

General Self-Efficacy and Self-Directed Learning Readiness among Nursing Internship Students: A Cross-Sectional Study

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Received: 2026-02-04 ○ Revised: 2026-03-20 ○ Accepted: 2026-05-20 ○ Published: 2026-06-06

ABSTRACT

Introduction: Self-directed learning readiness (SDLR) is a core competency in nursing education, particularly during internship programs that require autonomy, accountability, and clinical adaptability. General Self-Efficacy (GSE) has been theoretically associated with motivation, persistence, and self-regulation, which are central to self-directed learning. However, empirical evidence regarding the relationship between GSE and SDLR in structured internship contexts remains inconclusive. This study aimed to examine the association between GSE and SDLR among nursing students undertaking internship projects.

Research Methodology: A cross-sectional analytic study was conducted involving 295 nursing internship students at Universitas Aisyiyah Yogyakarta, Indonesia, selected through total sampling. Data were collected using validated General Self-Efficacy (GSE) and Self-Directed Learning Readiness (SDLR) scales. Descriptive statistics were used to summarize respondent characteristics. Bivariate analysis was performed using the chi-square test, and odds ratios (OR) with 95% confidence intervals (CI) were calculated. Multivariate logistic regression analysis was conducted to control for sex. Statistical significance was set at $p < 0.05$.

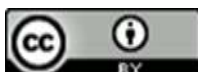
Results: Most respondents demonstrated high GSE (69.8%) and high SDLR (86.4%). Students with high GSE were more likely to report high SDLR compared to those with moderate GSE (OR = 1.468; 95% CI: 0.732–2.940; $p = 0.277$). After adjustment for sex, the association remained non-significant (AOR = 1.420; 95% CI: 0.701–2.875; $p = 0.320$). Although a positive directional trend was observed, the effect size was weak and did not reach statistical significance.

Conclusion: General self-efficacy was not an independent predictor of self-directed learning readiness in this internship context. These findings suggest that a combination of individual psychological factors and structured educational support influences SDLR. Nursing education programs should integrate mentorship, scaffolded autonomy, and training in problem-solving and self-management to strengthen students' readiness for professional practice.

Keywords: Academic Self-Efficacy; Self-Directed Learning Readiness; Nursing Students; Internship Project; Professional Education.



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INTRODUCTION

Self-directed learning (SDL) has become a strategic imperative in contemporary health professions education. Globally, rapid technological advancement, increasing patient complexity, and unpredictable health crises require nurses who are capable of autonomous decision-making and continuous professional development (Alshowkan & Shdaifat, 2025). The World Health Organization emphasizes the importance of strengthening the nursing workforce to achieve universal health coverage, underscoring the need for adaptive and lifelong learners (Azza et al., 2025). Within this context, self-directed learning readiness (SDLR) represents a foundational competence that enables nursing students to independently identify learning needs, formulate goals, seek resources, and evaluate outcomes. However, evidence suggests that variability in students' readiness remains a persistent challenge across educational systems (Cao et al., 2025).

At the national level, Indonesian nursing education has undergone significant reforms to align with competency-based curricula and professional standards (Cavalcante et al., 2026). Internship programs constitute a critical transitional phase in which students shift from structured academic instruction to more autonomous clinical engagement (Chen et al., 2026). During this period, students are expected to demonstrate initiative, responsibility, and reflective practice. Nevertheless, disparities in confidence, learning strategies, and clinical problem-solving capacity indicate that not all students are equally prepared to assume self-directed roles (Damani et al., 2025). Empirical studies in Indonesia generally report high levels of SDLR, yet the determinants of this readiness, particularly internal psychological factors, remain insufficiently clarified (Fisher et al., 2001).

International literature consistently highlights self-efficacy as a central predictor of academic performance, persistence, and motivation. General self-efficacy (GSE), defined as an individual's belief in their capacity to manage challenges and achieve goals, has been associated with greater engagement in autonomous learning behaviors (Gou et al., 2026). Several studies in nursing and health professions education suggest positive correlations between self-efficacy and SDLR. Students with stronger efficacy beliefs tend to show greater persistence, stronger self-regulation, and a greater willingness to confront complex clinical situations (Güven et al., 2026). However, empirical findings are not fully consistent (Ho & Le, 2026). Some investigations demonstrate significant predictive relationships, whereas others report weak or non-significant associations, particularly in structured internship contexts where supervision and institutional support may moderate individual psychological influences (Han et al., 2025).

Critically, much of the existing research focuses on classroom-based learning environments or employs heterogeneous student populations, limiting the specificity of conclusions for internship settings (Li & Chalermvongsavej, 2025). Furthermore, few studies disaggregate the internal dimensions of GSE and SDLR to identify which domains exert the strongest influence during professional transition phases. In the Indonesian context, evidence examining the direct association between GSE and SDLR among nursing internship students remains scarce (Liu et al., 2024). This gap limits educators' capacity to design targeted interventions that integrate psychological empowerment with structured academic support.

The explicit research gap addressed in this study concerns the limited and inconclusive evidence on the association between general self-efficacy and self-directed learning readiness in the specific context of Indonesian nursing internship programs. Although theoretical models suggest a positive linkage, empirical confirmation in structured clinical environments is lacking. Additionally, there is insufficient exploration of domain-level patterns that may clarify how

persistence, problem-solving competence, self-control, and self-management interact in shaping readiness.

The novelty of this study resides in its contextual and analytical contribution. First, it situates the investigation within Indonesian nursing internship programs, where structured supervision may influence the manifestation of self-directed learning. Second, it simultaneously examines overall associations and domain-level strengths, enabling a more nuanced understanding of how internal psychological constructs relate to learning readiness. By identifying dominant and weaker dimensions, the study provides practical implications for curriculum design and mentorship strategies.

Therefore, the objective of this study is to analyze the association between general self-efficacy and self-directed learning readiness among nursing students undertaking internship projects at Universitas Aisyiyah Yogyakarta. Specifically, this study aims to determine whether higher levels of GSE are associated with higher SDLR and to identify domain-level patterns that may inform educational interventions designed to strengthen students' readiness for professional practice.

RESEARCH METHODOLOGY

Research Design

This study employed an analytic cross-sectional design to examine the association between general self-efficacy (GSE) and self-directed learning readiness (SDLR) among nursing students undertaking internship projects. The cross-sectional design was chosen because it allows for the assessment of the relationship between variables at a single point in time, providing a snapshot of the factors influencing SDLR during internship projects.

Setting and Samples

The study was conducted at Universitas Aisyiyah Yogyakarta, Indonesia, during the students' internship phase. Participants were recruited using total sampling, ensuring that all nursing students from the 2019 and 2020 academic cohorts who met the inclusion criteria were invited to participate. The inclusion criteria required participants to be undergraduate nursing students currently enrolled in an internship. Students who were not actively participating in the internship phase were excluded from the study. A total of 295 students participated in the study, providing a comprehensive representation of the target population. The sample size was determined based on a medium effect size and a power of 0.80, which is typically adequate for this type of correlation study.

Measurement and Data Collection

Data were collected using two validated self-administered questionnaires: the General Self-Efficacy (GSE) scale, developed by Schwarzer (1992), and the Self-Directed Learning Readiness (SDLR) scale by Fisher et al. The GSE scale consists of 10 items measuring perceived confidence in problem-solving competence (four items), persistence/goal commitment (three items), and self-confidence in coping (three items). The SDLR scale consists of 35 items measuring self-management (ten items), desire for learning (four items), and self-control (21 items). Previous studies confirmed the validity and reliability of these instruments. The GSE scale demonstrated strong psychometric properties, with reliability coefficients (Cronbach's alpha) ranging from 0.84 to 0.90 in (Murwani et al., 2017), indicating high internal consistency. Similarly, the SDLR scale, validated by Cadorin et al. (2017), showed reliability coefficients ranging from 0.79 to 0.92, confirming its adequacy for use in the nursing student population.

Data was collected under the researcher's supervision in a classroom setting to minimize bias. Students completed the questionnaires anonymously after obtaining informed consent. Operationally, GSE was defined as the student's perceived confidence in managing academic challenges and achieving learning goals. For GSE scores, 38-50 indicated high efficacy; 24-37, moderate efficacy; and 10-23, low efficacy. SDLR was defined as readiness to engage in autonomous learning, including management, motivation, and self-control. For SDLR, scores of 128-175 indicated high readiness; 82-127 moderate readiness; and 35-81 low readiness.

Data Analysis

Data were analyzed using SPSS version 25. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to summarize respondent characteristics and the distribution of General Self-Efficacy (GSE) and Self-Directed Learning Readiness (SDLR) scores. Bivariate analysis was performed using the chi-square test to examine the association between GSE and SDLR levels categorized by GSE. Odds ratios (ORs) with 95% confidence intervals (CIs) were calculated to estimate effect sizes. To identify independent predictors of high SDLR, binary logistic regression analysis was conducted, adjusting for sex as a potential confounder. Adjusted odds ratios (AOR) with 95% CI were reported. Statistical significance was determined at $p < 0.05$.

Ethical Consideration

Ethical approval was obtained from the Research Ethics Committee of Universitas Aisyiyah Yogyakarta (No. 3872/KEP-UNISA/VII/2024). Informed consent was obtained from all participants, with assurance that their participation was voluntary, anonymous, and confidential. Participants were informed about the purpose of the study and their right to withdraw at any time without consequence.

RESULT

Table 1. Demographic Characteristics of Respondents (N = 295)

Variable	n	%
Sex		
Male	32	10.8
Female	263	89.2

The *sample* was predominantly female, reflecting the gender distribution commonly observed in nursing education programs.

Table 2. Association between GSE and SDLR (Chi-square Analysis)

GSE Level	High SDLR n (%)	Moderate SDLR n (%)	Total	OR (95% CI)	p-value
High	181 (61.4)	25 (8.5)	206	1.468 (0.732–2.940)	0.277
Moderate	74 (25.1)	15 (5.1)	89	Reference	
Total	255 (86.4)	40 (13.6)	295		

Effect Size: OR = 1.468; 95% CI = 0.732–2.940.

Students with high GSE were 1.46 times more likely to demonstrate high SDLR compared to those with moderate GSE. However, the confidence interval crossed 1, and the p-value (0.277) exceeded 0.05, indicating that the association was not statistically significant and the effect size was weak.

Table 3. Logistic Regression Predicting High SDLR

Variable	Adjusted OR (AOR)	95% CI	p-value
High GSE	1.420	0.701–2.875	0.320
Female (vs Male)	1.185	0.482–2.912	0.710

Effect Size: Adjusted OR for high GSE = 1.420; 95% CI = 0.701–2.875.

After controlling for sex, students with high GSE were more likely to have high SDLR (AOR = 1.420). However, the association remained statistically non-significant ($p = 0.320$). Sex was also not a significant predictor of SDLR. These findings indicate that general self-efficacy does not independently predict readiness for self-directed learning in this internship context. Overall, although a positive directional trend was observed, both bivariate and multivariate analyses demonstrated weak effect sizes and non-significant associations between GSE and SDLR.

This study examined the relationship between General Self-Efficacy (GSE) and Self-Directed Learning Readiness (SDLR) among nursing internship students. Overall, the findings indicate that most students demonstrated high levels of both GSE (69.8%) and SDLR (86.4%), suggesting that the majority perceived themselves as confident and prepared for autonomous learning during their internship phase. At the domain level, persistence/goal commitment emerged as the strongest component of GSE, while problem-solving competence showed relatively lower scores. Similarly, within SDLR, self-control was the dominant domain, whereas self-management appeared comparatively weaker. These patterns indicate that students possess strong motivational endurance and behavioral regulation but may require further support in analytical reasoning and organizational skills during clinical practice. Analysis revealed a positive but non-significant association between GSE and SDLR (OR = 1.468; 95% CI: 0.732–2.940; $p = 0.277$). Students with high GSE were more likely to report high SDLR; however, the effect size was weak, and the confidence interval crossed unity. Multivariate logistic regression analysis confirmed that GSE did not independently predict SDLR after adjustment for sex (AOR = 1.420; 95% CI: 0.701–2.875; $p = 0.320$). Collectively, these findings suggest that although self-efficacy aligns directionally with readiness for self-directed learning, it does not function as a sole determinant in the internship context. Readiness for autonomous learning appears to be shaped by a more complex interaction between individual psychological factors and structured educational support systems.

DISCUSSION

This study investigated the association between General Self-Efficacy (GSE) and Self-Directed Learning Readiness (SDLR) among nursing students undertaking internship projects. The findings indicate that the majority of students demonstrated high levels of both GSE and SDLR. Domain-level analysis revealed that persistence/goal commitment was the strongest component of GSE, whereas problem-solving competence was comparatively weaker. Within SDLR, self-control emerged as the dominant dimension, while self-management showed relatively lower scores. Despite high levels of both constructs, bivariate and multivariate analyses indicated that GSE was not a statistically significant predictor of SDLR. Although a positive directional trend was observed, the effect size was weak and did not reach statistical significance. Collectively, these findings suggest that, while nursing internship students perceive themselves as confident and ready for autonomous learning, general self-efficacy alone does not fully explain variations in self-directed learning readiness in this structured clinical education context (Longhini et al., 2024).

Theoretically, self-efficacy is rooted in Bandura's Social Cognitive Theory, which posits that individuals' beliefs in their capabilities influence motivation, persistence, and performance. Within academic settings, higher self-efficacy is typically associated with stronger engagement, adaptive learning strategies, and resilience in the face of challenges (Mancin et al., 2025). In

parallel, self-directed learning theory conceptualizes readiness as a multidimensional construct encompassing self-management, motivation (desire for learning), and self-control (Nguyen et al., 2025). The present findings partially align with these theoretical assumptions. The dominance of persistence/goal commitment within GSE reflects the motivational dimension predicted by social cognitive theory: students who believe in their competence are more likely to sustain effort and remain committed to long-term goals. Similarly, the prominence of self-control within SDLR supports the theoretical proposition that self-regulation is central to autonomous learning (Quah et al., 2025).

However, the absence of a statistically significant association between GSE and SDLR challenges a simplistic causal interpretation. It suggests that readiness for self-directed learning during internships may not operate solely as a function of internal efficacy beliefs (Sarıköse et al., 2025). Instead, SDLR in clinical education appears embedded within a socio-constructivist framework, in which learning autonomy is co-shaped by environmental structure, mentorship, clinical protocols, and institutional expectations (Schneider et al., 2025). Internship programs are not fully unstructured learning environments; supervision, assessment standards, and professional regulations guide them (Silitonga et al., 2025). In such contexts, external scaffolding may attenuate the predictive power of individual psychological constructs (Stewart-Tufescu et al., 2025). Students with moderate self-efficacy may still achieve high readiness when supported by structured mentorship and clearly defined clinical objectives. Thus, the findings highlight the contextual moderation of self-efficacy effects within structured professional education systems (Suprpto et al., 2021).

International research frequently reports significant positive relationships between self-efficacy and self-directed learning. Studies conducted in Europe, the Middle East, and East Asia have demonstrated that higher academic self-efficacy predicts stronger SDL engagement, improved learning strategies, and better clinical performance (Suprpto et al., 2024). Systematic reviews in health professions education also suggest that self-efficacy functions as a robust motivational driver for lifelong learning. However, inconsistencies have also been documented. Several studies in internship or transition-to-practice contexts report weaker or context-dependent associations (Wijayanti et al., 2025). In structured clinical environments, organizational culture, supervisory support, and standardized competencies often exert substantial influence on students' learning behaviors (Turan & Cengiz, 2025). The present findings resonate with this body of evidence, suggesting that in highly regulated internship systems, institutional support mechanisms may compensate for variations in personal efficacy (Vasli & Asadiparvar-Masouleh, 2024).

Regionally, research in Southeast Asia indicates generally high SDLR levels among nursing students, often attributed to competency-based curricula and strong clinical supervision frameworks. Nevertheless, empirical exploration of psychological determinants in Indonesian internship settings remains limited. By demonstrating a non-significant association between GSE and SDLR despite high levels of both variables, this study contributes region-specific evidence that challenges universal assumptions derived from Western contexts. The domain-level findings also provide a nuanced contribution. Persistence and self-control were strong, yet problem-solving competence and self-management were comparatively weaker. This pattern aligns with studies indicating that while nursing students are often motivated and disciplined, they may require additional structured training in analytical reasoning and resource organization during clinical placements. Thus, the study bridges motivational theory with practical challenges in competency development.

The primary conceptual contribution of this study is to demonstrate that high self-efficacy does not automatically translate into greater readiness for self-directed learning in structured internship contexts. Rather than functioning as a direct determinant, GSE appears to align directionally with SDLR but is insufficient as a standalone explanatory variable. This finding encourages reconceptualizing SDLR in professional education as a systems-based construct. Instead of being solely an individual psychological attribute, readiness for self-directed learning should be understood as an emergent property of interactions between personal agency and institutional scaffolding. In other words, SDLR is co-produced by learner beliefs and systemic design. By highlighting the moderating influence of structured supervision and clinical protocols, the study contributes to a more integrative framework that connects social cognitive theory with socio-constructivist perspectives. It underscores that educational systems may either amplify or buffer the effects of individual psychological characteristics.

From a systemic perspective, the findings imply that strengthening students' self-efficacy alone is unlikely to optimize readiness for autonomous professional practice. Curriculum designers should adopt a multi-layered approach that integrates psychological empowerment with structured experiential learning. First, mentorship programs should be institutionalized to provide guided autonomy. Rather than removing structure to foster independence, educators should gradually scaffold responsibility while modeling clinical reasoning processes. Second, curricular interventions should target weaker domains identified in this study, particularly problem-solving competence and self-management. Case-based learning, simulation training, reflective debriefings, and time-management workshops may strengthen these competencies. Third, evaluation systems should assess not only cognitive achievement but also self-regulatory and organizational competencies. Embedding structured reflective portfolios and competency-based feedback mechanisms may reinforce self-directed behaviors within clinical settings. At a policy level, nursing education regulators may consider integrating SDL competency indicators into accreditation standards, ensuring that institutions cultivate both internal motivational attributes and supportive structural conditions.

Strengths and Limitations

This study possesses several strengths. It focuses specifically on internship-phase nursing students, a population undergoing a critical professional transition. The use of validated instruments enhances measurement reliability, and the inclusion of both bivariate and multivariate analyses provides methodological rigor. Additionally, the domain-level examination offers granular insights beyond aggregate scores. However, limitations should be acknowledged. The cross-sectional design precludes causal inference and limits interpretation to associative patterns. The sample was drawn from a single institution, potentially restricting generalizability to other regions or institutional models. The predominance of female participants reflects the demographic reality of nursing education but limits gender-based comparative analysis.

Furthermore, reliance on self-report questionnaires may introduce social desirability bias. Future research should employ longitudinal or mixed-methods designs to explore how self-efficacy and SDLR evolve across internship stages. Intervention studies examining structured mentorship or scaffolded autonomy models could clarify causal mechanisms and test systemic enhancement strategies.

This study advances understanding of the relationship between self-efficacy and self-directed learning readiness in Indonesian nursing internship education. While both constructs are generally high among students, general self-efficacy does not independently predict readiness for autonomous learning. The findings underscore the importance of viewing SDLR as a systemically

embedded construct shaped by the interaction of personal beliefs and institutional design. Strengthening nursing education, therefore, requires not only fostering confidence but also strategically engineering supportive clinical learning environments that translate belief into competence.

CONCLUSION

This study aimed to examine the association between General Self-Efficacy (GSE) and Self-Directed Learning Readiness (SDLR) among nursing students undertaking internship projects. The findings demonstrate that although most students reported high levels of both GSE and SDLR, general self-efficacy was not a statistically significant predictor of readiness for self-directed learning. While students with higher GSE showed a positive directional association with higher SDLR, the effect size was small and did not reach statistical significance. These results indicate that confidence in one's abilities alone is insufficient to ensure readiness for autonomous learning in structured clinical internship contexts.

The evidence suggests that a dynamic interaction between individual psychological attributes and institutional learning structures shapes SDLR. Therefore, nursing education policies should not rely solely on enhancing students' self-efficacy; they should also integrate structured mentorship, scaffolded clinical autonomy, and targeted training in problem-solving and self-management skills. Embedding guided reflective practice, case-based learning, and competency-based feedback mechanisms within internship programs may strengthen students' preparedness for independent professional practice. Such system-oriented interventions are essential to translate self-belief into sustainable clinical competence.

Funding Statement

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. The study was conducted as part of academic research activities at Universitas Aisyiyah Yogyakarta, and all costs related to data collection, analysis, and manuscript preparation were supported independently by the authors and institutional academic resources.

Conflict of Interest

The author declares no conflict of interest related to this study.

Authors' Contributions

Diyah Candra Anita (DCA) conceived and designed the study, coordinated data collection, performed statistical analysis, interpreted the findings, and drafted the initial manuscript. Tiwi Sudyasiha (TS) contributed to study supervision, critically reviewed the methodology and data interpretation, and provided substantial revisions to improve the intellectual content of the manuscript. Both authors approved the final version of the manuscript and agree to be accountable for all aspects of the work.

Acknowledgments

The authors express their sincere appreciation to the nursing internship students who participated in this study and to Universitas Aisyiyah Yogyakarta for institutional support throughout the research process.

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