

## Social Media Multitasking and Cognitive Load: How Digital Habits Affect Students' Learning Focus

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### Abstract

This study investigates the influence of social media multitasking on students' learning focus through the framework of Cognitive Load Theory. A quantitative explanatory survey method was employed to analyze how digital habits shape students' cognitive attention, particularly when they engage in simultaneous use of multiple social media platforms during study activities. The population consisted of undergraduate students from Universitas Indraprasta PGRI (Unindra), and a purposive sampling technique was used to select 120 respondents who actively participated in both online and offline classes. Data were collected using Likert-scale questionnaires measuring the intensity of social media multitasking and levels of learning concentration. Descriptive findings indicate that students exhibit relatively high levels of digital multitasking ( $M = 3.85$ ), while their learning focus tends to be low ( $M = 2.71$ ). A simple linear regression analysis revealed a significant negative relationship between social media multitasking and learning concentration ( $\beta = -0.432$ ,  $p < 0.05$ ). These results suggest that frequent switching between academic tasks and social media activities increases extraneous cognitive load, thereby diminishing attention and reducing the efficiency of information processing. The study underscores the importance of strengthening digital literacy and self-regulation strategies to help students manage social media use and sustain optimal focus during learning activities.

**Keywords:** social media multitasking, cognitive load, digital habits, learning focus, students

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## INTRODUCTION

The rapid advancement of digital technology has transformed the way students engage in learning, particularly within higher education. The widespread use of smartphones and social media platforms has encouraged students to perform multiple digital activities simultaneously, for example, attending online classes while scrolling through Instagram, replying to chat messages, or browsing entertainment content. This phenomenon, widely referred to as digital multitasking, reflects a growing tendency among students to divide their attention between academic and non-academic activities during study sessions (Fauzy et al., 2023).

Although multitasking may create the illusion of increased productivity, prior research has demonstrated that constant task switching disrupts cognitive processing and reduces learning effectiveness. According to Cognitive Load Theory (Sweller, 2011), working memory has limited capacity to process information. When students engage in social media multitasking during learning activities, cognitive resources are distributed across multiple tasks, increasing extraneous cognitive load and reducing the cognitive capacity available for meaningful learning. Frequent attention shifts also lead to "switching costs," requiring students to repeatedly reorient their focus, which weakens information retention and cognitive performance (Ophir et al., 2009).

In Indonesia, social media multitasking among university students has become a pervasive habit, particularly during hybrid and online learning environments. Previous studies (Fauzy et al., 2023; Mei & Sahabuddin, 2025; Ardiyanti et al., 2025) have highlighted how entertainment-oriented social media use negatively affects concentration and academic productivity. However, most of these studies adopt descriptive or qualitative approaches, focusing on behavioral tendencies rather than examining causal relationships between multitasking intensity and learning focus. As a result, empirical evidence addressing how digital multitasking influences students' cognitive attention, particularly from the perspective of cognitive load, is still limited.

To address this gap, the present study investigates the effect of social media multitasking on students' learning focus by integrating insights from Cognitive Load Theory. Specifically, this research aims to analyze how digital habits shape students' ability to maintain attention and process learning materials effectively, particularly with regard to the simultaneous use of multiple social media platforms. The study provides theoretical implications for understanding digital distractions in higher education and offers practical recommendations for designing digital literacy programs that encourage self-regulated learning in the digital era.

## **METHODS**

This study employed a quantitative explanatory survey design to examine the effect of social media multitasking on students' learning focus. The explanatory design was selected to identify causal relationships between the independent variable (social media multitasking) and the dependent variable (learning focus) based on empirical data collected from students in a higher education context.

The population consisted of undergraduate students enrolled at Universitas Indraprasta PGRI (Unindra) who actively participated in both online and face-to-face learning activities. A purposive sampling technique was used to select participants who reported using social media while studying. A total of 120 respondents were included in the final analysis, which meets the minimum sample size recommended for simple regression analysis (Cohen, 1992). Data were collected using a structured questionnaire consisting of two main scales:

1. Social Media Multitasking Scale, which measured the frequency and duration of social media use during study sessions using a 5-point Likert scale (1 = very low, 5 = very high).
2. Learning Focus Scale, which assessed students' concentration and sustained attention during learning activities, also measured using a 5-point Likert scale.

The questionnaire items were developed based on relevant literature and evaluated through expert judgment by two university lecturers specializing in educational psychology and instructional design. Reliability testing using Cronbach's Alpha demonstrated that both scales had satisfactory internal consistency ( $\alpha > 0.70$ ).

Data were collected using both online and offline formats. The online questionnaire was administered through Google Forms, while printed questionnaires were distributed during face-to-face classes. Prior to participation, students were informed of the research objectives and assured that their responses would remain confidential and used solely for academic purposes.

The collected data were analyzed using descriptive and inferential statistics. Descriptive analysis was conducted to summarize respondents' demographic characteristics and overall tendencies for each variable. Inferential analysis was performed using simple linear regression to test the effect of social media multitasking on learning

focus. Before conducting regression analysis, classical assumption tests, including normality, linearity, and homoscedasticity, were carried out to ensure the validity of the model. Statistical analyses were conducted using SPSS version 25.

Regression results were interpreted based on a significance level of  $p < 0.05$ . A negative regression coefficient indicated that higher levels of social media multitasking were associated with lower levels of learning focus, consistent with predictions derived from Cognitive Load Theory.

## RESULTS & DISCUSSION

### *Results*

The study involved a total of 120 undergraduate students from Universitas Indraprasta PGRI (UNINDRA). Descriptive statistics show that students reported a high level of social media multitasking during learning activities, with a mean score of 3.85 (SD = 0.62) on a 5-point scale. In contrast, their learning focus was categorized as low, with a mean score of 2.71 (SD = 0.74). These findings indicate that most students frequently accessed social media platforms such as Instagram, TikTok, or YouTube while studying or attending online classes.

A simple linear regression analysis revealed a significant negative effect of social media multitasking on learning focus, as presented in Table 1.

**Table 1. Simple Linear Regression Result**

Predictor	$\beta$	Sig. (p)
Social Media Multitasking → Learning Focus	-0.432	0.000

The regression coefficient ( $\beta = -0.432$ ,  $p < 0.05$ ) suggests that for every one-unit increase in social media multitasking, students' learning focus decreases by 0.432 units. This result supports the hypothesis that higher multitasking intensity significantly diminishes students' ability to concentrate during learning activities.

### *Discussion*

The findings demonstrate a clear inverse relationship between social media multitasking and students' learning focus. This relationship aligns with the principles of Cognitive Load Theory (Sweller, 2011), which asserts that working memory has limited capacity; dividing attention across multiple simultaneous tasks increases extraneous cognitive load, thereby reducing the cognitive resources available for meaningful learning. In the present study, students who frequently switched between academic tasks and social media engagement exhibited more fragmented attention and lower comprehension levels. The significant negative regression coefficient is consistent with the findings of Ophir et al. (2009), who noted that heavy media multitaskers display weaker attentional control and slower recovery when switching between tasks. Similarly, the findings corroborate previous research by Junco (2012) and Mei & Sahabuddin (2025), which reported that excessive social media use during study sessions undermines academic engagement and cognitive persistence. This study extends existing literature by providing quantitative evidence from Indonesian higher education students, confirming that social media multitasking directly reduces learning focus.

The observed decline in concentration can also be explained by the mechanisms of task switching and attention residue. Each time students check notifications or engage in

non-academic digital activities, their mental resources are diverted, and residual attention lingers on the prior task, thereby delaying cognitive reorientation. This continuous mental shifting disrupts information processing and contributes to cognitive fatigue, a state characterized by decreased motivation, reduced accuracy, and slower comprehension (Indik Syahrabanu, 2023).

Although multitasking is often perceived as a strategy for managing digital demands efficiently, the findings suggest that this behavior produces only an illusion of productivity rather than genuine learning effectiveness. Continuous engagement with social media may provide short-term gratification but undermines sustained attention and deeper cognitive processing. These patterns highlight the urgent need for digital literacy interventions and self-regulated learning strategies in higher education to help students manage their digital habits and reduce distractions during learning activities.

In conclusion, the results confirm that social media multitasking significantly increases cognitive load and decreases learning focus. Future studies may explore moderating factors such as gender, academic discipline, or motivation to determine individual differences in susceptibility to digital distractions.

## CONCLUSION

This study provides empirical evidence that social media multitasking has a significant and negative effect on students' learning focus. The regression results ( $\beta = -0.432$ ,  $p < 0.05$ ) confirm that higher levels of multitasking are associated with reduced concentration during learning activities. These findings support the assumptions of Cognitive Load Theory (Sweller, 2011), emphasizing that distributing attention across digital and academic tasks increases extraneous cognitive load, thereby limiting the mental capacity available for effective information processing.

In practical terms, the study demonstrates that constant switching between academic tasks and social media engagement creates cognitive interference that interrupts sustained attention. Students who habitually interact with digital platforms while studying tend to experience shallow learning, decreased comprehension, and mental fatigue. These results reinforce earlier findings (Ophir et al., 2009; Junco, 2012; Mei & Sahabuddin, 2025), which consistently show that multitasking behaviors undermine learning effectiveness and academic performance.

The findings of this study carry several theoretical and practical implications. First, from a theoretical perspective, this study extends the application of Cognitive Load Theory within digital learning contexts by illustrating how the extraneous load generated by social media multitasking reduces cognitive efficiency. It offers a foundation for future conceptual models that integrate attention regulation and working-memory constraints in digital learning environments.

Second, in terms of practical implications for higher education institutions, universities should integrate digital literacy and self-regulation training into student development programs. Providing guidance on managing notifications, organizing study schedules, and adopting focus-enhancing techniques may help students minimize the cognitive costs of multitasking.

Third, pedagogical implications arise for instructors, who can design learning environments that reduce external distractions. Strategies such as implementing digital detox periods, using focus-based class activities, or embedding instruction on attention management and cognitive health can support students in cultivating healthier digital habits.

Finally, future research should examine moderating variables such as motivation, personality traits, or academic discipline to better understand individual differences in multitasking susceptibility. Longitudinal and experimental studies may also offer stronger causal insights into the long-term effects of digital multitasking on learning outcomes.

Ultimately, this study underscores that managing digital behavior is not solely a matter of discipline but also of cognitive efficiency. Developing mindful and focused learning habits is essential for optimizing academic performance in an increasingly digitalized educational landscape.

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