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A Review on the Relationship between Self-Efficacy and Academic Procrastination among College Students

Zhou Jing[1], Zaida Nor Binti Zainudin[1*], Akmarina Binti Ahmad Othman[1]

[1]Faculty of Educational Studies, Universiti Putra Malaysia, Malaysia.

*Corresponding Author Email: zaidanor@upm.edu.my

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Abstract

Academic procrastination has emerged as a prevalent and persistent issue among college students, detrimentally impacting academic performance and contributing to various psychological problems, including anxiety, stress, and depression. Academic self-efficacy—a core psychological construct reflecting students' confidence in their ability to manage academic tasks—has been identified as a critical determinant of learning behavior, influencing both cognitive strategies and behavioral choices. However, the precise nature of the relationship between academic self-efficacy and academic procrastination remains contested within the scholarly community. This study adopts a systematic review approach to examine the relationship and underlying mechanisms between these two constructs. A total of 13 peer-reviewed articles were retrieved from two major academic databases, EBSCOhost and Google Scholar. The review reveals a "conditional universality" of the inhibitory effect of academic self-efficacy on academic procrastination: 84.6% of the studies demonstrated a consistent cross-cultural pattern supporting the protective role of self-efficacy. Nevertheless, this relationship is moderated by contextual factors such as cultural values and task-specific characteristics. Furthermore, academic self-efficacy was found to influence procrastination through three primary mechanisms: emotional regulation, transformation of resource chains, and the activation of executive synergy networks. Based on these findings, the study proposes a context-sensitive intervention paradigm designed to enhance academic self-efficacy and reduce procrastination across diverse learning environments.

Keywords: self-Efficacy, Academic Procrastination, College Students

Introduction

Academic Procrastination has become a pervasive and detrimental issue among college students globally （Jayalakshmi & Punithavalli 2024). Empirical evidence indicates that approximately 70% of college students engage in varying degrees of Academic Procrastination

(Pereira & Ramos, 2021). This behavior not only compromises academic performance but is also robustly linked to adverse mental health outcomes, including heightened anxiety, chronic stress, and depression (Li & Ren, 2022; Kuftyak, 2022). When confronted with academic demands, students frequently delay task completion due to overwhelming backlogs, fear of failure, or eroded self-confidence (Fentaw et al., 2022). Critically, chronic procrastination can trigger a self-perpetuating cycle of negative emotions and maladaptive behaviors, further diminishing students' Academic Self-Efficacy (Fentaw et al., 2022). Consequently, developing effective interventions to mitigate Academic Procrastination represents an urgent scholarly and practical priority (Salguero-Pazos & Reyes-de-Cózar, 2023).

Academic Self-Efficacy—defined as students' confidence in their capacity to execute academic tasks successfully (Shaked & Altarac, 2022)—serves as a pivotal psychological resource in combating procrastination (Yuan et al., 2024). Grounded in Bandura's Social Cognitive Theory, self-efficacy profoundly influences behavioral choices, effort investment, and task persistence. Students with higher Academic Self-Efficacy are more likely to employ proactive learning strategies and exhibit lower levels of procrastination (Yıldız et al., 2025; Shaked & Altarac 2023). While extant studies affirm its generally protective role (Alves et al., 2024), significant knowledge gaps persist regarding: the underlying mechanisms through which self-efficacy reduces procrastination, particularly involving cognitive-behavioral regulation and affective regulation pathways; the contextual boundaries of this relationship, especially how it is moderated by cultural dimensions and disciplinary characteristics. To address these critical gaps, this study will conduct a comprehensive systematic literature review. Our objectives are twofold: Investigate the relationship between Academic Self-Efficacy and Academic Procrastination behavior through a systematic literature review; Assess the mediating role of Academic Self-Efficacy in Academic Procrastination, with a focus on cognitive-behavioral and affective pathways. By elucidating the nuanced interplay between self-efficacy, mediating processes, and contextual moderators, this research aims to provide an integrated theoretical framework for understanding procrastination dynamics. Ultimately, findings will inform the design of culturally sensitive and discipline-specific interventions to empower students in overcoming academic procrastination.

Objectives

1. To investigate the Relationship Between Academic Self-Efficacy and Academic Procrastination Behavior.
2. To assess the mediating role of Academic Self-Efficacy in Academic Procrastination.

Methodology

Database Selection and Search Strategy

To systematically explore the relationship between Academic Self-Efficacy and academic procrastination among university students, a structured and comprehensive search strategy was developed. Two major academic databases were selected: EBSCOhost, accessed through an institutional subscription, and Google Scholar, chosen for its extensive indexing of interdisciplinary and peer-reviewed academic sources. These databases provided a robust foundation for identifying empirical studies in the field of education psychology and student behavior. The search was conducted using the following core keywords and Boolean operators: "Academic Self-Efficacy" AND "Academic Procrastination" AND "Students".

Variations such as "College Students" OR "University Students" were also used to refine the population focus.

To maintain currency and relevance, the search was limited to publications between 2021 and 2025. Filters were applied to include only peer-reviewed empirical studies published in English and to exclude non-empirical articles such as theoretical papers, reviews, conference proceedings, books, and book chapters. The search results were exported into a reference management tool for initial screening and de-duplication.

Inclusion and Exclusion Criteria

To ensure the relevance, quality, and comparability of the selected studies, clearly defined inclusion and exclusion criteria were established prior to the screening process. Studies were included if they were peer-reviewed empirical articles published between 2021 and 2025, focused specifically on university or college students, and investigated the relationship between academic self-efficacy and academic procrastination. Only studies published in English and presenting quantitative or mixed-method data were considered. Conversely, studies were excluded if they were duplicates, literature reviews, theoretical papers, book chapters, or conference proceedings. Research involving non-university populations or lacking full-text access was also excluded. These criteria ensured that the final selection reflected the most recent and methodologically sound research relevant to the review's objectives

Study Selection and Data Extraction

The selection of studies followed a multi-step process to maintain transparency and rigor. An initial total of 2,408 articles was retrieved through keyword searches. After removing duplicates and screening titles and abstracts for relevance, only studies directly addressing the core relationship were retained. Full-text reviews were then conducted to assess eligibility based on the predefined criteria, resulting in a final sample of 13 studies. A standardized data extraction protocol was employed to capture essential information from each study, including author, year, country, sample characteristics, methodology, measurement instruments, and key findings. This approach ensured consistency across data sources and facilitated structured comparison. Figure 1 below illustrates the PRISMA-style flow diagram used to document the study selection process.

Data Analysis

Given the diversity in research methods, populations, and measurement tools across the selected studies, a narrative synthesis was adopted for data analysis. This qualitative approach allowed for the identification of recurring patterns, thematic insights, and contextual differences without relying on statistical aggregation. The synthesis focused on examining the direction and strength of the relationship between academic self-efficacy and procrastination, as well as highlighting influential factors such as cultural context, academic discipline, and intervention strategies. Additionally, methodological limitations and recommendations reported in the original studies were reviewed to inform future research directions.

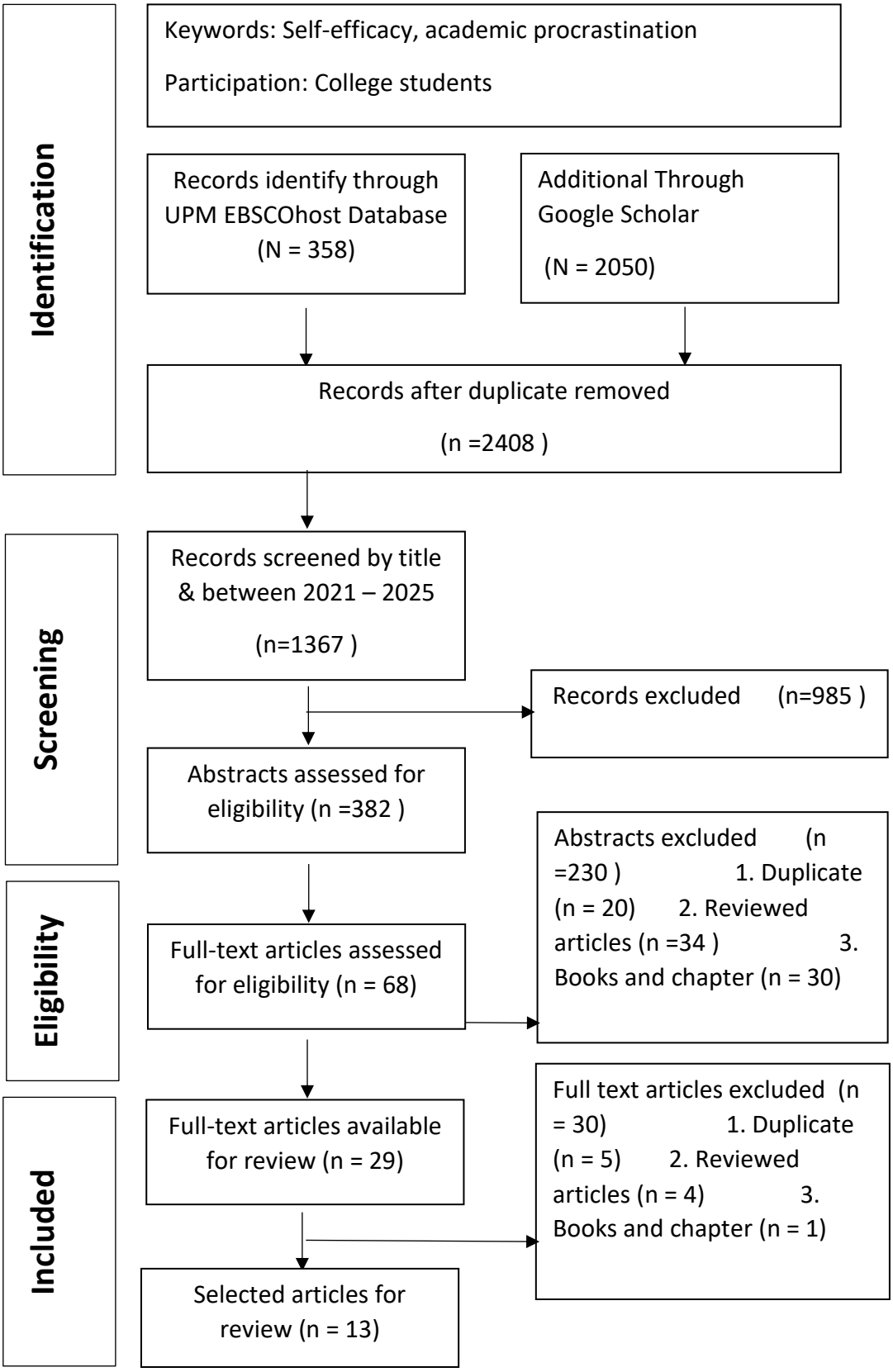

Figure 1: Flow diagram for selection review of studies on the relationship between academic Self-efficacy and learning procrastination

Findings of Literature Review

Table 1 depicts the information from the selected studies on the relationship between Academic Self-Efficacy and learning procrastination among university students. Each entry explicitly states the author, year of publication, title of journal article, country of origin, participants, research design, and key findings. This comprehensive synthesis provides a clear panorama of evidence regarding the interplay of self-efficacy beliefs and procrastination behaviors in higher education contexts. The studies encompass diverse cultural settings including China, Pakistan, Norway, Peru, Turkey, and multinational collaborations, ensuring globally representative insights.

Table 1

Selected articles pertaining the relationship between academic self-efficacy and learning procrastination

Author	Title	Participants	Study design	Findings highlight
Svartdal et al. (2022)	Study Habits and Procrastination: The Role of Academic Self-Efficacy.	752 undergraduates	Cross-sectional SEM	Higher academic self-efficacy significantly reduced learning procrastination through improved study habits.
Wang et al. (2024)	The association between procrastination in academic writing and negative emotional states during the COVID-19 pandemic: The indirect effects of stress coping styles and self-efficacy	475 graduate students	Longitudinal study	Procrastination indirectly diminished academic self-efficacy via maladaptive stress-coping and negative emotions.
Zhang et al. (2024)	The multiple mediating effects of self-efficacy and resilience on the relationship between social support and procrastination among vocational college students: a cross-sectional study	1379 vocational students	Cross-sectional study	Academic self-efficacy lowered procrastination primarily by enhancing resilience among vocational students
Ren et al. (2021)	*The Relationship between Physical Activity and Academic Procrastination in Chinese College Students: The Mediating Role of Self-Efficacy*	687 College students	correlational study	Physical activity reduced academic procrastination fully through boosting academic self-efficacy.
Yuan et al. (2024)	Digital literacy as a catalyst for academic confidence: exploring the interplay between academic self-efficacy and academic procrastination among medical students	659 medical students	A descriptive cross-sectional survey	Digital literacy strengthened academic self-efficacy's negative impact on procrastination in medical students.
Ashraf et al. (2023)	Impact of Self-Efficacy and Perfectionism on Academic Procrastination among	405 university students	Correlational survey	perfectionism significantly impacted academic procrastination, but

	University Students in Pakistan			self-efficacy showed no significant effect.
Morin-Huapaya et al. (2023)	Role of procrastination as a mediator of self-efficacy and emotional state in academic situations	531 university students	a non-probability convenience sampling method	High self-efficacy negatively influences procrastination. High self-efficacy increases positive affect and decreases negative affect.
Chen et al. (2021)	Structural Relationship among Mobile Phone Dependence, Self-Efficacy, Time Management Disposition, and Academic Procrastination in College Students	324 physical education majors	Quantitative research	Mobile Phone Dependence was positively correlated with academic procrastination and self-efficacy for self-regulated learning, but negatively correlated with time management disposition.
Shah et al. (2024)	Relationship between academic procrastination and self-efficacy amongst dental undergraduate students at a public university in Karachi, Pakistan	136 dental undergraduate students	Descriptive study	A strong negative correlation existed between academic self-efficacy and procrastination in dental students.
Li et al. (2022)	Physical Activity and Academic Procrastination among Chinese University Students: A Parallel Mediation Model of Self-Control and Self-Efficacy	564 university students	Cross-sectional design	Self-control and self-efficacy were significant mediators in the relationship between physical activity and academic procrastination
Huang et al. (2023)	The association between perfectionism and academic procrastination among undergraduate nursing students: The role of self-efficacy and resilience	587 nursing students	Across-sectional survey	Time management training significantly improved students' self-efficacy and reduced academic procrastination; self-efficacy played a partial mediating role.
Yildiz et al. (2025)	The Effect of Smartphone Addiction and Academic Self-Efficacy of Sports Sciences Students on Academic Procrastination Behavior	210 university students	Relational screening model with quantitative methods	smartphone addiction significantly predicted academic procrastination behavior, however, did not significantly affect academic procrastination.
Alves et al. (2024)	Procrastination, time management and self-efficacy among university students	800 university students	Cross-sectional quantitative study	There is a significant negative correlation between self-efficacy and academic procrastination.

Discussion

This study aims to explore the relationship between academic self-efficacy and learning procrastination among university students and assess the mediating role of academic self-efficacy in academic procrastination.

Across 13 studies reviewed, 11 (84.6%) reported a significant negative correlation between Academic Self-Efficacy and Academic Procrastination. This finding was consistent across diverse cultural contexts, including Norway (Svartdal et al., 2022), China (Wang et al., 2024), and Brazil (Alves et al., 2024). This robust pattern strongly aligns with Bandura's social cognitive theory, positing that efficacy beliefs influence behavioral engagement by modulating goal commitment (Svartdal & Gamst-Klaussen, 2022). Steel (2007) meta-analytically demonstrated the inverse relationship between self-efficacy and procrastination, a conclusion further corroborated by evidence that academic self-efficacy serves as a key protective factor against academic procrastination Huang et al., 2023; Sagone & Indiana 2023; Chee et al., 2021). Notably, two studies deviated from this pattern: (Ashraf et al., 2023) found no significant association within a Pakistani sample, potentially attributable to the dominant effect of perfectionism attenuating the explanatory power of self-efficacy. Similarly, Yıldız et al. (2025) reported non-significant mediation pathways for self-efficacy among sports science students, likely due to the highly standardized nature of training protocols in that discipline. These exceptions highlight contextual limitations to the efficacy pathway. The negative association between self-efficacy and academic procrastination demonstrates substantial cross-cultural robustness, though it is bidimensionally moderated by cultural values and task-specific characteristics.

Basic Intermediary Pathway: Self-efficacy fully mediates the effects of physical activity on procrastination (Ren et al., 2021) and partially mediates the association between perfectionism and procrastination (Huang et al., 2023), confirming the core mechanism of “efficacy translates environmental inputs” in Zimmerman's (2000) theory of self-regulation.

Chain mediation network: Academic Self-Efficacy is embedded in a complex transmission chain (e.g., social support → mental toughness → Academic Self-Efficacy → procrastination; Zhang et al., 2024), expanding on Wolters' (2003) single-mediator model to reveal how efficacy converts resources into action.

Self-regulation synergy: Self-efficacy reduces procrastination by improving study habits (Svartdal et al., 2022) and synergizing with self-control (Li et al., 2022), reinforcing the executive function of efficacy beliefs in Pintrich's (2004) learning regulation model. The triple transmission pathways identified in the study (physical activity→self-efficacy→procrastination; stress→negative emotion→self-efficacy→procrastination) provide a more refined mapping of the effects than in earlier studies (e.g., which examined the direct stress-procrastination relationship alone) and highlight the pivotal role of self-efficacy in integrating the environmental-cognitive-behavioral system.

Stronger Academic Self-efficacy - Academic Procrastination associations in the health sciences (Nursing: Huang et al., 2023; Dentistry: Shah et al., 2024) echo Steel's (2007) discussion of the “moderating efficacy role of task importance”. Digital literacy enhances Academic Self-efficacy (Yuan et al., 2024) while cell phone dependence diminishes Academic Self-efficacy (Chen et al., 2021), revealing the paradoxical effects of technological tools on

self-regulation, consistent with contemporary trends in educational psychology (Rozgonjuk et al., 2020). Academic Self-efficacy enhances positive emotions/suppresses negative emotions and reduces procrastination (Morin-Huapaya et al., 2023), which provides empirical support for (Schuenemann et al., 2022; Chen & Chung2025; Rad et al., 2025) argument that emotion regulation influences procrastination.

Implication

Educational interventions must be combined with disciplinary attributes and technology tools: engineering students can develop task mastery through "digital literacy + task decomposition" training; medical students should apply "resilience-technical efficacy" collaborative interventions using virtual simulations to reduce responsibility anxiety; universal interventions can promote "dynamic goal-setting" apps to enhance efficacy perception through progress visualization.

Curriculum design should incorporate self-regulatory strategies: freshman courses can include "growth mindset" training; students from collectivist cultural backgrounds might integrate cultural values through "family-school collaborative goal-setting"; online courses could introduce "technology-driven tasks" to enhance technical skills and self-efficacy. Policy support should foster interdisciplinary collaboration: teacher training programs should focus on "efficacy-boosting" teaching methods, such as formative assessments; localized platforms integrating management tools, academic resources, and psychological support should be developed; and "autonomous training plans" should be designed for low-autonomy majors (e.g., physical education).

Future Recommendation

Most existing studies use cross-sectional designs, which limits the ability to establish causal links. Future research should adopt longitudinal tracking to examine bidirectional effects, such as whether a decline in self-efficacy leads to increased procrastination or the other way around. For instance, annual surveys tracking students across academic years could explore how changes in self-efficacy relate to procrastination patterns, especially during high-pressure times like exam seasons or thesis deadlines. To refine the cultural dimension, existing studies have not explored enough non-Western cultures. In the future, we need to focus on Africa, the Middle East, and Southeast Asia to examine how religious beliefs and collectivist values regulate the relationship between self-efficacy and learning procrastination, so as to validate the influence of cultural factors on the “Emotion Regulation Pathway” and the “Resource Chain Transformation” mechanism. The influence of cultural factors on the “emotion regulation path” and the “resource chain transformation” mechanism should be verified.

The null effect in sports students (Yıldız et al., 2025) highlights the necessity for intervention research tailored to specific disciplines.

Future studies should examine whether task autonomy influences the impact of self-efficacy, using qualitative interviews to understand students’ views on their control over tasks; Test adaptive interventions for high-pressure fields like medicine, such as "stress inoculation training," which combines virtual clinical simulations with mindfulness techniques to reduce anxiety. While existing literature emphasizes technology's potential to boost self-efficacy through digital literacy training (Yuan et al., 2024), its use also presents risks of

procrastination due to distractions or information overload. Future research should take a more nuanced approach to address this paradox.

Limitation

There are significant methodological limitations in the current research design within this field: the vast majority of empirical evidence relies on cross-sectional data, which cannot establish the causal direction and temporal mechanisms between core variables, such as self-efficacy and procrastination behavior.

There is a lack of cultural and disciplinary representativeness in the sample: existing literature heavily relies on specific cultural contexts from Western Europe and South Asia; uneven representation across disciplines results in conclusions that cannot be generalized to diverse educational settings. There is a lack of adequate empirical testing of targeted intervention approaches proposed based on research findings. On the one hand, most of the existing intervention studies are short-term experiments, making it difficult to assess the long-term effects of these strategies. On the other hand, intervention strategies in different scenarios have not been fully validated in diverse student populations and educational settings, and their applicability and effectiveness still need to be further explored to ensure that they can practically help teachers and parents develop effective procrastination intervention programs.

Conclusion

The main findings of this study are as follows: (1) 84.6% of the studies demonstrated a consistent cross-cultural pattern supporting the protective role of self-efficacy; (2) Nevertheless, this relationship is moderated by contextual factors such as cultural values and task-specific characteristics; (3) academic self-efficacy was found to influence procrastination through three primary mechanisms: emotional regulation.

Affective Regulation: Anchored in Sirois & Pychyl's (2013) mood-priority model, academic self-efficacy reduces AP by enhancing positive affect and suppressing negative emotions; Resource Serialization: Transcending Wolters' (2003) single-mediator limitation, academic self-efficacy converts external resources (e.g., social support → resilience → academic self-efficacy → AP chains) into behavioral momentum; Executive Synergy: Embodied through cognitive-behavioral coupling (e.g., Academic Self-Efficacy × self-control interaction optimizing learning habits), this pathway operationalizes Pintrich's (2004) self-regulation theory. Based on the double-edged sword of technology (digital literacy empowerment/cell phone dependence eroding self-efficacy) and the disciplinary gravity effect (strength of self-efficacy-learning procrastination correlation in the health sciences), three types of core strategies were constructed: creative tasks to activate emotion regulation mechanisms to reinforce positive emotions; procedural tasks to enable external supervisory surrogates; and technology-intensive environments to cultivate digital intentionality competencies including instrumental use and immersive use.

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