

Peer influence and self-regulation as determinants of learning discipline among vocational high school students

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Abstrak

Penelitian ini bertujuan untuk (1) mengetahui pengaruh teman sebaya terhadap kedisiplinan belajar (2) mengetahui pengaruh regulasi diri terhadap kedisiplinan belajar (3) mengetahui pengaruh teman sebaya dan regulasi diri secara simultan terhadap kedisiplinan belajar. Penelitian ini menggunakan metode kuantitatif dengan pendekatan korelasional. Populasi dan sampel dalam penelitian ini ditentukan dengan teknik pengambilan sampel jenuh berjumlah 70 siswa. Teknik pengumpulan data dilakukan melalui penyebaran angket tertutup menggunakan modifikasi skala likert yang telah diuji validitas dan reliabilitas. Analisis data dengan model regresi linear berganda menggunakan program IBM SPSS 25. Hasil penelitian menunjukkan (1) teman sebaya tidak berpengaruh signifikan terhadap kedisiplinan belajar dengan signifikansi $0,012 > 0,05$ serta nilai thitung $>$ ttabel yaitu $2,584 > 1,668$ (2) Regulasi diri berpengaruh signifikan terhadap kedisiplinan belajar dengan nilai signifikansi regulasi diri adalah $0,000 < 0,05$ dan nilai thitung $5,447 >$ nilai ttabel $1,668$ (3) teman sebaya dan regulasi diri secara simultan berpengaruh terhadap kedisiplinan belajar siswa dengan signifikansi $0,000 < 0,05$ dan nilai Fhitung $10,882 >$ Ftabel $3,134$. Nilai R-Square $0,397$ sehingga dapat diartikan bahwa kedisiplinan belajar dipengaruhi teman sebaya dan regulasi diri sebesar $39,7\%$.

Kata kunci : disiplin belajar, teman sebaya, regulasi diri, sekolah kejuruan

Abstract

Learning discipline is a critical determinant of academic success and work readiness, yet it remains low among vocational students. This study examined the effects of peer influence and self-regulation on the learning discipline of tenth-grade students in the Office Management and Business Services program at a public vocational high school in Indonesia, where preliminary data showed that 58% of students engaged in disciplinary violations. A quantitative, causal-associative design was employed. Through saturated sampling, 70 students completed a validated closed questionnaire based on a modified four-point Likert scale, and the data were analyzed using multiple linear regression. Peer influence did not significantly affect learning discipline ($t = 1.358, p = .179$), whereas self-regulation had a

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strong, significant effect ($t = 5.447$, $p < .001$). Jointly, the two predictors significantly explained learning discipline, $F(2, 67) = 22.023$, $p < .001$, accounting for 39.7% of its variance ($R^2 = .397$), with self-regulation contributing far more (34.62%) than peer influence (5.04%). These findings indicate that learning discipline in vocational settings is driven primarily by internal regulatory capacity rather than peer dynamics, suggesting that schools should prioritize strengthening students' self-regulation as the principal strategy for improving discipline and industrial work readiness.

Keywords: learning discipline; peer influence; self-regulation; vocational education; multiple regression

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Introduction

Discipline constitutes the moral foundation that enables students to pursue learning in an orderly and goal-directed manner (Battuta et al., 2023). Disciplined students tend to be more successful because they use learning time optimally, follow instructions effectively, and demonstrate responsibility (Khoeriyah, 2022). In practice, however, students' learning discipline in schools remains low. International evidence indicates that self-regulation is crucial in vocational education for managing complex tasks and preparing students for the workforce (Zimmerman, 2000), whereas low discipline adversely affects academic performance and employability (Duckworth & Seligman, 2005). Consistent with this concern, Fathurizqy and Ulfatun (2024) reported that only 7 of 36 students participated actively in learning, while the remainder were largely passive—sitting quietly, preoccupied with their mobile devices, or merely listening to the teacher without engagement.

Preliminary observation at the research site, a public vocational high school (SMK Negeri 1 Banyudono), revealed comparable patterns: students frequently arrived late, submitted assignments late, talked with peers during lessons, used mobile devices in class, and participated little. An interview with a teacher in the Office Management and Business Services (OMBS) program corroborated these observations, noting that many students were inattentive, created an uncondusive classroom atmosphere, and habitually delayed completing tasks, often requiring reprimands or sanctions. Because learning discipline influences both learning outcomes and readiness for the workforce, improving it is of considerable importance in vocational education.

Learning discipline is a key factor in students' academic success (Wahab et al., 2021); it encompasses active participation in class, adherence to study schedules, and timely completion of assignments, and it helps create a conducive and effective learning environment. Ardian et al. (2021) classified the factors influencing learning discipline into two categories. Intrinsic factors originate within the student and include physiological conditions (health and fitness) and psychological conditions (motivation, drive, and emotion), whereas extrinsic factors comprise the social environment (family, peers, and community) and the non-social environment (fresh air, comfortable temperature, and supportive learning facilities).

Peers are friends or companions of similar age with whom individuals engage in shared activities (Husna et al., 2023). Peer relationships serve an important function by providing students with feedback about their abilities and behavior within the group; through such interactions, students appraise whether their behavior is better than, equal to, or worse than that of their peers, using others' actions as a reference for self-evaluation. Hamzah and Setiawati (2020) found that peers influence students' discipline, shaping how they think and act through shared age, attitudes, and social environment. From this perspective, students' relationships with peers may serve as a source of learning discipline.

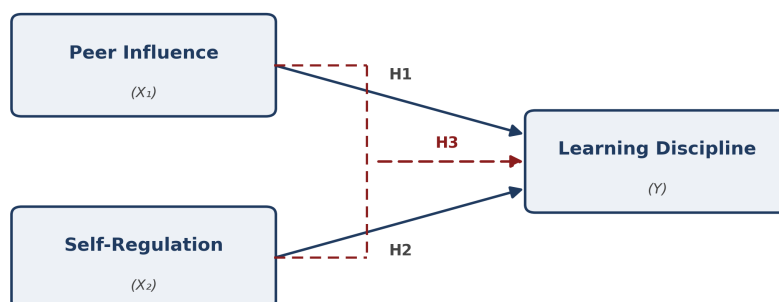
Self-regulation is the individual's capacity to manage and organize thoughts, emotions, and actions in pursuit of specific goals. Lasmanawati (2021) described it as an active process encompassing the planning, monitoring, and evaluation of one's actions to achieve desired outcomes. Self-regulation enables students to set priorities and cope with challenges in attaining learning goals, and it plays a decisive role in

how they manage time, select study methods, and sustain motivation to complete academic tasks. Baeng et al. (2021) reported a positive and significant relationship between self-regulation and learning discipline, with well-regulated students tending to complete and submit assignments on time, adhere to study schedules, and participate actively in class.

Although prior studies have largely examined peer influence and self-regulation separately, research integrating the two simultaneously among vocational students remains scarce. Most existing studies focus on general secondary schools and therefore provide limited insight into the discipline dynamics of vocational students, particularly in the OMBS program, which is characterized by practice-based learning and industry demands. The present study addresses this gap by simultaneously modeling the contributions of peer influence (X_1) and self-regulation (X_2) to learning discipline (Y) in a vocational context and by clarifying the relative dominance of internal over external factors. Accordingly, three hypotheses were tested: peer influence significantly affects learning discipline (H1); self-regulation significantly affects learning discipline (H2); and peer influence and self-regulation jointly affect learning discipline (H3). The conceptual framework is presented in Figure 1.

Figure 1.

Conceptual framework of the relationships among peer influence, self-regulation, and learning discipline.



Method

Research Design and Setting

This study employed a quantitative approach with a causal-associative design. It was conducted at SMK Negeri 1 Banyudono (Jalan Kuwiran No. 3, Banyudono District, Boyolali Regency, Central Java, Indonesia) from September 2025 to April 2026. The independent variables were peer influence (X_1) and self-regulation (X_2), and the dependent variable was learning discipline (Y).

Participants and Sampling

The population comprised 70 tenth-grade OMBS students. Saturated sampling was used, in which the entire population serves as the sample (Suriani et al., 2023). A questionnaire administered via Google Forms was distributed directly to the students; all participants completed it, yielding a 100% response rate, and all responses were valid for analysis.

Instrument

Data were collected using a closed questionnaire with a modified four-point Likert scale (1–4). A four-category scale was preferred over a five-category scale to eliminate the neutral midpoint, which often yields ambiguous responses, thereby clarifying respondents' opinions and improving data validity. Respondents selected one of four options: strongly agree, agree, disagree, or strongly disagree. The questionnaire measured three variables. Indicators of learning discipline followed Admelia et al. (2021): compliance with the learning process, adherence to school rules, and punctuality in study. Indicators of peer influence followed Santrock (as cited in Azkiya, 2020) and Khairinal et al. (2020): peer interaction, peer

support, peers as study partners, and peer influence. Indicators of self-regulation followed Lasmanawati (2021): cognitive, emotional, and behavioral regulation. The items were developed by the researchers based on these indicators and analyzed using IBM SPSS version 25.

Validity and Reliability

The instrument was pilot-tested on 41 students from the Marketing program, who shared characteristics with the target population. Cronbach's alpha values were .819 for learning discipline (21 items), .860 for peer influence (16 items), and .850 for self-regulation (15 items). Validity testing identified four learning-discipline items that did not meet the criteria; these were removed, yielding a final instrument of 17 items for learning discipline, 16 for peer influence, and 15 for self-regulation.

Data Analysis

Data were analyzed using multiple linear regression. The analysis began with data tabulation, followed by classical assumption tests (normality, linearity, multicollinearity, and heteroscedasticity) and hypothesis testing (partial t tests, the simultaneous F test, and the coefficient of determination). The effective and relative contributions of each predictor were then computed from the coefficient of determination (R^2).

Results

Descriptive Statistics

Descriptive statistics for the two predictors—peer influence (X_1) and self-regulation (X_2)—and the outcome, learning discipline (Y), are presented in Table 1.

Table 1.
Descriptive Statistics of the Study Variables

Statistic	Peer Influence	Self-Regulation	Learning Discipline
N	70	70	70
M	51.44	45.71	51.54
Median	51	46	51
Mode	49	47	53
SD	6.191	6.530	6.414
Variance	38.337	42.642	41.150
Range	26	29	30
Minimum	38	31	36
Maximum	64	60	66

As shown in Table 1, learning discipline ranged from 36 to 66 ($M = 51.54$, $SD = 6.414$), peer influence ranged from 38 to 64 ($M = 51.44$, $SD = 6.191$), and self-regulation ranged from 31 to 60 ($M = 45.71$, $SD = 6.530$). The three variables were measured by 17, 16, and 15 items, respectively, on a modified four-point Likert scale without a neutral option.

Classical Assumption Tests

All classical assumptions were satisfied. The Kolmogorov–Smirnov test indicated normally distributed data (Asymp. Sig. = .200 > .05). Linearity tests confirmed linear relationships between each predictor and learning discipline (peer influence, $p = .002$; self-regulation, $p < .001$). Multicollinearity was absent, with tolerance = .847 (> .10) and VIF = 1.181 (< 10) for both predictors. Heteroscedasticity was not detected, as the significance values exceeded .05 for both peer influence ($p = .648$) and self-regulation ($p = .921$).

Regression Analysis and Hypothesis Testing

The multiple linear regression coefficients are presented in Table 2.

Table 2.
Multiple Linear Regression Coefficients

Model	B	Std. Error	β
(Constant)	18.857	5.665	—
Peer Influence	0.145	0.107	.140
Self-Regulation	0.552	0.101	.562

As shown in Table 2, the regression equation was $\hat{Y} = 18.857 + 0.145X_1 + 0.552X_2$. The constant (18.857) represents the predicted level of learning discipline when both predictors equal zero. Both predictors had positive coefficients: a one-unit increase in peer influence was associated with a 0.145-unit increase in learning discipline, and a one-unit increase in self-regulation with a 0.552-unit increase.

Table 3 presents the partial (t) test results. Peer influence did not significantly predict learning discipline ($t = 1.358$, $p = .179$; $t < t\text{-critical} = 1.668$); thus, H1 was not supported. In contrast, self-regulation was a significant positive predictor ($t = 5.447$, $p < .001$; $t > 1.668$), supporting H2.

Table 3.

Results of the Partial (t) Test

Predictor	t	p
(Constant)	3.328	.001
Peer Influence	1.358	.179
Self-Regulation	5.447	< .001

As shown in Table 4, the simultaneous F test was significant, $F(2, 67) = 22.023$, $p < .001$ ($F > F\text{-critical} = 3.134$), indicating that peer influence and self-regulation jointly predicted learning discipline; H3 was therefore supported.

Table 4.

Results of the Simultaneous (F) Test

Source	Sum of Squares	df	Mean Square	F	p
Regression	1126.233	2	563.116	22.023	< .001
Residual	1713.139	67	25.569		
Total	2839.371	69			

Table 5 reports the model summary. Together, the two predictors explained 39.7% of the variance in learning discipline ($R^2 = .397$), leaving 60.3% attributable to factors not examined in this study.

Table 5.

Model Summary and Coefficient of Determination

R	R^2	Adjusted R^2	Std. Error of the Estimate
.630	.397	.379	5.057

To disaggregate each predictor's contribution, effective and relative contributions were computed from the standardized coefficients and zero-order correlations summarized in Table 6.

Table 6.

Standardized Coefficients, Correlations, and R Square

Variable	Standardized Coefficient (β)	Correlation (r)	R^2
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Peer Influence	.140	.360	.397
Self-Regulation	.562	.616	

As shown in Table 7, the effective contribution of self-regulation (34.62%) far exceeded that of peer influence (5.04%), summing to 39.66% ($\approx 39.7\%$), which is consistent with R^2 .

Table 7.
Effective Contribution of the Predictors

Variable	Computation	Contribution
Peer Influence	$.140 \times .360 \times 100\%$	5.04%
Self-Regulation	$.562 \times .616 \times 100\%$	34.62%
Total		39.66%

Correspondingly, Table 8 shows that self-regulation accounted for 87.3% of the relative contribution and peer influence for 12.7%.

Table 8.
Relative Contribution of the Predictors

Variable	Computation	Contribution
Peer Influence	5.04% / 39.66%	12.7%
Self-Regulation	34.62% / 39.66%	87.3%
Total		100%

Discussion

Contrary to H1, peer influence did not significantly affect learning discipline ($t = 1.358$, $p = .179$). This finding diverges from Ramadhani and Fauziah (2020) and Hamzah and Setiawati (2020), who reported significant peer effects on discipline, but it aligns with Regain et al. (2020), who argued that discipline is driven more strongly by internal factors such as intrinsic motivation, study habits, and the school environment. In this context, peers appear to function as a supporting rather than a determining factor, exerting a moderate influence that may reinforce or weaken discipline depending on individual student characteristics.

Supporting H2, self-regulation significantly affected learning discipline ($t = 5.447$, $p < .001$): the stronger a student's self-regulation, the higher their learning discipline. This result is consistent with Baeng et al. (2021), who found that well-regulated students complete assignments on time, adhere to study schedules, and participate actively in class while planning, monitoring, and evaluating their own learning. Self-regulation thus plays a central role in shaping discipline, as students who can manage themselves, choose goal-supportive activities, and sustain motivation under challenge tend to be more disciplined.

Supporting H3, peer influence and self-regulation jointly affected learning discipline, $F(2, 67) = 22.023$, $p < .001$, explaining 39.7% of its variance ($R^2 = .397$). Self-regulation was clearly the dominant predictor, with an effective contribution of 34.62% compared with 5.04% for peer influence. Strong self-regulation enables students to remain consistent and to control impulses, manage time, set goals, and evaluate outcomes, whereas peers contribute through group norms, emotional support, and behavioral modeling, albeit less powerfully.

The dominance of self-regulation over peer influence (34.62% vs. 5.04%) reflects a broader pattern in which internal factors outweigh external ones in vocational education. Practice-based, independent task work demands personal discipline that social support cannot fully replace. Moreover, peer influence tends to be moderate in relatively homogeneous student groups, functioning more as a reminder than as a primary driver. Nevertheless, the two factors are interrelated: peers can strengthen self-regulation through collaborative study and mutual reminders, but this influence becomes meaningful primarily once students

possess adequate self-regulation to act as a filter, enabling them to harness positive peer influence strategically while managing independent demands such as time management and self-evaluation. Efforts to improve learning discipline should therefore prioritize strengthening self-regulation—through habituation in self-management, time management, and intrinsic-motivation building at school and at home—with peers serving as secondary reinforcement.

Conclusion

This study examined the effects of peer influence and self-regulation on the learning discipline of tenth-grade OMBS students. Self-regulation significantly and substantially predicted learning discipline, indicating that students' capacity for self-management directly shapes disciplined behavior such as punctuality, rule adherence, and engagement in the learning process. Peer influence, by contrast, did not independently predict discipline, suggesting that peer norms, support, and social pressure do not by themselves shape discipline in this vocational setting, although they may matter in specific situations. Jointly, the two factors significantly predicted learning discipline, implying that discipline among vocational students is determined more by internal capacity (self-regulation) than by external influence (peers).

These findings offer practical guidance for improving learning discipline in vocational schools, primarily through strengthening self-regulation and leveraging peers as strategic support. Priority should be given to developing self-management skills via regular practice in study planning, progress monitoring, and self-evaluation, integrated into the vocational curriculum and guidance-and-counseling services. Teachers may form structured study groups with positive norms, while schools could hold periodic self-regulation workshops, provide independent-study spaces, and involve parents and industry partners to build a comprehensive support ecosystem.

Several limitations should guide future research. First, the study was conducted at a single school with a tenth-grade OMBS sample, limiting the generalizability of the findings to other educational contexts. Second, the cross-sectional design constrains causal inference, as data were collected at a single time point and cannot establish temporal ordering. Third, reliance on self-report questionnaires may introduce common method bias, whereby respondents answer consistently across items and inflate observed correlations. Future studies should incorporate additional variables related to learning discipline and adopt more diverse designs and data sources.

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