

SPLIT ATTENTION AS A FACTOR IN DECLINING AWARENESS AMONG GENERATION Z UNIVERSITY STUDENTS

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Abstract. *The rapid development of digital technology has fundamentally altered the cognitive patterns of Generation Z university students, particularly regarding their ability to sustain focused attention. This study investigates the relationship between split attention (divided concentration) and the decline of academic awareness among Generation Z students at Universitas Pamulang, Indonesia. Employing a quantitative research design, data were collected from 11 respondents using a structured questionnaire measuring two independent variables—cognitive overload from multitasking (X1) and digital distraction intensity (X2)—and one dependent variable, academic awareness (Y). Statistical analyses were conducted using SPSS software, encompassing validity testing (Pearson correlation), reliability assessment (Cronbach's Alpha), classical assumption tests (normality, multicollinearity, heteroscedasticity, autocorrelation), and multiple linear regression analysis including F-test, t-test, and coefficient of determination (R²). Results indicate that all instruments were valid (r-values: X1=0.847, X2=0.826, Y=0.912 > r-table 0.602) and reliable (Cronbach's Alpha=0.822 > 0.60). Data were normally distributed (sig.=0.200 > 0.05), free from multicollinearity (Tolerance=0.707, VIF=1.414), heteroscedasticity, and autocorrelation (Runs Test sig.=0.540 > 0.05). The simultaneous F-test demonstrated that X1 and X2 jointly exert a significant influence on academic awareness (F=5.012, sig.=0.039 < 0.05). However, partial t-tests revealed that neither X1 (sig.=0.170) nor X2 (sig.=0.166) were individually significant predictors. The coefficient of determination showed R²=0.556, meaning that split attention variables explain 55.6% of the variance in academic awareness decline among Generation Z students. These findings underscore the urgent need for pedagogical strategies that address digital distraction and cognitive load in higher education settings.*

Keywords: *Academic Awareness; Digital Distraction; Generation Z; Quantitative Research; Split Attention*

1. INTRODUCTION

The emergence of Generation Z—individuals born between 1997 and 2012—has introduced new challenges to the landscape of higher education. This cohort has grown up immersed in digital technology, social media, and instant information access, which has significantly shaped their cognitive habits and attentional patterns. Unlike previous generations, Generation Z students are accustomed to processing multiple streams of information simultaneously, a behavior commonly referred to as split attention or divided concentration.

Split attention, in the context of educational psychology, refers to the cognitive state in which an individual's mental resources are distributed across multiple sources of information or stimuli, rather than being directed toward a single, focused task. While multitasking may appear efficient on the surface, cognitive load theory suggests that splitting attentional resources results in diminished processing capacity, reduced comprehension, and lowered academic performance.

Academic awareness encompasses a student's consciousness of their academic responsibilities, learning progress, and engagement with educational content. A decline in academic awareness among university students can manifest as reduced class participation, lower academic achievement, missed deadlines, and general disengagement from the learning process. Given the pervasive presence of smartphones, social media platforms, and digital entertainment in the lives of Generation Z students, it is critical to examine the extent to which

split attention contributes to this decline.

Universitas Pamulang, one of Indonesia's largest private universities, provides a compelling context for this investigation. With a predominantly young student population, the institution reflects broader trends observed in Generation Z learners nationwide. Preliminary observations at the university suggest that students frequently engage in digital activities—such as browsing social media or streaming content—during lectures, raising concerns about the quality of their academic engagement and awareness.

This study aims to quantitatively investigate the relationship between split attention—operationalized through cognitive overload from multitasking (X1) and digital distraction intensity (X2)—and the decline of academic awareness (Y) among Generation Z students at Universitas Pamulang. The findings are intended to inform educators, policy makers, and students themselves about the cognitive costs of split attention in academic environments.

2. LITERATURE REVIEW

2.1 Cognitive Load Theory and Split Attention

Cognitive Load Theory (CLT), originally proposed by Sweller (1988), posits that the human working memory has a limited capacity for processing information. When students engage in tasks that simultaneously demand attention from multiple sources—such as listening to a lecture while browsing social media—the total cognitive load exceeds the optimal processing threshold, resulting in diminished comprehension and retention. The split-attention effect, as a specific manifestation of extraneous cognitive load, has been extensively studied in educational contexts and consistently demonstrates negative effects on learning outcomes.

More recent extensions of CLT have incorporated digital technology as a significant source of extraneous load. Kirschner and De Bruyckere (2017) argued that the myth of digital natives being natural multitaskers is empirically unsupported; in fact, simultaneous digital engagement impairs rather than enhances cognitive performance. This theoretical foundation underpins the present study's conceptualization of split attention as a dual construct comprising cognitive overload from multitasking and digital distraction intensity.

2.2 Generation Z and Digital Distraction

Generation Z students have grown up with ubiquitous internet access and are characterized by their reliance on digital devices for communication, entertainment, and information retrieval. Research by Twenge (2017) and Rideout et al. (2022) indicates that this generation spends an average of seven to nine hours per day engaging with digital media outside of school-related activities. The constant availability of notifications, social media feeds, and streaming platforms creates a highly distracting environment that competes with academic stimuli for students' limited attentional resources.

Studies in Indonesian higher education contexts have similarly documented the impact of smartphone use and social media on student concentration and academic performance. Findings consistently indicate that high levels of digital media consumption are associated with lower grade point averages, reduced self-regulation, and increased academic procrastination—all indicators of diminished academic awareness.

2.3 Academic Awareness and Student Engagement

Academic awareness is conceptualized in this study as a multidimensional construct encompassing students' conscious monitoring of their academic responsibilities, active engagement with course content, and reflective understanding of their learning progress. It is closely related to, but distinct from, academic achievement; a student may demonstrate awareness of academic expectations without necessarily achieving high grades, and vice versa.

Research on metacognition and self-regulated learning underscores the centrality of awareness in academic success. Students who exhibit high academic awareness are better

equipped to recognize knowledge gaps, seek assistance proactively, and adapt their study strategies in response to feedback. Conversely, students whose awareness is diminished by attentional fragmentation may fail to notice critical learning cues, resulting in cumulative academic deficits.

3. RESEARCH METHODS

3.1 Research Design

This study employs a quantitative research design with multiple linear regression as its primary analytical framework. Quantitative methods were selected to enable systematic measurement and statistical testing of hypothesized relationships between split attention variables and academic awareness among Generation Z university students. The study is cross-sectional in nature, with data collected at a single point in time.

3.2 Population and Sample

The population of this study comprises Generation Z students (born 1997–2012) currently enrolled at Universitas Pamulang, Tangerang Selatan, Indonesia. A purposive sampling technique was employed, yielding a sample of 11 respondents who met the inclusion criteria: active enrollment, membership in the Generation Z cohort, and regular use of digital devices during academic activities. While the sample size is modest, it is appropriate for an exploratory quantitative study and sufficient for the statistical procedures employed.

3.3 Variables and Instrumentation

Three variables were operationalized in this study: (1) Cognitive Overload from Multitasking (X1), measured by items assessing the frequency and intensity of simultaneous task engagement during academic activities; (2) Digital Distraction Intensity (X2), measured by items capturing the extent to which digital media usage interrupts academic focus; and (3) Academic Awareness (Y), measured by items reflecting students' self-reported consciousness of academic responsibilities, engagement, and learning progress. Data were collected using a structured Likert-scale questionnaire. Responses ranged from 1 (Strongly Disagree) to 5 (Strongly Agree).

3.4 Data Analysis

Data analysis was performed using IBM SPSS Statistics software. The analytical sequence comprised: (1) validity testing via Pearson product-moment correlation; (2) reliability assessment using Cronbach's Alpha; (3) classical assumption testing including normality (One-Sample Kolmogorov-Smirnov), multicollinearity (Tolerance and VIF), heteroscedasticity (Glejser test via scatter plot), and autocorrelation (Durbin-Watson and Runs Test); and (4) multiple linear regression including simultaneous F-test, partial t-test, and coefficient of determination (R²).

4. RESULTS AND DISCUSSION

4.1 Validity Testing

Validity testing was conducted using Pearson product-moment correlation. An instrument is deemed valid if the computed r-value exceeds the critical r-table value of 0.602 (n=11, $\alpha=5\%$). Results are presented in Table 1.

Table 1. Validity Test Results (Pearson Correlation)

Variable	r-count	r-table	Conclusion
X1 (Cognitive Overload)	0.847	0.602	Valid
X2 (Digital Distraction)	0.826	0.602	Valid
Y (Academic Awareness)	0.912	0.602	Valid

As shown in Table 1, all three instruments produced r-count values substantially exceeding the r-table threshold of 0.602. These results confirm that all measurement items are valid indicators of their respective constructs and are suitable for use in subsequent analyses.

a. Reliability Testing

Reliability was assessed using Cronbach's Alpha, with an acceptable threshold of 0.60. Results are presented in Table 2.

Table 2. Reliability Statistics

Cronbach's Alpha	N of Items	Conclusion
0.822	3	Reliable

The Cronbach's Alpha value of 0.822 substantially exceeds the minimum threshold of 0.60, confirming that the composite instrument demonstrates acceptable internal consistency and is reliable for measuring the study's constructs across the sample.

b. Classical Assumption Tests

i. Normality Test

The One-Sample Kolmogorov-Smirnov test was employed to assess data normality. Results indicated that the significance value for all variables exceeded the threshold of 0.05 (sig.=0.200 for X1 and Y; sig.=0.180 for X2), confirming that the residuals are normally distributed and the normality assumption is satisfied. Additionally, graphical inspection of Q-Q plots confirmed that data points approximated the normal reference line.

ii. Multicollinearity Test

Multicollinearity was evaluated using Tolerance and Variance Inflation Factor (VIF) statistics. Results revealed Tolerance values of 0.707 (> 0.10) and VIF values of 1.414 (< 10) for both independent variables, indicating the absence of problematic multicollinearity between X1 and X2 in the regression model.

iii. Heteroscedasticity Test

Heteroscedasticity was assessed using the Glejser test. The results, presented in Table 3, demonstrate that neither X1 (sig.=0.978) nor X2 (sig.=0.576) produced significance values below 0.05, confirming that the regression model is free from heteroscedasticity.

Table 3. Heteroscedasticity Test (Glejser)

Model	B	Std. Error	Beta	t	Sig.
(Constant)	61.582	88.325	-	0.697	0.505
X1	0.005	0.183	0.012	0.029	0.978
X2	-0.122	0.209	-0.239	-0.583	0.576

iv. Autocorrelation Test

The Durbin-Watson statistic yielded a value of 1.192, which fell below the upper bound (du=1.5838), indicating the presence of autocorrelation in the initial test. Consequently, the Runs Test was conducted as an alternative diagnostic. The Runs Test result showed a significance value of 0.540, which exceeds the 0.05 threshold, confirming that the data are free from autocorrelation when assessed using the non-parametric approach.

c. Multiple Linear Regression Analysis

i. Simultaneous F-Test

The simultaneous F-test was conducted to determine whether X1 and X2 jointly exert a

significant effect on Y. Results are presented in Table 4.

Table 4. ANOVA – Simultaneous F-Test

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	974.834	2	487.417	5.012	0.039
Residual	778.075	8	97.259	-	-
Total	1752.909	10	-	-	-

The ANOVA results indicate $F=5.012$, which exceeds the F-table value of 4.46 ($df=2,8$; $\alpha=5\%$), and the significance value of 0.039 is below the 0.05 threshold. These results confirm that X1 (cognitive overload from multitasking) and X2 (digital distraction intensity) simultaneously exert a statistically significant influence on Y (academic awareness) among Generation Z students at Universitas Pamulang.

ii. Partial t-Test

The partial t-test was used to assess the individual contribution of each independent variable. With a t-table value of 2.306 ($df=8$, $\alpha=5\%$, two-tailed), results showed that X1 produced $t=1.508$ ($sig.=0.170 > 0.05$) and X2 produced $t=1.525$ ($sig.=0.166 > 0.05$). Consequently, H_0 is accepted for both variables, indicating that neither X1 nor X2 is a statistically significant predictor of academic awareness when considered in isolation. This pattern suggests that the combined effect of split attention dimensions is more powerful than each component individually, reflecting the interactive and cumulative nature of cognitive overload in academic settings.

iii. Coefficient of Determination (R^2)

Table 5. Coefficient of Determination

R	R Square (R^2)	Adjusted R^2	Interpretation
0.747	0.556	0.445	X1 & X2 explain 55.6% of variance in Y

The coefficient of determination ($R^2=0.556$) indicates that the two split attention variables — cognitive overload from multitasking and digital distraction intensity—collectively account for 55.6% of the variance in academic awareness decline among Generation Z students. The remaining 44.4% of variance is attributable to other factors not captured in this model, such as intrinsic motivation, sleep quality, peer influence, or instructor engagement strategies.

4. DISCUSSION

The findings of this study provide empirical support for the proposition that split attention — manifested as cognitive overload from multitasking and digital distraction intensity—constitutes a significant collective factor in the decline of academic awareness among Generation Z students at Universitas Pamulang. The simultaneous significance of X1 and X2 in the F-test, combined with their individual non-significance in the t-test, suggests a synergistic relationship between these constructs. This is consistent with cognitive load theory, which emphasizes that the cumulative burden of multiple extraneous loads exceeds the capacity of working memory more decisively than any single source of distraction.

The R^2 value of 55.6% is notably high for a behavioral study with a small sample, suggesting that the chosen variables capture a substantial portion of the mechanisms underlying academic awareness decline in this population. This is particularly meaningful given the relatively simple two-predictor model employed, and underscores the potency of split attention as a determinant of academic engagement in digitally saturated learning environments.

The absence of individual significance for X1 and X2 in the partial t-tests warrants interpretive

nuance. Rather than indicating that neither variable matters, this pattern likely reflects multicollinear cognitive processes: in practice, students who experience high cognitive overload from multitasking also tend to be heavily exposed to digital distractions, making it statistically challenging to isolate the unique contribution of each variable. Future research with larger samples may better distinguish these effects.

These results are broadly consistent with international literature documenting the adverse effects of digital media use on student attention and academic performance. The findings extend this body of knowledge to the Indonesian Generation Z context, providing locally relevant empirical evidence for policymakers and educators at institutions such as Universitas Pamulang.

CONCLUSION

This study investigated the relationship between split attention—operationalized as cognitive overload from multitasking (X1) and digital distraction intensity (X2)—and the decline of academic awareness (Y) among Generation Z students at Universitas Pamulang. Based on rigorous quantitative analysis using SPSS, the following conclusions are drawn:

1. All measurement instruments demonstrated satisfactory validity (r -values: $X1=0.847$, $X2=0.826$, $Y=0.912 > r\text{-table } 0.602$) and reliability (Cronbach's $\alpha=0.822 > 0.60$), confirming the psychometric integrity of the study.
2. All classical assumption tests were satisfied: data were normally distributed, multicollinearity was absent, and heteroscedasticity and autocorrelation were not detected in the final model.
3. The simultaneous F-test confirmed that X1 and X2 jointly exert a statistically significant influence on academic awareness ($F=5.012$, $\text{sig.}=0.039 < 0.05$), while partial t-tests indicated that neither variable was individually significant at conventional thresholds.
4. The coefficient of determination ($R^2=0.556$) demonstrates that split attention variables explain 55.6% of the variance in academic awareness decline, highlighting the substantial explanatory power of the model.

These findings have important implications for higher education institutions seeking to support Generation Z learners. Educators and academic administrators should consider implementing digital-use guidelines during class sessions, promoting metacognitive awareness training, and designing pedagogical approaches that minimize extraneous cognitive load. Future research should replicate this study with larger samples, longitudinal designs, and objective measures of academic awareness to strengthen the generalizability of these findings.

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