



Does TikTok Really Matter for Academic Achievement? Self-Regulation and Use Duration Among University Students

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Abstract:

The increasing use of TikTok among university students has raised questions about its relationship with academic achievement. Previous studies have reported mixed findings. This study examined the association between self-regulated learning (SRL)-based TikTok use regulation and semester grade point average (GPA) in the full sample and two daily-use duration groups. It extends previous research by examining how students plan, control, and evaluate TikTok use beyond duration or problematic use alone. Separate subgroup analyses explored the association within each duration group. A quantitative, cross-sectional survey involved 197 university students. Analyses included descriptive statistics, Cronbach's alpha, Pearson correlation, simple linear regression, and robustness checks. The full-sample association was near zero and nonsignificant ($r = -0.038$, $p = 0.600$). Associations were also nonsignificant in the groups reporting more than two hours and two hours or less of daily use. Spearman correlations were nonsignificant, and HC3 and bootstrap analyses provided no evidence of significant linear coefficients, although diagnostic concerns limit interpretation. The measured regulation score alone provided little information about differences in semester GPA in this sample. Broader academic behaviors warrant further investigation to clarify the practical relevance of digital self-regulation. These findings do not establish that TikTok use is academically harmless or that associations are statistically equivalent across duration groups.

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Introduction

Social media is part of young people's daily lives. TikTok's short-video format enables users to access, create, and share content for information, communication, and entertainment, making it a common part of daily digital activity.

For university students as members of Generation Z, TikTok serves purposes beyond entertainment and forms part of daily digital activity. Students use it to seek information, follow trends, and interact with others. Generation Z formed the largest group in the 2026 Indonesian internet-user sample, at 38.51% (Asosiasi Penyelenggara Jasa Internet Indonesia, 2026). TikTok was used by 78.4% of Indonesian internet users aged 16 years or older (We Are Social & Meltwater, 2026). Its prevalence raises a question about how students manage their use of the platform.

Research on social media use and academic achievement has produced mixed findings. Previous studies have examined different constructs, including social media use, addiction, and academic procrastination, which need to be distinguished when interpreting their findings (Basri, Sabri, & Rahimi, 2022; Sefriani, Yunus, Ambiyar, Syah, & Fadhillah, 2023; Serrano, Williams, Ezzeddine, & Sapon, 2022). A meta-analysis found a small negative association between social networking addiction and academic achievement (Salari et al., 2025). Research on TikTok has also reported different patterns. Difficulty controlling TikTok use has been associated with academic procrastination (Cahyani, Mahdum, & Supriusman, 2026; Q. Liu & Li, 2024), whereas another study found no significant association between TikTok use experiences and academic performance (Duguma, Abadefar, & Tessema, 2024). Academic procrastination has also been examined as a mediator between TikTok addiction and academic performance (Irawati, Aditomo, & Ayuningtyas, 2025). These findings concern different aspects of TikTok use and different academic outcomes. They therefore provide a basis for examining whether students' regulation of TikTok use, rather than addiction or procrastination, is associated with semester GPA.

These differences also draw attention to how students regulate their digital activities. Self-regulated learning (SRL) involves the regulation of thought, motivation, and behavior in pursuit of goals (Zimmerman, 2002). In educational settings, it includes goal setting, time management, task completion, and evaluation of learning processes (Çakiroğlu, Kokoç, & Atabay, 2024; B. Liu, Liu, & Yang, 2024). Studies have connected SRL with social media use for academic activities (Findyartini et al., 2024) and examined its relationship with short-video addiction and academic well-being (Ye, Cui, Wang, & Ye, 2024). These studies connect digital behavior with learning regulation, although their focus differs from the regulation of TikTok use examined here. The present study applies the SRL framework to students' planning, control, and evaluation of TikTok use and examines whether this specific form of regulation is associated with semester GPA. This distinction matters because managing TikTok use does not necessarily reflect how students manage their academic learning more broadly.

To examine that management more closely, this study draws on the three SRL phases: forethought, performance, and self-reflection (Zimmerman, 2002). Forethought concerns goals and plans before an activity. Performance concerns control and observation during it. Self-reflection concerns the evaluation of outcomes to inform subsequent action. A school-based program demonstrates how assessment and feedback can support this cyclical process in learning (Cleary & Zimmerman, 2004). Although that program does not examine TikTok, the phases also offer a way to examine engagement with technology, including technology that supports self-regulation (Nurulhaifa & Hikmawan, 2026; Radović & Seidel, 2025). Short-video use has also been associated with individuals' ability to control their use behavior (Miedzobrodzka, Du, & van Koningsbruggen, 2024). In this study, these phases guide the assessment of how students plan, control, and evaluate their TikTok use.

Existing research has often described social media use through duration, frequency, or problematic use (Alshuwaiyer, Fujiu, Eby, Walker, & Miller, 2026; Putra, Yuliartini, Irwandi, & Ahmad, 2024). These approaches provide information about use patterns, but they do not directly assess how students plan, control, and evaluate their TikTok use within the SRL framework. Research has also suggested that the relationship between social media use and academic

performance may vary according to individual patterns of use (Ting et al., 2024). Building on this literature, the present study examines SRL-based TikTok use regulation in relation to semester GPA, both in the full sample and separately among students reporting more than two hours and two hours or less of daily TikTok use. Its contribution lies in examining a specific form of digital self-regulation and exploring the pattern of its association with GPA within each duration group. The two-hour boundary followed the questionnaire's response categories and was used for exploratory grouping, rather than as a validated threshold for problematic use.

This study addresses two research questions: (1) Is SRL-based TikTok use regulation associated with students' academic achievement, as represented by semester GPA? (2) What pattern of association appears in the groups with more than two hours and two hours or less of daily TikTok use? Accordingly, this study aims to examine the association between TikTok use regulation and semester GPA in the full sample. Exploratory subgroup analyses examine this association separately among students reporting two hours or less and more than two hours of daily TikTok use.



Method

This study used a quantitative, cross-sectional survey design to examine the association between TikTok use regulation and students' semester grade point average (GPA). Eligible participants were active university students who had used TikTok within the preceding six months. Nonprobability convenience sampling was used to recruit students from three entry cohorts within one study program at an Indonesian university. The questionnaire was hosted on Tally.so and distributed through student WhatsApp groups. The researcher also visited classes from two cohorts to invite students to complete the same questionnaire.

Semester GPA represented academic performance in the semester during which the study was conducted. Records were obtained from the university's student data center through the academic supervisor and used exclusively for research. Results are reported in aggregate to preserve confidentiality. Average daily TikTok use during the preceding six months was recorded in four categories: less than 30 minutes, 30 minutes to less than one hour, one to two hours, and more than two hours. During data preparation, the first three categories were combined into a ≤ 2 -hour group, while the fourth formed the > 2 -hour group. This boundary followed the questionnaire categories and supported exploratory subgroup analyses; it was not a validated threshold for excessive or problematic use. Figure 1 presents the study procedure.

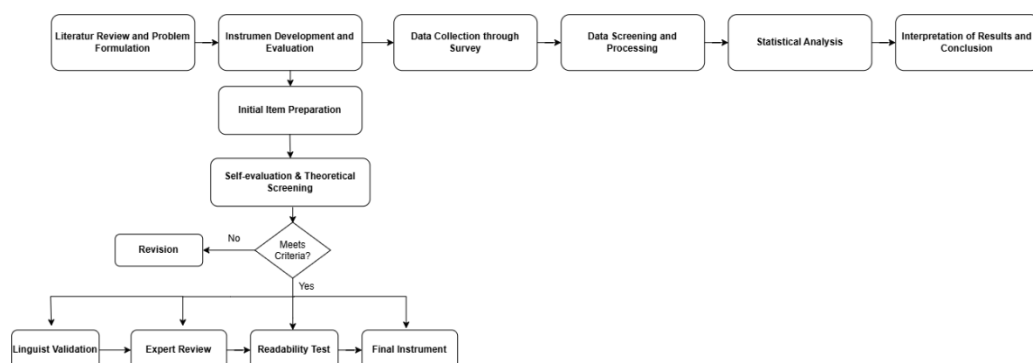


Figure 1. Research Design Flowchart

The instrument drew on three self-regulated learning (SRL) phases: forethought, performance, and self-reflection. An item development matrix mapped these phases onto seven processes relevant to TikTok use: goal setting, strategic planning, attention focusing/self-control,

self-observation/monitoring, self-evaluation, causal attribution, and adaptive inference. Twenty candidate items were screened for theoretical alignment, overlapping content, clarity, and single-idea wording, yielding 18 items.

Item wording underwent iterative readability and clarity checks, drawing on formative evaluation approaches in digital learning development (Mertasari & Candiasa, 2022; Roza, Dewi, & Wahyuni, 2024). Six student TikTok users explained their interpretations without being given the intended meanings, informing revisions to F2, F5, R3, R5, and R7. The academic supervisor reviewed the final instrument, including its four negatively worded items. These procedures supported theoretical alignment and comprehensibility but did not establish statistical construct validity. The final instrument comprised five forethought items, six performance items, and seven self-reflection items, each using a five-point Likert scale. Table 1 presents the final instrument.

Table 1. Final Instrument Items

SRL Phase	Code	Final Instrument Items	Relevant Sources for Item Development
Forethought	F1	Sebelum membuka TikTok, saya sudah tahu tujuan saya menggunakannya.	Liu et al. (2024); Çakiroğlu et al. (2024)
Forethought	F2	Sebelum menggunakan TikTok, saya tidak menentukan berapa lama saya akan menggunakannya.	Liu et al. (2024); Çakiroğlu et al. (2024)
Forethought	F3	Sebelum membuka TikTok, saya mempertimbangkan apakah ada kegiatan lain yang perlu saya selesaikan terlebih dahulu.	Zimmerman (2002); Liu et al. (2024)
Forethought	F4	Sebelum menggunakan TikTok, saya menyiapkan cara agar penggunaan TikTok tidak melebihi batas waktu yang saya tetapkan.	Liu et al. (2024); Çakiroğlu et al. (2024)
Forethought	F5	Sebelum melakukan kegiatan yang membutuhkan fokus, saya mengatur waktu penggunaan TikTok agar tidak mengganggu kegiatan tersebut.	Liu et al. (2024); Çakiroğlu et al. (2024)
Performance	P1	Saat melakukan kegiatan yang membutuhkan fokus, saya berusaha agar TikTok tidak mengalihkan perhatian saya.	Liu et al. (2024); Çakiroğlu et al. (2024)
Performance	P2	Saat perhatian saya teralihkan ke TikTok, saya mengembalikan fokus pada kegiatan yang sedang saya lakukan.	Cleary & Zimmerman (2004); Liu et al. (2024)
Performance	P3	Saya tetap menggunakan TikTok meskipun batas waktu yang saya tetapkan sudah tercapai.	Zimmerman (2002); Cleary & Zimmerman (2004)
Performance	P4	Saat menggunakan TikTok, saya memantau berapa lama waktu yang sudah saya habiskan.	Zimmerman (2002); Cleary & Zimmerman (2004)
Performance	P5	Saya menyadari ketika durasi penggunaan TikTok mulai melebihi batas yang saya tetapkan.	Zimmerman (2002); Cleary & Zimmerman (2004)

Performance	P6	Saya tidak memperhatikan seberapa sering saya membuka TikTok dalam sehari.	Zimmerman (2002); Cleary & Zimmerman (2004)
Self-reflection	R1	Setelah menggunakan TikTok, saya menilai apakah penggunaannya sudah sesuai dengan rencana saya.	Liu et al. (2024); Çakiroğlu et al. (2024)
Self-reflection	R2	Setelah menggunakan TikTok, saya menilai kembali apakah waktu yang saya habiskan sudah sesuai dengan batas waktu yang saya tetapkan.	Liu et al. (2024); Çakiroğlu et al. (2024)
Self-reflection	R3	Setelah menggunakan TikTok, saya menilai apakah TikTok mengganggu kegiatan lain yang seharusnya saya lakukan.	Zimmerman (2002); Liu et al. (2024)
Self-reflection	R4	Setelah menggunakan TikTok lebih lama dari yang direncanakan, saya tidak mencoba mengetahui penyebabnya.	Zimmerman (2002); Cleary & Zimmerman (2004)
Self-reflection	R5	Setelah menggunakan TikTok, saya mengenali hal yang membuat saya sulit berhenti sesuai dengan rencana.	Zimmerman (2002); Cleary & Zimmerman (2004)
Self-reflection	R6	Jika penggunaan TikTok saya tidak sesuai dengan rencana, saya mengubah cara menggunakannya pada kesempatan berikutnya.	Zimmerman (2002); Cleary & Zimmerman (2004)
Self-reflection	R7	Saya menggunakan pengalaman penggunaan TikTok sebelumnya untuk mengatur penggunaan berikutnya.	Zimmerman (2002); Cleary & Zimmerman (2004)

Responses were screened for duplicate submissions, completeness, eligibility, and consistency with academic records. The final dataset contained 197 unique students, each contributing one questionnaire response and one semester GPA record. A duplicate P6 questionnaire column was removed, retaining 18 items. Negatively worded items F2, P3, P6, and R4 were reverse scored as 6 minus the original response. The mean of the 18 scored items represented TikTok use regulation.

Descriptive statistics summarized participant characteristics and study variables, and Cronbach's alpha assessed instrument internal consistency. Pearson's correlation and simple linear regression examined the linear association between regulation and semester GPA in the full sample and each duration group. Regression results included B, β , R^2 , p-values, and 95% confidence intervals for B. Separate subgroup analyses did not formally test whether associations differed between groups.

Regression diagnostics included Shapiro-Wilk tests of residual normality, studentized Breusch-Pagan tests of heteroscedasticity, quadratic terms to examine departures from linearity, and Cook's distance to identify influential observations. These checks did not establish bivariate normality for Pearson's correlation. Sensitivity analyses used Spearman's correlations, HC3 standard errors, and 95% percentile bootstrap confidence intervals from 10,000 resamples. Each regression was also re-estimated after excluding its most influential observation; all participants remained in the primary analyses.

The student was the unit of analysis. Independence between participants was assumed, although possible dependence within shared cohort or classroom environments was not modeled. All significance tests were two-sided, with $\alpha = .05$.

Participant Characteristics and Descriptive Statistics

Result

Data collection yielded 235 initial responses. After screening for duplicate responses, eligibility, identity verification, and consistency with academic records, 197 responses met the criteria for analysis. The remaining 38 responses were excluded.

The sample comprised 138 women (70.1%) and 59 men (29.9%). Based on daily TikTok use duration, 89 participants (45.2%) used TikTok for more than two hours per day, while 108 (54.8%) used it for two hours or less. Table 2 presents the participant characteristics.

Table 2. Participant Characteristics

Characteristic	n	Percentage(%)
Gender		
Female	138	70.1
Male	59	29.9
Daily TikTok use duration		
>2 hours/day	89	45.2
≤2 hours/day	108	54.8

The full sample had a mean TikTok use regulation score of 3.26 (SD = 0.50) and a mean GPA of 3.65 (SD = 0.14). Table 3 presents the full-sample and duration-group statistics.

Table 3. Descriptive Statistics

Group	n	TikTok use regulation, M(SD)	Semester GPA, M (SD)	Cronbach's α
Full sample	197	3.26 (0.50)	3.65 (0.14)	0.777
>2 hours/day	89	3.13 (0.47)	3.67 (0.11)	
≤2 hours/day	108	3.36 (0.50)	3.64 (0.15)	

The 18-item instrument had acceptable internal consistency (Cronbach's $\alpha = 0.777$). The shorter-duration group had a descriptively higher regulation score, while group mean GPAs were close. No test of between-group differences was conducted.

Association Between TikTok Use Regulation and GPA

The full-sample correlation between TikTok use regulation and GPA was very small and nonsignificant ($r = -0.038$, $p = 0.600$).

Both duration groups also showed very small, nonsignificant correlations (Table 4): >2 hours/day, $r = -0.017$ ($p = 0.876$); ≤2 hours/day, $r = -0.005$ ($p = 0.955$).

Table 4. Pearson Correlations Between TikTok Use Regulation and GPA

Group	n	r	p
Full sample	197	-0.038	0.600
>2 hours/day	89	-0.017	0.876
≤2 hours/day	108	-0.005	0.955

Simple Linear Regression of GPA on TikTok Use Regulation

The full-sample regression coefficient was small and nonsignificant ($B = -0.010$, $\beta = -0.038$, $F(1, 195) = 0.276$, $R^2 = 0.001$, $p = 0.600$).

The same pattern appeared in both duration groups. For >2 hours/day, $B = -0.004$, $\beta = -0.017$, $F(1, 87) = 0.025$, $R^2 < 0.001$, and $p = 0.876$. For ≤2 hours/day, $B = -0.002$, $\beta = -0.005$, $F(1, 106) = 0.003$, $R^2 < 0.001$, and $p = 0.955$ (Table 5).

Table 5. Simple Linear Regression of Semester GPA on TikTok Use Regulation

Group	B	β	t	F	R ²	p	95% CI for B
Full sample	-0.010	-0.038	-0.525	0.276	0.001	0.600	[-0.049, 0.028]
>2 hours/day	-0.004	-0.017	-0.157	0.025	<0.001	0.876	[-0.053, 0.046]
≤2 hours/day	-0.002	-0.005	-0.056	0.003	<0.001	0.955	[-0.061, 0.057]

Robustness Checks

Residual normality tests indicated departures from normality in the full sample and the ≤2-hour group (both $p < .001$), but not in the >2-hour group ($p = .733$). Heteroscedasticity was detected in the full sample ($p = .004$) and the ≤2-hour group ($p = .005$), but not in the >2-hour group ($p = .773$). Spearman's correlations were nonsignificant in all groups (all $p \geq .108$). Potential nonlinearity in the ≤2-hour group ($p = .007$) became nonsignificant after excluding its most influential observation in a sensitivity analysis ($p = .469$). Linear coefficients remained nonsignificant after excluding the most influential observation from each model. All 197 participants were retained in the primary analyses.

HC3 standard errors yielded nonsignificant linear coefficients in the full sample ($B = -0.010$, $p = .723$), the >2-hour group ($B = -0.004$, $p = .862$), and the ≤2-hour group ($B = -0.002$, $p = .972$). The corresponding 95% bootstrap confidence intervals were [-0.067, 0.041], [-0.046, 0.040], and [-0.092, 0.078], respectively, all including zero. Table 6 summarizes the HC3 and bootstrap results.

Table 6. Robustness Checks

Group	B	HC3 SE	t	p	Bootstrap 95% CI
Full sample	-0.010	0.029	-0.355	0.723	[-0.067, 0.041]
>2 hours/day	-0.004	0.023	-0.174	0.862	[-0.046, 0.040]
≤2 hours/day	-0.002	0.048	-0.035	0.972	[-0.092, 0.078]



Discussion

This study found very small, nonsignificant linear associations between SRL-based TikTok use regulation and semester GPA in the full sample and both duration groups. These findings should be interpreted in relation to the specific behavior and academic outcome measured.

TikTok Use Regulation and Academic Achievement

TikTok use regulation was not significantly associated with GPA in the full sample ($r = -0.038$, $p = 0.600$; $B = -0.010$, $\beta = -0.038$, $R^2 = 0.001$). HC3 and bootstrap checks supported the same inference. This finding concerns the measured regulation score and does not establish that TikTok has no relationship with students' academic activities.

The instrument assessed students' planning, control, and evaluation of TikTok use within the SRL framework (Zimmerman, 2002). This differs from broader academic self-regulation, study habits, addiction, and academic procrastination. Associations reported for those constructs cannot therefore be assumed to apply to TikTok use regulation. These differences may help explain the nonsignificant association with semester GPA, but the other constructs were not measured, so this explanation remains untested.

The result should also be considered alongside studies that examined different aspects of social media use. Prior research has associated social media use or TikTok use with academic

procrastination and academic performance (Basri et al., 2022; Cahyani et al., 2026; Q. Liu & Li, 2024; Serrano et al., 2022). In contrast, this study assessed the direct linear association between SRL-based TikTok use regulation and semester GPA. Evidence of an association with procrastination does not necessarily imply an association of the same size or direction with GPA. The differences in constructs and outcomes therefore matter when these findings are compared.

The present result resembles a previous finding of no significant association between TikTok use experiences and academic performance (Duguma et al., 2024). Nevertheless, TikTok use experiences and use regulation are different constructs. Academic procrastination may mediate the relationship between TikTok addiction and academic performance (Irawati et al., 2025). Academic self-discipline was also found to partially mediate the relationship between social media addiction and academic achievement (Tekin, 2024). These studies point to possible indirect relationships, but they measured addiction, procrastination, or academic self-discipline rather than the SRL-based regulation of TikTok use assessed here. The present study did not test a mediation model and cannot determine whether either pathway accounts for its result.

The near-zero correlation ($r = -.038$) indicates little linear correspondence between TikTok use regulation and semester GPA in this sample. The regression model accounted for approximately 0.1% of the observed GPA variance ($R^2 = .001$). Semester GPA summarizes performance across courses, whereas the regulation score concerns one digital activity. This difference in scope may help explain the small association, but was not directly tested. The confidence interval includes associations in either direction, so the estimate should not be interpreted as proof of no relationship.

The Role of Daily Use Duration

The separate analyses showed no significant association in either duration group. In the >2-hour group, the correlation was very small ($r = -0.017$, $p = 0.876$), as was the regression coefficient ($B = -0.004$, $\beta = -0.017$, $p = 0.876$). These results did not provide evidence of a linear association between use regulation and GPA within this group. Because procrastination was not measured, the analysis cannot determine whether it played a role in these students' academic activities.

The ≤2-hour group showed a similar pattern ($r = -0.005$, $p = 0.955$; $B = -0.002$, $\beta = -0.005$, $p = 0.955$). Shorter use duration therefore did not reveal a detectable association between regulation and GPA within this group. Duration alone does not describe what students did on TikTok or how their use related to academic tasks, so these results should be interpreted within the limits of the measures used.

The shorter-duration group had a descriptively higher mean regulation score, while mean GPAs were close across the two groups. No test of between-group differences was conducted. Likewise, two nonsignificant within-group coefficients do not establish that the associations were statistically equivalent. The results show only that neither group had a detectable linear association in the separate analyses.

TikTok use regulation scores provided little information about semester GPA in this sample. Nonsignificant results do not establish that TikTok use is academically harmless. Convenience sampling from one program and university limits generalizability. Cross-sectional data and single-semester GPA cannot establish causality or changes over time. Unmeasured academic behaviors leave indirect associations unexamined. Construct validity, diagnostic concerns, and unmodeled cohort or classroom dependence limit interpretation. Future studies could strengthen validation, broaden recruitment, and use repeated measures.



Conclusion

SRL-based TikTok use regulation was not significantly associated with students' semester GPA in the full sample. Students' planning, control, and evaluation of TikTok use showed no statistically significant linear association with semester GPA. The regulation score explained little variation in GPA, although diagnostic concerns require cautious interpretation.

The same pattern appeared in both daily-use duration groups. Neither students reporting more than two hours nor those reporting two hours or less showed a statistically significant linear association between use regulation and semester GPA. These separate analyses did not establish whether the associations differed statistically between groups. The findings do not rule out nonlinear or indirect relationships between TikTok use and academic outcomes.

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