, development of potential themes, review of themes, definition and naming of themes, and report writing.

All focus group discussions were recorded and transcribed verbatim. During the familiarization phase, the four members of the research team repeatedly read the transcripts to develop an overall understanding of participants' experiences and the context in which their accounts were expressed. The researchers then examined meaningful segments of participants' statements related to their experiences, behaviors, perceptions, and contextual conditions during online distance learning and generated initial codes from these data. The coding process was primarily data-driven, allowing patterns to emerge from participants' accounts rather than being imposed solely through predetermined theoretical categories. Conceptually related codes were subsequently grouped into broader categories and developed into potential themes. Through iterative discussion among the four researchers, the candidate themes were reviewed for internal coherence, distinction from one another, and consistency with both the coded extracts and the overall data set. The themes were then refined, defined, and named to represent the central patterns emerging from the data.

Cyberloafing subsequently emerged as a recurring behavioral pattern across participants' accounts and became the central phenomenon examined in the analysis. This process resulted in four overarching themes: the forms of cyberloafing, the perceived causes of cyberloafing, the perceived impacts of cyberloafing, and the conditions reinforcing its recurrence. The final findings were presented narratively and supported by relevant verbatim excerpts from the focus group discussions. To strengthen the trustworthiness of the analysis, recurring and contrasting accounts were compared across the three focus groups, all four members of the research team were involved in coding and theme development, and interpretations were continuously checked against the original transcripts and participant quotations. Possible differences between the two face-to-face focus groups and the online focus group were also considered during interpretation, particularly when examining whether similar or contrasting patterns appeared across discussion modes. The involvement of trained facilitators and co-facilitators further supported consistency in the data collection process across sessions.

Describe the data analysis techniques used in the study. Report any other analyses performed, including adjusted analyses, indicating those that were prespecified and those that were exploratory (though not necessarily in level of detail of primary analyses)

RESULTS OF STUDY

The three focus group discussions generated four interpretive themes describing how cyberloafing emerged, was experienced, and was sustained during online distance learning. Quotations are identified using a group-participant code; for example, T1.S5 refers to Participant 5 in Focus Group 1. The four themes are presented in the following sections.

Theme 1 –Shifting Attention from Academic Tasks to Competing Digital Activities

Addressing RQ1, this theme captures participants' shifts of attention from the immediate learning task toward competing digital activities during online distance learning. Social media use, particularly through Instagram and WhatsApp, was one recurring manifestation of this shift, with participants describing activities such as checking feeds, reels, stories, and other updates while class was ongoing.

> *"... when I open the Instagram, it will be a random viewing. It can be the feeds, reels, or stories." (T1.S5)*
> *"Oh, opening the social media is a certain thing, Although I only open the IG for a minute." (T2.S6)*
> *"... so, sometimes it is just, what we call it, random while opening the Instagram or the others..." (T3.S1)*

Furthermore, messaging was commonly reported by participants when accessing WhatsApp during online classes.

> *"... I sometimes chat the other groups or persons to divert the topics of the class, just like that..." (T1.S4)*
> *"... I only open the WA and IG, so I can directly reply to the incoming messages from the organization, just in case I will forget it later..." (T2.S1)*
> *"If so, it will just like chatting in the group-chat..." (T3.S4)*

Besides that, the checking moments activity while opening WhatsApp is also found among the participants.

> *"... I open the WhatsApp the more, either to discuss something or when it gets too boring, I will open my friends SG/SW..." (T1.S4)*

The other social media applications that are accessed by students during online distance learning are Twitter, TikTok, and Telegram. The form of activities that are also found while accessing social media is updating the microblog and reading the articles in community groups.

> *"... then I open the Twitter to see what trending is... and open the TikTok after that to look for something that goes viral..." (T1.S3)*
> *"In telegram there is some kind of board, I sometimes open the Telegram to listen to some music." (T1.S4)*
> *"... there are more of them who use the internet to open the social media just to update the status of them studying in the class..." (T1.S3)*
> *"... I myself have the group of MSIB class and I often check if there are some information related to our discussion and open the SI group-chat due to its notifications..." (T1.S1)*

The other cyberloafing activities of the students in this study are watching online videos, streaming music, online shopping, gaming, and reading digital comics

> *"... I even see it myself that there are some students updating the WA status during the class and they are watching some movies. Hehe" (T1.S2)*

"For me, I will only listen to some music or open the WA..." (T1.S2)
"E-commerce." (T2.S6)
"Sometimes one of my friends will ask, "are you bored or not?" "So bored" "Let's log in then", and then we will play games or anything..." (T3.S4)
"... playing with other applications such as games, or reading some comics

Participation in online seminars emerged as a more ambiguous form of cyberloafing in this study. Unlike clearly recreational activities such as gaming, entertainment, or online shopping, attending an online seminar may still represent academically oriented engagement. However, when such participation occurred during an ongoing class and was unrelated to the immediate learning task, it reflected a shift of attention away from the scheduled instructional activity. Therefore, rather than being classified as purely recreational cyberloafing, online seminar participation may be more appropriately understood as off-task academic engagement, highlighting that cyberloafing in educational contexts can include activities that are academically relevant in a broader sense but misaligned with the immediate learning objective.

Theme 2 –Disengagement under Mismatched Levels of Learning Challenge the Cause of Student Cyberloafing During Online Distance Learning

Addressing RQ2, this theme captures the psychological and pedagogical conditions that participants perceived as triggering cyberloafing. Boredom emerged as a prominent trigger, particularly when online classes were perceived as less interactive, prolonged, or poorly matched to students' perceived levels of challenge.

"If the lecturer never talks to the students, only to the screen, we will be more than happy to leave him alone. Hehe. Won't we?" (T1.S5)
"... sometimes it gets too boring. I will feel like "ah, it is getting too long" or "ah, I know that already", so I will open the social media..." (T1.S1)
"... when the lecturer is monotone or boring or talk too much about his personal things, I open the social media then." (T2.S6)
"... sometimes the lecturer gives too much of an explanation or too long and we get bored of that; we will kill the boredom by opening the applications..." (T3.S3)

Another factor contributing to cyberloafing is the perceived simplicity of the learning materials. When the content is too easy, students often prefer to engage in self-directed learning at their own pace and convenience. As a result, they are more likely to engage in cyberloafing during live class sessions. This behavior is further supported by the ease of recording lessons and accessing course materials online, which enables students to review content later without actively participating during scheduled class time.

"... so, I feel that I have understood the material and emm... I just knew it. So, I open social media during the class. Or if the material can be browsed on the internet or seen on google, maybe I can just ignore it hehehe just that..." (T1.S1)
"... Most of the lecturers or other fellow students only read what is on their PPT, that way I can learn by myself" (T2.S1)
"... Usually, the one with the best internet connection will record the class, so whenever we want to watch it over, we just need to check the gdrive." (T3.S4)

Meanwhile, materials that are too difficult also encourage students to engage in cyberloafing.

"... it is because the lecturer's explanation is too hard to understand and we really do not know the material like "what is he saying?', and we just search or browse it and when it is too hard then we do the cyberloafing, chatting or anything..." (T3.S1)
"And then when we feel like we cannot understand the explanation, it is better to ask other friends who understand. We just try to find the easiest way because we are too lazy, right?" (T3.S4)

Other reasons for cyberloafing during online classes include the convenience of accessing smartphones

"... It is too relaxed and loose, so the students tend to do that, maybe there are some of them who is really studying, but I am sure that the majority of the students open the social media..." (T1.S2)
"There is some reason, because we have nothing to do while waiting for the answers from the chat. Moreover, the handphone is very easy to access." (T2.S1)
"Usually, when the lecturer does not pay attention to us, we do the same way." (T3.S4)

Theme 3 –Short-Term Emotional Relief with Perceived Cognitive and Academic Costs

Addressing RQ3, this theme captures how participants reflected on and evaluated the perceived consequences of their cyberloafing during online classes. Participants described brief engagement in non-academic online activities as providing short-term emotional relief, particularly when they felt bored, mentally fatigued, or disengaged from prolonged learning sessions; however, this temporary relief was accompanied by perceived cognitive and academic costs. Cyberloafing was described to refresh the mind, seek entertainment, or momentarily escape from monotonous learning situations.

"... just to refresh our mind if it is getting boring and we need to escape and find some entertainment..." (T1.S1)
"... when the lecturer gives us a full 2-hour class, naturally we will try to find something to refresh our mind." (T2.S5)
"... to get the brain a break for a while, because I sometimes feel that when I feel bored, my brain will reject all of the material and lesson." (T2.S4)
"... just to not get bored, because when we take a long time to focus, we will get bored..." (T3.S5)

At the same time, participants also associate cyberloafing with perceived cognitive and academic costs. Several participants reported that shifting attention between learning activities and other digital applications made it more difficult to maintain concentration and fully understand the instructional material.

"... the first thing I realize is that I do not really understand..." (T1.S3)
"... so, it can be said that we do not get the full material and actually we are not a multitasker, so it is hard to focus on two things all at once..." (T2.S3)

"... so, we cannot focus. Let's say we go from one application to another, we cannot focus on the class, we focus on the applications instead." (T3.S5)
"... it feels like our own grade is decreased because we are considered to not paying attention to the class. The impact is our grade decreasing..." (T1.S2)

Participants also perceived that reduced attention during class could create additional academic demands afterward. Some reported needing to revisit or relearn material that they had not fully followed during the session, which they experienced as an additional use of time.

"And then I have to find another time to study, so I need more time definitely..." (T1.S3)
"... I do not understand the lesson and have to take another time to re-study the material, if I remember..." (T2.S3)
"... I feel like regret it since I waste my time." (T3.S5)

Theme 4 – Normalization of Cyberloafing through Weak Accountability and Peer SupportThe Reinforcers That Caused Cyberloafing Behaviour to Be Repeated

Addressing RQ4, this theme illustrates how cyberloafing became recurrent through the interaction of weak accountability, limited external regulation, and peer-supported avoidance. Participants described the behavior as easier to repeat when it occurred without serious consequences, suggesting that low accountability and limited supervision could reinforce cyberloafing over time and contribute to its normalization within online learning routines.

"Because I think that the impact is not very pronounced, I will keep doing this. Hehehe." (T1.S2)
"Nobody scolds me, so just continue this." (T3.S4)
The lack of interactions and less supervision in the online class take part in amplifying the cyberloafing activity.
"It is kind of hard to track the students. They do appear on the screen, but we do not know if they are searching or doing other things." (T3.S1)
"Usually, when the lecturer does not pay attention to us, we do the same way." (T3.S4)

Group norms also become the reason for the cyberloafing habit of students during online class.

"... sometimes the other friends back us up, such as tagging us in class's group chat and tell us, "The lecturer calls you", and we can directly answer the question. Or in the other case, they will tell the lecturer that we are going to the bathroom or anything. They are helpful, really..." (T3.S4)

These accounts suggest that cyberloafing was not always sustained solely at the individual level. In some cases, peers actively enabled avoidance by alerting participants when lecturers called on them or by providing socially acceptable explanations for their absence, indicating that cyberloafing may become embedded in group norms and maintained through peer-enabled protection. Such peer support appeared to operate alongside other reinforcing conditions that reduced the perceived costs of disengaging from the class.

When cyberloafing occurs without meaningful consequences, close monitoring, or accountability, the behavior could become easier to repeat and gradually be perceived as a normal part of online learning routines. In this sense, the recurrence of cyberloafing was not driven by a single factor, but by the combined influence of peer-enabled avoidance, weak accountability, and the absence of serious consequences for engaging in off-task behavior.

"After about three months up till now it is getting very intense, I can do this in every class..." (T1.S3)
"... it feels normal. Let's say we are on zoom class, and we open another social media..." (T3.S3)

The thematic analysis generated four main themes that captured how cyberloafing was experienced and sustained during online distance learning: (1) shifting attention from academic tasks to competing digital activities, (2) disengagement under mismatched levels of learning challenge, (3) short-term emotional relief with perceived cognitive and academic costs, and (4) normalization of cyberloafing through weak accountability and peer support. These themes reflect not only the forms of cyberloafing reported by students, but also the psychological, pedagogical, and social processes associated with its emergence and recurrence. A summary of the four themes is presented in table 1.

DISCUSSION

The findings of this study suggest that cyberloafing during online distance learning is shaped by the interaction of instructional characteristics, task appraisal, self-regulation, technological affordances, and social context. Participants described shifting their attention from academic tasks to social media, messaging applications, online shopping, gaming, digital comics, online videos, and music streaming. These activities broadly correspond with previously identified dimensions of student cyberloafing, including sharing, shopping, real-time updating, accessing online content, and gaming (Akbulut et al., 2016). Rather than treating social media use as the central finding, however, the present results indicate that such activities represent one part of a broader pattern in which readily accessible digital alternatives compete with students' engagement in the immediate learning task.

Participation in online seminars represented a more ambiguous form of cyberloafing. Unlike recreational activities such as gaming, entertainment, or online shopping, attending another academic seminar may still represent academically oriented engagement. However, when such participation occurred during an ongoing class and was unrelated to the immediate learning task, it reflected a shift of attention away from the scheduled instructional activity. It may therefore be more appropriately understood as off-task academic engagement rather than purely recreational cyberloafing. This finding broadens the interpretation of cyberloafing in educational settings by suggesting that the defining issue is not necessarily whether an online activity is academic or non-academic in a general sense, but whether it is aligned with the immediate learning objective.

The findings further indicate that cyberloafing was closely associated with students' perceptions of the learning situation. Participants described boredom particularly when online classes were prolonged, less interactive, or insufficiently engaging. This pattern is consistent with the Student Engagement framework, which

conceptualizes engagement as involving behavioral, emotional, and cognitive dimensions (Fredricks et al., 2004). Boredom may reflect weakened emotional engagement, while shifting attention toward unrelated digital activities may indicate behavioral disengagement. Participants' perceptions of reduced concentration and incomplete understanding may also reflect weaker cognitive engagement with instructional content. Previous research has similarly indicated that greater interaction in online learning is associated with student motivation, satisfaction, and participation (Espasa and Meneses, 2010; Offir, Lev and Bezalel, 2008). More recent research has also identified cyberloafing as an important correlate of disengagement from online courses, reinforcing the relevance of examining cyberloafing as part of the broader engagement process rather than simply as inappropriate internet use.

Table 1. Description of Themes

Theme	Definition	Subtheme	Examples	Representative Quote	Groups
Shifting Attention from Academic Tasks to Competing Digital Activities	Movement of attention from the immediate learning task toward unrelated or competing digital activities	Social media, messaging, entertainment, shopping, gaming, off-task academic activity	Instagram, WhatsApp, TikTok, games, online seminars	*"…when I open Instagram, it will be random viewing. It can be the feeds, reels, or stories."* (T1.S5)	FG1, FG2, FG3
Disengagement under Mismatched Levels of Learning Challenge	Withdrawal from learning when task demands are perceived as too low, too high, monotonous, or weakly interactive	Boredom, underchallenge, overchallenge, low interaction	Easy material, difficult material, long lectures	*"…sometimes it gets too boring. I will feel like 'ah, it is getting too long' or 'ah, I know that already,' so I will open the social media…"* (T1.S1)	FG1, FG2, FG3
Short-Term Emotional Relief with Perceived Cognitive and Academic Costs	Cyberloafing as temporary relief accompanied by perceived loss of focus and understanding	Refreshing, entertainment, reduced concentration, re-learning	Social media breaks, entertainment	*"…we do not get the full material and actually we are not a multitasker, so it is hard to focus on two things all at once…"* (T2.S3)	FG1, FG2, FG3
Normalization through Weak Accountability and Peer Support	Repetition of cyberloafing facilitated by low consequences, weak supervision, and peer-enabled avoidance	Weak accountability, low supervision, peer protection, group norms	Friends alerting participants, absence being covered	*"…sometimes the other friends back us up, such as tagging us in class's group chat and tell us, 'The lecturer calls you,' and we can directly answer the question. Or in the other case, they will tell the lecturer that we are going to the bathroom or anything. They are helpful, really…"* (T3.S4)	FG1, FG3

The present findings can also be interpreted through Self-Regulated Learning (SRL) theory. SRL emphasizes students' capacity to regulate attention, time, motivation, and behavior in pursuit of academic goals (Zimmerman, 2002). From this perspective, participants' accounts of repeatedly switching between learning activities and competing digital applications may reflect difficulties in attentional control and distraction management. The ease of accessing smartphones and internet-based applications provides immediate alternatives to the academic task, but the availability of such technologies alone does not determine cyberloafing. Rather, students must continuously monitor and regulate their own behavior to maintain goal-directed learning. Recent evidence similarly suggests that e-learning readiness and emotion-related processes are associated with in-class smartphone cyberloafing, supporting the relevance of self-regulatory mechanisms in technology-mediated learning (Gökçearslan, Yildiz Durak and Esiyok, 2023).

An important contribution of the present findings concerns task-challenge mismatch. Participants reported engaging in cyberloafing not only when learning material was perceived as too easy, but also when it was perceived as excessively difficult. This pattern can be interpreted through Control–Value Theory, which proposes that achievement emotions are influenced by students' perceptions of control and value in relation to academic activities (Pekrun, 2006). More recent developments of the theory explicitly recognize that boredom may arise under both underchallenging and overchallenging conditions when task demands are poorly matched to students' perceived competence (Pekrun, 2024). Thus, insufficient challenge may reduce cognitive investment and generate boredom, whereas excessive challenge may reduce perceived control and contribute to frustration, hopelessness, or disengagement. In both cases, cyberloafing may become an immediately available alternative to sustained engagement with the task.

Participants also described cyberloafing as providing temporary relief from boredom or mental fatigue. This finding should be interpreted cautiously. Earlier workplace literature suggested that brief non-work internet use may provide short periods of recovery or relief from boredom and fatigue (Greenfield and Davis, 2002; Block, 2001; Bakker, Demerouti and Verbeke, 2004). However, in the present study, such effects were based on participants' subjective perceptions rather than objective indicators of recovery or performance. More recent educational research has connected cyberloafing with emotion regulation and e-learning readiness, suggesting that students may turn to

digital activities partly in response to emotional discomfort during learning (Gökçearslan, Yildiz Durak and Esiyok, 2023). Accordingly, the present findings are better understood by showing a tension between short-term emotional relief and perceived cognitive and academic costs. Participants reported feeling refreshed or temporarily entertained, but also perceived reduced concentration, incomplete understanding of learning material, additional time needed for relearning, and possible academic consequences. Because this study did not objectively measure attention, comprehension, or grades, these outcomes should be understood as participants' perceptions rather than demonstrated causal effects.

The recurrence of cyberloafing also appeared to involve both internal and external regulation. Internally, repeated switching to competing digital activities may reflect difficulty sustaining attention and monitoring behavior, consistent with SRL. Externally, participants described limited supervision, weak accountability, and the absence of serious consequences for cyberloafing. In some cases, peers also enabled avoidance by alerting participants when lecturers called on them or by providing socially acceptable explanations for their absence. These accounts suggest that cyberloafing may become embedded in social norms rather than remaining purely an individual behavior. This interpretation is consistent with research showing that subjective norms are associated with student cyberloafing, indicating that perceptions of peer acceptance can shape off-task technology use (Mihelič et al., 2022). The present findings extend this perspective qualitatively by illustrating how peer support may operate in everyday online-class interactions to reduce the social costs of disengagement and facilitate repeated cyberloafing.

At the same time, this social interpretation should be considered considering the focus group method. Group discussions may encourage participants to recognize shared experiences and disclose behaviors they might otherwise hesitate to report, but they may also produce conformity, humor-based normalization, or minimization of negative implications. Participants may align their accounts with emerging group narratives or frame cyberloafing as ordinary behavior once similar experiences are voiced by peers. Therefore, apparent normalization in the data may reflect both the phenomenon itself and the interactional dynamics through which it was discussed.

From a practical perspective, the findings suggest that reducing cyberloafing requires more than monitoring or restricting students' internet use. Because participants associate cyberloafing with boredom, prolonged classes, insufficient interaction, task-challenge mismatch, and readily accessible competing digital activities, instructional design should address these antecedents directly. Online learning may benefit from shorter and more segmented instructional periods, greater use of interactive activities, structured breaks, and learning materials that are better matched to students' perceived capabilities. Strategies that strengthen self-regulation may also be useful, including notification management, planned periods of focused attention, self-monitoring of digital behavior, and reflection on patterns of distraction. Recent evidence similarly emphasizes the relevance of e-learning readiness and self-regulatory processes in explaining cyberloafing during technology-mediated learning (Gökçearslan, Yildiz Durak and Esiyok, 2023).

Taken together, these findings provide a more integrated understanding of cyberloafing as a behavior shaped by the interaction of self-regulation, student engagement, task characteristics, technological affordances, and social norms within online distance learning. At the same time, the interpretation of these patterns should remain bound by the methodological characteristics of the present study. Because the findings were derived from a relatively small qualitative sample and relied on participants' self-reported experiences in focus group settings, they should not be interpreted as establishing causal relationships or objective academic effects. These considerations highlight the need to acknowledge the study's limitations and to identify methodological directions for future research.

This study has several limitations that should be considered when interpreting the findings. First, the study was conducted with a relatively small sample of 18 university students from the Greater Jakarta area, which limits the transferability of the findings to other student populations, institutions, and educational contexts. Second, the study relied on participants' self-reported experiences in focus group discussions. Although this approach provided access to students' subjective perspectives, the findings may have been influenced by recall bias, social desirability, group conformity, and the tendency to normalize or minimize cyberloafing behavior in the presence of peers. Third, the use of focus groups may have shaped how participants expressed their experiences, as some individuals may have aligned their responses with emerging group norms or been less willing to disclose behaviors perceived as academically undesirable. Fourth, the exploratory qualitative design does not allow causal relationships to be established between cyberloafing and factors such as boredom, task difficulty, self-regulation, or student engagement. Similarly, the study did not objectively measure attention, comprehension, grades, or academic performance; therefore, the reported cognitive and academic consequences should be understood as participants' perceptions rather than demonstrated effects. Fifth, detailed individual demographic information, including age, gender, semester, study program, institution, online learning experience, and primary device used, was not retained in a form that could be reliably reconstructed at the time of manuscript revision. Consequently, the absence of these participant-level characteristics limits the extent to which the transferability of the findings can be assessed.

Future research could address these limitations by combining multiple methods and data sources. Individual interviews may allow more private exploration of sensitive experiences, while diary studies and experience-sampling methods could capture cyberloafing closer to the time it occurs and reduce retrospective recall bias. Classroom observations and digital trace data, such as learning management system records, could provide behavioral evidence of students' participation patterns during online learning. Future studies could also incorporate academic performance indicators, attention measures, or engagement metrics to examine whether perceived consequences correspond with objectively observed outcomes. Combining qualitative accounts with behavioral and performance data may therefore provide a more comprehensive understanding of how cyberloafing emerges, is maintained, and affects students during online distance learning.

CONCLUSION

This exploratory qualitative study provides a contextual understanding of cyberloafing among university students during online distance learning in the Greater Jakarta area.

Students perceived cyberloafing as having certain short-term benefits, such as refreshing their minds and providing entertainment during learning activities. However, this perceived benefit should be interpreted cautiously. Although brief online activities may help students reduce boredom or regain temporary emotional comfort, participants also reported perceived cognitive and academic costs, including reduced concentration, incomplete understanding of learning materials, and additional time needed to revisit the content. These consequences should be understood as participants' perceptions rather than objectively established effects on attention, comprehension, or academic performance.

Therefore, cyberloafing should not be understood simply as a positive coping strategy. Rather, the findings suggest a tension between short-term psychological relief and perceived losses in attention, cognitive processing, and learning engagement. In this sense, the "refreshing" function of cyberloafing may provide immediate comfort, but repeated or excessive engagement in unrelated online activities may interfere with students' involvement in the immediate learning task.

The findings also suggest that cyberloafing is shaped not only by individual self-regulation but also by instructional and social conditions, including prolonged or less interactive learning, mismatched levels of task challenge, easy access to competing digital activities, weak accountability, and peer-enabled avoidance. Practical efforts to manage cyberloafing should therefore extend beyond monitoring student behavior. Online learning design may benefit from shorter and more segmented instructional periods, interactive learning activities, structured breaks, learning materials that better match students' levels of challenge, and strategies that support self-monitoring and management of digital distractions.

These findings are exploratory and context-specific and should not be generalized to all university students in Indonesia. Future research should examine cyberloafing across more diverse educational contexts and combine students' subjective accounts with behavioral and academic indicators to distinguish perceived consequences from objectively observed patterns and outcomes.

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DECLARATION

Ethics approval and consent to participate

This study was conducted in accordance with ethical principles for research involving human participants. All participants were informed about the purpose of the study, the voluntary nature of their participation, the confidentiality of their responses, and their right to withdraw from the study at any time without any consequences. Prior to data collection, informed consent was obtained from all participants.

Consent for publication

All participants provided consent for the use of anonymized data for research publication purposes. No personally identifiable information is presented in this article.

Availability of data and materials

The data generated and analyzed during the current study are not publicly available due to confidentiality considerations and the qualitative nature of the data, which may contain information that could indirectly identify participants. However, anonymized excerpts relevant to the findings may be made available from the corresponding author upon reasonable request.

Conflicts of interest Statement

The authors confirm that there are no conflicts of interest related to the publication of this paper. All authors have reviewed and approved the final version of the manuscript.

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Artificial Intelligence-Assisted Technology

Generative artificial intelligence (ChatGPT) was used solely to improve the manuscript's language, grammar, clarity, and readability. AI was not used for data generation, analysis, or interpretation. No confidential or identifiable participant data were shared with AI platforms. All AI-assisted content was reviewed and verified by the authors, who retain full responsibility for the accuracy, integrity, and originality of the manuscript.

Authors' contributions

HM and RDS conceptualized the study, developed the research design, and contributed to the focus group data collection. All four authors (HM, RDS, AAR, and SJK) participated in the manual coding process, thematic development, and interpretation of the qualitative findings. HM took a leading role in organizing the analysis and integrating the findings into the manuscript. AAR and SJK contributed to the literature review, interpretation of the findings, manuscript drafting, and critical revision for intellectual content. All authors reviewed and approved the final version of the manuscript.

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