



Digital Fatigue as a Risk Factor for Academic Burnout among Indonesian University Students: A Literature Review

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Abstract. *The rapid development of digital learning has significantly transformed higher education in Indonesia, especially after the COVID-19 pandemic accelerated the use of online learning systems. Although digital technology makes learning more flexible and easier to access, spending too much time in front of screens, constant online communication, and heavy academic tasks in online classes have caused digital fatigue among university students. Digital fatigue is a condition of physical, mental, and emotional tiredness caused by intensive use of digital devices and online platforms. This study discusses digital fatigue as a possible cause of academic burnout among Indonesian university students. Using academic papers published between 2021 and 2025, this study reviews the causes, symptoms, and effects of digital fatigue on students' academic well-being. In conclusion, digital fatigue has become an important psychological and educational problem in Indonesian universities.*

Keywords: *digital fatigue; academic burnout; online learning; Indonesian university students; screen time.*

1. INTRODUCTION

The COVID-19 pandemic fundamentally transformed higher education worldwide, including in Indonesia, accelerating a rapid shift to digital learning. While essential for maintaining educational continuity, this transition introduced new challenges for university students, who suddenly had to navigate academic life through screens and online platforms. Online learning required prolonged screen time, constant use of learning management systems, frequent virtual meetings through platforms such as Zoom and Google Meet, and continuous streams of digital assignments and communication (Salim et al., 2022; Yosep et al., 2023).

As Indonesian universities adapted to this new educational paradigm, there are concerns regarding the psychological and physical well-being of students (Gaitte et al., 2022). Among the most important issues is the phenomenon of digital fatigue, a state of physical, cognitive, and emotional exhaustion resulting from prolonged and intensive interaction with digital devices and online platforms. Research indicates that more than 68% of secondary school and university students in Indonesia show signs of digital fatigue, including stress, concentration disorders, and changes in social behavior due to high social media use (Khadafi et al., 2025).

Academic burnout is conceptualized as a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment in academic contexts (Liu et al., 2023). The shift to online learning has introduced new issues to this phenomenon. Students now face unique stressors including technological challenges, social isolation from peers and instructors, blurred boundaries between academic and personal life, and the cognitive demands of processing information through digital mediums (Daryanto et al., 2023; Rohmani & Andriani, 2021).

The purpose of this study is to examine digital fatigue as a potential risk factor for academic burnout among Indonesian university students. The scope of this review includes scholarly articles published between 2021 and 2025, focusing primarily on studies conducted in Indonesian contexts or with direct relevance to Indonesian university students. This timeframe captures the period during and immediately following the COVID-19 pandemic, when online learning became predominant in Indonesian higher education. As Indonesian universities continue adopting digital technologies through blended and hybrid learning models, understanding the psychological costs of digital engagement is increasingly important.

2. LITERATURE REVIEW

2.1 Conceptual Framework: Digital Fatigue and Academic Burnout

Digital fatigue represents a multidimensional construct including physical, cognitive, and emotional exhaustion resulting from intensive and prolonged interaction with digital technologies (Al-kfairy et al., 2025). In the context of higher education, digital fatigue emerges when students experience overwhelming demands from continuous engagement with learning management systems, video conferencing platforms, digital assignments, and online communication channels. The phenomenon extends beyond simple tiredness to include a sense of being overwhelmed by technology, decreased motivation to engage with digital learning tools, and a feeling of disconnection despite constant connectivity (Prasetyo et al., 2025).

Academic burnout is conceptualized through the lens of Maslach's burnout theory, which identifies three core dimensions: emotional exhaustion, depersonalization or

cynicism, and reduced personal accomplishment or efficacy (Maslach & Leiter, 2017). In the academic context, burnout manifests as students feeling overwhelmed by coursework, developing cynical attitudes toward their studies, and experiencing a decline in their sense of academic competence (Daryanto et al., 2023; Supriyanto et al., 2024).

The concept of cognitive load theory can help explain how digital learning environments can contribute to fatigue and burnout (Kirschner et al., 2018). Online learning often presents information through multiple channels simultaneously, which can exceed students' cognitive processing capacity. This cognitive overload, combined with the technical demands of navigating digital platforms, creates sustained mental effort that depletes cognitive resources and contributes to fatigue (Prasetyo et al., 2025). Digital learning fatigue significantly negatively affects academic motivation, which in turn impacts learning engagement (Masduki & Johari, 2025).

The social-emotional dimension of the digital fatigue-burnout relationship is very relevant in the Indonesian context. Traditional Indonesian educational culture emphasizes face-to-face interaction, communal learning, and direct teacher-student relationships. The shift to online learning disrupted these social and cultural norms, leading to feelings of isolation and disconnection. Research indicates that the shift from face-to-face to screen-based interactions, which lack real emotional expression, contributes to socio-emotional crises among students (Khadafi et al., 2025). This social isolation, combined with digital fatigue, creates conditions that lead to academic burnout.

2.2 Causes of Digital Fatigue in Online Learning Environments

Excessive Screen Time and Duration of Digital Engagement

One of the most consistently identified causes of digital fatigue is the sheer duration of screen time required for online learning. There is a significant relationship between the duration of online learning and fatigue, with students experiencing higher fatigue levels when online learning lasted longer than three hours (Nobrianti & Elwindra, 2023). Similarly, studies indicate that students using digital devices for more than eight hours daily show significantly increased digital burnout scores (Khadafi et al., 2025). The amount of screen time required for online learning is significantly greater than the screen exposure students experienced in traditional face to face learning environments. The

timing of online learning also contributes to fatigue. Students tended to experience higher fatigue levels when studying in the afternoon or evening (Nobrianti & Elwindra, 2023).

Information Overload and System Complexity

Online learning environments often present students with overwhelming amounts of information through multiple channels and platforms. Students reported difficulties understanding online material, lack of familiarity with digital learning platforms, and technical issues such as unstable internet connections and limited access to devices (Febriani et al., 2021). These technological barriers add to the cognitive demands of online learning, increasing the mental effort required to engage with course content and contributing to digital fatigue (Masrek & Baharuddin, 2023).

Academic Workload and Task Demands

The nature and volume of academic work in online learning environments significantly contribute to digital fatigue. Multiple studies report that students perceive online learning workloads as heavier than traditional face-to-face learning, with excessive assignments, short deadlines, and continuous task demands (Daniswari & Nuryanto, 2022). Research also indicates that the large volume of online tasks and activities without clear time limits contribute significantly to digital fatigue (Khadafi et al., 2025).

Lack of Interactive and Engaging Pedagogy

The pedagogical approaches employed in online learning significantly influence students' experience of digital fatigue. Studies show that online learning systems that are not well managed, with too many assignments, short deadlines, and limited direct interaction with lecturers and friends, make students feel bored and tired (Daniswari & Nuryanto, 2022). When online learning consists primarily of passive consumption of content, such as reading materials and watching recorded lectures, without opportunities for active engagement, discussion, or collaborative learning, students experience increased boredom and reduced motivation (Mukaromah & Wardiana, 2022; Sari et al., 2021).

Communication Overload and Social Media Use

Besides online classes, students also experience more digital fatigue because they receive too many messages from different platforms (Supriyadi et al., 2025). They need to check and reply to messages from lecturers and classmates through email, learning management systems (LMS), WhatsApp groups, and social media. High use of social media, together with academic online activities, increases students' screen time and digital exposure, which can cause stress, difficulty concentrating, and changes in social behavior (Khadafi et al., 2025).

2.3 Symptoms and Manifestations of Digital Fatigue among University Students

Physical Symptoms

The physical manifestations of digital fatigue are among the most immediately observable symptoms. Students commonly report eye strain and visual discomfort from prolonged screen exposure, including symptoms such as dry eyes, blurred vision, and headaches (Ibrahim et al., 2025; Permana et al., 2023).

Sleep problems are also a common effect of digital fatigue. Using screens late at night can reduce sleep quality, disturb the body's natural sleep schedule, and increase anxiety (Khadafi et al., 2025).. Long screen time, academic pressure, and irregular sleep habits together create ongoing physical tiredness that is hard to overcome.

Cognitive Symptoms

Studies show that students often experience physical tiredness not because of physical activity, but because of the continuous cognitive and sensory demands from using digital technology for long periods. (Nurhidayati et al., 2021; Tinambunan & Tumanggor, 2022). The cognitive manifestations of digital fatigue can greatly affect students' learning and academic performance. One of the most common problems is difficulty concentrating and staying focused. Students also find it harder to remember lesson materials and keep information learned through digital platforms (Khadafi et al., 2025).

Emotional and Psychological Symptoms

The emotional manifestations of digital fatigue are particularly concerning as they directly contribute to academic burnout. Emotional exhaustion is the most prominent emotional symptom. Students describe feeling overwhelmed by the emotional demands of online learning, including experiencing frustration related to technical difficulties, coping with isolation from peers, and dealing with anxiety about academic performance (Daryanto et al., 2023; Rohmani & Andriani, 2021).

Decreased motivation and reduced enthusiasm for learning are significant emotional symptoms that connect digital fatigue and academic burnout. Students report loss of motivation to learn, becoming passive, less creative, and less productive (Kenedi & Astuti, 2021; Khadafi et al., 2025).

Symptoms of depression and negative mood states are also associated with digital fatigue. Students experiencing fatigue show signs of mild depression, negative self-concept, and pessimistic sentiments including bad temper and potentially violent behavior (Khadafi et al., 2025; Tinambunan & Tumanggor, 2022).

Behavioral Symptoms

Digital fatigue manifests behaviorally in ways that affect students' academic engagement and social functioning. Decreased participation in online learning activities is a common behavioral indicator. Students become less active in virtual classes, reduce their contributions to online discussions, and show lower levels of engagement with course materials (Kenedi & Astuti, 2021).

2.4 Academic Burnout in Indonesian Higher Education

The prevalence of burnout varies across different student populations and educational levels. Research shows that there are differences in burnout levels based on education level and duration of daily online learning, indicating that burnout is not uniformly distributed but varies according to students' developmental stage and exposure to online learning demands (Sunawan et al., 2021).

Mental health consequences of burnout are substantial. Research indicates a significant positive relationship between burnout and psychological distress, with higher

levels of burnout associated with increased psychological distress (Mukaromah & Wardiana, 2022).

In severe cases, burnout can lead to academic withdrawal or dropout. Student fatigue and burnout are associated with higher absenteeism, lower motivation, and a higher percentage of dropouts (Daniswari & Nuryanto, 2022).

2.5 The Relationship between Digital Fatigue and Academic Burnout

The relationship between fatigue and burnout can be found in studies examining digital fatigue. There is a significant negative relationship between hardiness and digital fatigue in university students, with higher student hardiness levels correlating with lower digital fatigue levels (Yosep et al., 2023). There is also a significant correlation between coping mechanisms and fatigue, with low coping and low fatigue indicating difficulty adapting during online learning (Nurhidayati et al., 2021).

3. DISCUSSION

This literature review has synthesized current research on digital fatigue and academic burnout among Indonesian university students, showing a complex and concerning picture of student well-being in digitalized learning environments. The findings have significant implications for theory, practice, and policy in Indonesian higher education.

The relationship between digital fatigue and academic burnout found in this review expands burnout theory into the context of digital learning. Traditional burnout theory mainly focused on interpersonal and organizational stressors, but this review shows that technological factors, especially the demands of intensive digital engagement, are also an important cause of burnout. Digital fatigue can be understood as a form of exhaustion caused by technology use that, when experienced continuously, develops into academic burnout, including emotional exhaustion, cynicism, and reduced academic efficacy.

The findings of this review have important practical implications at different levels. At the institutional level, universities need to recognize digital fatigue and burnout as serious risks to student well-being and academic success, which require clear policies, resources, and systematic attention. Institutions should develop policies on reasonable

workloads in online learning, screen time guidelines, and standards for interactive and engaging online teaching methods.

For educators, the findings show the importance of pedagogical approaches that reduce digital fatigue while still improving learning outcomes. This includes using a mix of synchronous and asynchronous learning, adding breaks in long online sessions, designing assignments that do not require excessive screen time, and supporting social interaction and collaborative learning in online settings.

For students, the findings highlight the need for self-regulation strategies to manage digital engagement, such as setting limits on screen time, taking regular breaks, maintaining good sleep habits, and staying socially connected despite physical distance. Students also need education about digital fatigue and burnout, including how to recognize early warning signs and where to find support services.

4. CONCLUSION

This study examined digital fatigue as a factor contributing to academic burnout among Indonesian university students during and after the COVID-19 pandemic (2021–2025). The findings show that digital fatigue, which includes physical, mental, and emotional exhaustion caused by excessive use of digital technology, is common among students and strongly related to academic burnout.

The findings highlight the importance of addressing digital fatigue in Indonesian higher education. As universities continue to use digital learning systems, attention should also be given to students' mental well-being. Universities, lecturers, and students all play important roles in preventing and reducing digital fatigue and burnout.

In conclusion, digital fatigue has become an important issue in Indonesian higher education. Although digital learning offers flexibility and easier access to education, it also creates new challenges for student well-being. Therefore, universities need comprehensive strategies to reduce excessive digital demands, strengthen social support, manage academic workloads, and improve students' psychological resilience.

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