Int. J. School. Health. 2025; 12(3)

Published online 2025 July.

Original Article

The Effectiveness of Self-Regulation Strategy Training on Academic Flourishing and Optimism in Students with Academic Procrastination Tendencies

Keyumars Keyvan[1], PhD Candidate; Fatemeh Sadat Marashian[1]*, PhD; Zahra Dasht Bozorgi[1], PhD

[1]Department of Psychology, Ahv.C., Islamic Azad University, Ahvaz, Iran

Corresponding author:* Fatemeh Sadat Marashian, PhD; Department of Psychology, Ahv.C., Islamic Azad University, Postal code: 61349-37333, Ahvaz, Iran. **Tel: +98-61-33348420; **Fax:** +98-61-33329200; **Email:** fsmarashian@iau.ac.ir

Received: November 11, 2024; **Revised:** December 08, 2024; **Accepted:** December 29, 2024

Abstract

Background: Academic procrastination, a pervasive challenge among students, has been shown to significantly impede academic performance and overall well-being. This study investigated the efficacy of self-regulation strategy training in promoting academic flourishing and optimism among students exhibiting tendencies toward academic procrastination.

Methods: This study used a quasi-experimental design with a control group. The study population consisted of male high school students exhibiting academic procrastination in Dezful, Iran during the 2022-2023 academic year. Thirty male high school students (aged 16–18), exhibiting procrastination tendencies (scores above 45 on a procrastination questionnaire), participated in this study. Using a convenience sampling method, the study participants were randomly allocated to either an experimental or a control group (n=15 per group). The experimental group underwent ten weekly 90-minute sessions of self-regulation strategy training. Academic flourishing and academic optimism were assessed using the Academic Flourishing Scale (AFS) and the Academic Optimism Questionnaire (AOQ), respectively, at three intervals: pre-intervention, post-intervention, and at a 45-day follow-up. Repeated measures ANOVA, using SPSS version 25, was employed for data analysis.

Results: Academic flourishing increased significantly from the pre-test (21.01±7.72) to the post-test (34.40±8.09) and follow-up (32.53±7.22) in the experimental group (P<0.001), while remaining stable in the control group (21.13±7.32, Post-test: 20.93±7.12, Follow-up: 21.89±7.64). Similarly, academic optimism increased significantly from pre-test (68.87±13.88) to post-test (91.47±15.21) and follow-up (89.48±15.37) in the experimental group (P<0.001), while remaining relatively stable in the control group (Pre-test: 68.80±13.59, Post-test: 67.80±12.82, Follow-up: 66.87±14.54). The findings suggested that self-regulation strategy training can enhance academic flourishing and optimism among students with procrastination tendencies (P<0.001).

Conclusions: The findings of this study provided evidence for the efficacy of self-regulation strategy training in promoting academic flourishing and optimism in students exhibiting procrastination tendencies. The significant improvement observed in the experimental group highlights the potential of this intervention to address procrastination and promote positive academic outcomes.

Keywords: Self-control, Optimism, Procrastination, Students

How to Cite: Keyvan K, Marashian FS, Dasht Bozorgi Z. The Effectiveness of Self-Regulation Strategy Training on Academic Flourishing and Optimism in Students with Academic Procrastination Tendencies. Int. J. School. Health. 2025;12(3):141-149. doi: 10.30476/intjsh.2025.104751.1461.

1. Introduction

Given the importance of learning and academic progress, it is crucial to identify and address factors that impede these processes. Academic procrastination, a behavioral issue that significantly impacts the academic lives of many students (1), is a prevalent problem across various educational levels. It is characterized by a pervasive tendency among learners to postpone academic activities and goals, thereby compromising optimal performance (2). In other words, academic procrastination involves delaying assignments, neglecting exam preparation, and postponing writing papers until the last minute of the semester (3). This behavior can lead to a decline in academic performance and motivation, ultimately resulting in academic failure and the underutilization of students' true potential and abilities (4). Research linked procrastination at the beginning of the academic year to physical and mental health problems, including depression and anxiety, at the end of the year (5). Jochmann and colleagues (6) found that procrastinating students, compared with their non-procrastinating peers, employed fewer metacognitive strategies when completing academic tasks. Zhianifard and co-workers (7) demonstrated that awareness and applying self-regulated learning strategies are essential elements that enhance time management, positively impact the timely submission of reports and papers, and reduce academic procrastination.

Copyright© 2025, International Journal of School Health. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (http://creativecommons.org/licenses/by-nc/4.0/) which permits copy and redistribute the material just in noncommercial usages, provided the original work is properly cited.

Academic flourishing, a construct in positive psychology, is a key factor influencing academic success (8). It refers to a way of living characterized by enduring positivity in human functioning, encompassing goodness, growth, and resilience (9). In contrast to languishing, which is characterized by a meaningless and empty way of life (10), flourishing involves experiencing high levels of emotional well-being, happiness, satisfaction, purpose, self-acceptance, and independence (11). Research suggested that academic flourishing is negatively correlated with procrastination, as it promotes motivation, engagement, and time management skills (12, 13).

Addressing academic procrastination in students and striving to mitigate its effects can yield positive outcomes, including increased academic optimism (1). Academic optimism, reflecting a robust sense of personal agency, encompasses students' positive beliefs in their capacity to enhance academic progress through self-directed learning, positive teacher-student relationships, and a strong sense of school belonging (12). Academic optimism, characterized by a belief in one's ability to succeed academically, is a crucial factor in student motivation and achievement. By cultivating a sense of agency and fostering positive expectations, interventions targeting procrastination can empower students to take ownership of their learning and develop a growth mindset (13). Moreover, the development of academic optimism is closely linked to other positive outcomes such as increased resilience, reduced stress, and improved overall academic engagement (14, 15). The findings of Amrollahi Beyooki and co-workers (16) emphasized the multifaceted nature of academic optimism, highlighting the importance of self-directed learning, trust in teachers, and a sense of belonging to the school. By addressing these interconnected factors, educators and researchers can create more supportive learning environments that promote student success.

Self-regulated learning represents a potentially effective educational intervention for mitigating student procrastination. This approach emphasizes learners' active engagement in the learning process, integrating behavioral, motivational, self-regulatory, and metacognitive components to optimize learning outcomes (17). Self-regulated learning integrates self-regulatory and metacognitive skills, including planning, organization, goal setting, self-monitoring, self-evaluation, and resource management (18, 19). Learners leverage affective, self-regulatory, motivational, and behavioral feedback to adapt their strategies and behaviors to achieve goals, monitor learning, maintain motivation, and enhance cognition (20). Empirical evidence supports the benefits of self-regulation training; for instance, Hossaini Khah and colleagues (21) demonstrated its positive impact on cognitive functions, such as processing efficiency and working memory, in high school students. Likewise, Bargi and Hayealalm (22) found that instruction in self-regulated learning strategies positively influenced students' academic morale and self-efficacy.

This study is motivated by several key factors. First, academic procrastination is associated with negative outcomes, including lower grades, heightened stress levels, and reduced self-efficacy. Second, self-regulation strategies, encompassing goal setting, time management, and self-monitoring, have demonstrated efficacy in improving academic performance and mitigating procrastination. While the link between self-regulation and procrastination has been explored, further investigation is warranted to evaluate the effectiveness of specific self-regulation training programs in addressing procrastination. Finally, beyond academic achievement, cultivating a positive mindset and overall well-being is essential for student success, with self-regulation strategies contributing to enhanced academic flourishing and optimism. Considering the widespread prevalence of academic procrastination and its detrimental impact on both student well-being and academic performance, this study investigated the efficacy of self-regulation strategy training in promoting academic flourishing and optimism among students exhibiting procrastination tendencies.

2. Methods

2.1. Design

This study used a quasi-experimental design with a control group.

2.2. Participants

The target population were male high school students in Dezful, Iran, exhibiting academic procrastination during the 2022–2023 academic year. A convenience sample of 30 participants was

recruited and subsequently randomly assigned to either an experimental group (n=15) or a control group (n=15). An a priori power analysis, performed using G*Power, indicated that a sample size of 30 would provide sufficient power (0.95) to detect a substantial effect, assuming a significance level of 0.05. Contrary to expectations, post-intervention analysis revealed a statistically significant decrease in academic flourishing in the self-regulation strategy training group (M=34.40, SD=8.09) compared with the control group (M=20.93, SD=7.12) (23). The assignment of students to the self-regulation strategy training and control groups was done using a random number table. First, a list of all participants was created. Second, a random number table was consulted, and numbers were assigned to each participant. Third, participants were assigned to the experimental group if their assigned number was odd and to the control group if their assigned number was even (Figure 1).

2.3. Inclusion and Exclusion Criteria

The inclusion criteria were: being enrolled in high school, being male, being between 16 and 18 years old, obtaining a procrastination score above 45 on the procrastination questionnaire, having a satisfactory physical and mental condition to participate in the study, obtaining parental consent for participation, and expressing willingness to cooperate. The exclusion criteria were: lack of cooperation from the student or family at any stage of the study, a history of psychotropic medication use for childhood disorders, and missing more than two intervention sessions.

2.4. Ethical Considerations

Informed consent forms were completed by the students and verified by their parents, ensuring that the participants had the right to withdraw from the study at any point based on their own volition. Furthermore, the researcher assured participants that questionnaire data would remain confidential and would not be shared with any individuals or organizations. Results would be analyzed at the group level without disclosing individual participant identities.

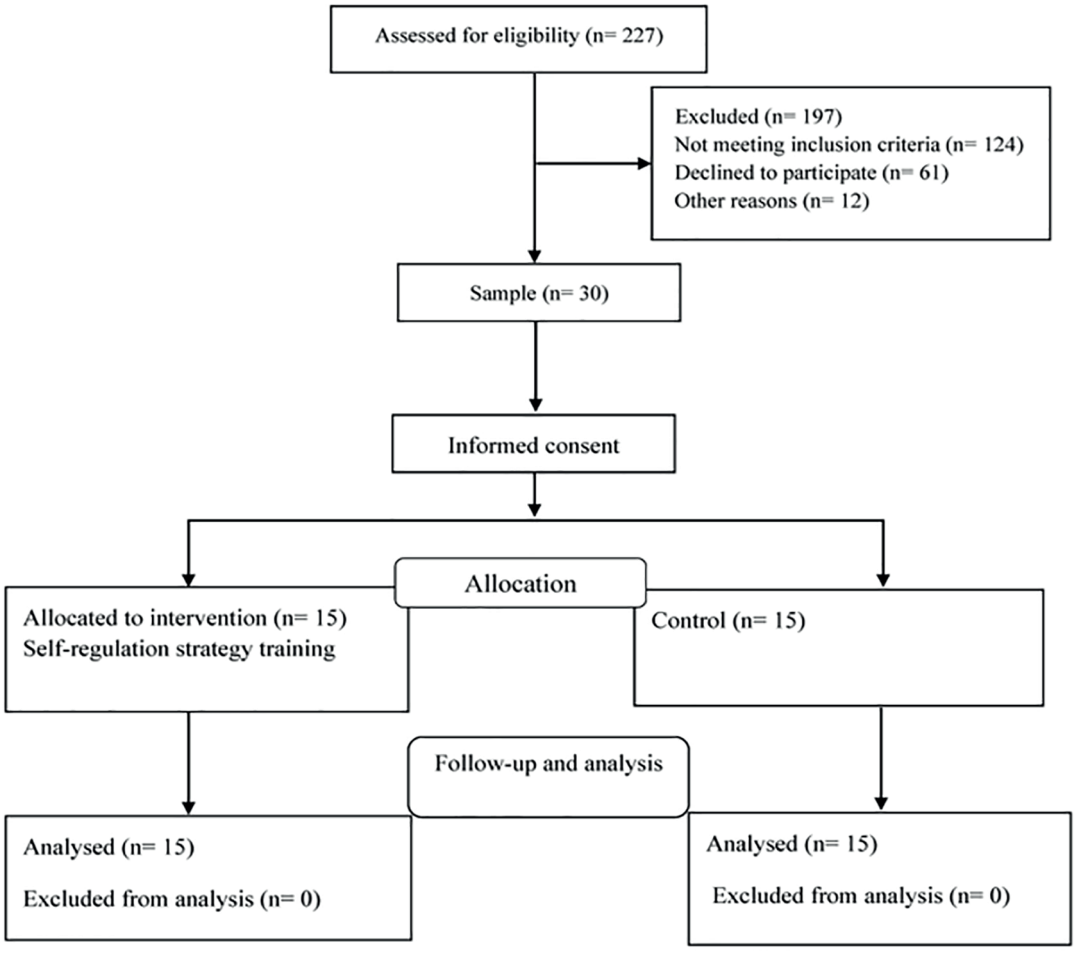

Figure 1: The figure shows the CONSORT flow diagram.

2.5. Procedure

Following the acquisition of necessary research permits, three boys' high schools in Dezful were randomly selected by the researcher from a pool of eligible schools. Academic records were subsequently examined to identify students who had obtained a semester Grade Point Average (GPA) below 14. These identified students were then contacted by the researcher and invited to attend an in-person orientation session at the office of the Educational Psychology Counseling Center. In an initial session, the objectives of the study were explained to potential participants, who were then invited to participate and complete a procrastination questionnaire. The experimental group subsequently engaged in a 10-week self-regulation strategy training program, consisting of weekly 90-minute sessions (24). These intervention sessions were facilitated by the first author. A detailed overview of the self-regulation strategy training content is provided in Table 1. The control group received no intervention during this period. A follow-up assessment was conducted 45 days after the post-intervention data collection.

2.6. Instruments

2.6.1. The Academic Flourishing Scale (AFS)

The Academic Flourishing Scale (AFS), developed by Diener and colleagues (25), is an eight-item instrument designed to measure academic flourishing using a 7-point Likert scale (1=strongly disagree; 7=strongly agree). Scores range from 8 to 56, with higher scores reflecting greater academic flourishing. Soleimani and colleagues (26) reported a high reliability coefficient (Cronbach's α=0.87) for the scale. The Persian adaptation of AFS demonstrated strong content validity, with a CVI of 0.91 and a CVR of 0.88, as determined by a panel of ten experts (26). In the present study, AFS exhibited a Cronbach's alpha of 0.84.

2.6.2. The Academic Optimism Questionnaire (AOQ)

The Academic Optimism Questionnaire (AOQ), a 28-item instrument developed by Tschannen-Moran and colleagues (27), assesses academic optimism using a 5-point Likert scale (1=strongly disagree; 5=strongly agree), with three items reverse-scored. Total scores, ranging from 28 to 140, indicate the level of academic optimism, with higher scores denoting greater optimism. The Persian adaptation of AOQ has demonstrated strong psychometric properties, exhibiting a high reliability coefficient (Cronbach's α=0.96) (28). Content validity was also established, with a CVR of 0.99 and a CVI of 0.97 reported for the Persian version (28). In the present study, AOQ demonstrated a Cronbach's alpha of 0.88.

Table 1: A summary of the self-regulation strategy training sessions

Sessions	Content
1	The initial session focused on introductions among group members, an overview of the program's structure, and an introduction to the concept of self-regulated learning. This session established the groundwork for the training by emphasizing the importance of self-regulated learning for academic achievement. The repetition and practice strategy was introduced as a core learning technique.
2	The elaboration strategy focuses on enhancing understanding by connecting new information to prior knowledge, using examples, or creating analogies. This session aimed to equip participants with tools to deepen their comprehension of new concepts.
3	This session focused on teaching strategies for organizing information, such as creating outlines, mind maps, or concept maps. These strategies help students structure information in a way that is easier to understand and remember.
4	Participants learned how to set goals, create study schedules, and break down large tasks into smaller, more manageable subtasks. This session emphasized the importance of proactive planning for effective learning.
5	This session focused on teaching students how to monitor their understanding of the material and identify areas where they need further clarification. Self-monitoring is a crucial skill for effective self-regulated learning.
6	Participants learned how to assess their own learning and progress. This session emphasized the importance of self-reflection and setting realistic goals for improvement.
7	This session focused on teaching time management techniques, such as creating study schedules and using time-management tools. Effective time management is essential for balancing academic and personal commitments.
8	This session covered strategies for creating a conducive learning environment and seeking help when needed. Participants learned how to minimize distractions and effectively collaborate with others.
9	This session focused on building self-efficacy and developing a growth mindset. Participants learned how to set challenging but achievable goals and believe in their ability to succeed.
10	The final session provided a comprehensive review of the training program, allowing participants to ask questions and share their experiences. The post-intervention assessment was then administered to evaluate the training's effectiveness.

2.7. Data Analysis

A repeated measures ANOVA was conducted using SPSS version 25 to analyze the differences in self-reported stress levels across three-time points (pre-intervention, post-intervention, and follow-up). Significant main effects were further analyzed using Bonferroni-corrected post hoc comparisons to determine specific differences between time points.

3. Results

The study participants were 30 male high school students who exhibited symptoms of academic procrastination. The participants in the control group had a mean age of 16.85 years (SD=2.39), while the experimental group had a mean age of 17.64 years (SD=1.88). Mean and standard deviation values for academic flourishing and academic optimism across the pre-test, post-test, and follow-up assessments for both the self-regulated learning strategy intervention group and the control group are presented in Table 2. For academic flourishing, both groups had similar mean scores at the pre-test (Experimental: M=21.01, SD=7.72; Control: M=21.13, SD=7.32). However, at the post-test, the experimental group showed a significant increase (M=34.40, SD=8.09) compared with the control group (M=20.93, SD=7.12). This trend persisted at follow-up, with the experimental group maintaining significantly higher scores (M=32.53, SD=7.22) than the control group (M=21.89, SD=7.64). Similarly, for academic optimism, both groups had comparable mean scores at the pre-test (Experimental: M=68.87, SD=13.88; Control: M=68.80, SD=13.59). At the post-test, the experimental group exhibited a significant increase (M=91.47, SD=15.21) compared with the control group (M=67.80, SD=12.82). This difference was maintained at follow-up, with the experimental group continuing to have significantly higher scores (M=89.48, SD=15.37) than the control group (M=66.87, SD=14.54). Overall, the results suggested that the self-regulation strategy training intervention was effective in significantly improving both academic flourishing and academic optimism among students with procrastination tendencies

Repeated measures ANOVA revealed significant main effects of time for both academic flourishing (P<0.001) and academic optimism (P<0.001), indicating significant improvement in both constructs across all participants over the assessment period. Furthermore, significant time-by-group interaction effects were observed for both academic flourishing (P<0.001) and academic optimism (P<0.001), demonstrating that the rate of change differed significantly between the experimental and control groups. A significant main effect of group was also found for academic flourishing (P=0.006), suggesting that the experimental group exhibited higher levels of academic flourishing compared with the control group, even at baseline. Similarly, a significant group effect for academic optimism (P<0.001) indicated that the experimental group, which received the self-regulation strategy training, demonstrated significantly greater academic optimism than the control group, after controlling for baseline differences. These results provided strong evidence for the effectiveness of self-regulation strategy training in enhancing both academic flourishing and optimism among students prone to procrastination.

Bonferroni post hoc comparisons revealed that, within the experimental group, academic flourishing scores demonstrated significant increases from pre-test to both post-test and follow-up assessments (P<0.001). Conversely, no significant changes in academic flourishing were observed within the control group across the three time points.

Table 2: Means and standard deviations of academic flourishing and academic optimism in the groups

Variables	Phases	Experimental group	Control group	P (between group)
		Mean±SD	Mean±SD	
Academic flourishing	Pre-test	21.01±7.72	21.13±7.32	0.966
	Post-test	34.40±8.09	20.93±7.12	0.001
	Follow-up	32.53±7.22	21.89±7.64	0.001
	P (within group)	0.001	0.940	-
Academic optimism	Pre-test	68.87±13.88	68.80±13.59	0.898
	Post-test	91.47±15.21	67.80±12.82	0.001
	Follow-up	89.48±15.37	66.87±14.54	0.001
	P (within group)	0.001	0.837	-

SD: Standard Deviation

Table 3: Bonferroni post-hoc comparisons for experimental and control groups at pre-test, post-test, and follow-up

Variables	Phases		Experimental group			Control group		
			Mean difference	SE	P	Mean difference	SE	P
Academic flourishing	Post-test	Pre-test	13.36	2.89	0.001	0.20	2.64	0.940
	Follow-up	Pre-test	11.63	2.73	0.001	0.76	2.73	0.783
	Follow-up	Post-test	2.26	2.80	0.531	0.96	2.70	0.725
Academic optimism	Posttest	Pre-test	23.86	5.31	0.001	1.00	4.82	0.837
	Follow-up	Pre-test	21.73	5.35	0.001	1.93	5.14	0.710
	Follow-up	Post-test	2.86	5.58	0.394	0.93	5.01	0.854

SE: Standard error

No significant differences in academic flourishing were found between the post-test and follow-up assessments for either group. Parallel findings emerged for academic optimism: the experimental group exhibited significant increases in scores from pre-test to both post-test and follow-up ($P<0.001$), while the control group showed no significant change across the three time points (Table 3).

4. Discussion

This study investigated the efficacy of self-regulation strategy training in promoting academic flourishing and optimism among students with procrastination tendencies. The findings of this study demonstrated that self-regulated learning strategy training significantly improved academic flourishing and optimism among male high school students with academic procrastination tendencies. These results aligned with previous research (21, 22). Self-regulation empowers students to enhance their learning and study skills, employ effective learning strategies to improve academic performance, and engage in self-assessment of their academic progress (19). In essence, self-regulation can be considered a study skill that, when taught, can foster higher levels of optimism and academic flourishing. Self-regulation training provides the necessary cognitive tools to enhance and increase students' optimism and academic flourishing (21).

Many students attribute their learning difficulties to personal incompetence, which can limit their motivation and subsequent efforts (2). The issue lies in students' inability to effectively use their capabilities. However, through self-regulation training, which encompasses time management, goal setting, emotion regulation, and self-evaluation, students develop a sense of self-efficacy and take responsibility for their actions and environment (20). They actively strive to create optimal learning conditions to achieve their goals, transforming failure attributions into success attributions (17).

Moreover, evidence suggested that self-regulated learning training can enhance students' self-esteem (29), a known predictor of both academic optimism and flourishing. Students with lower self-esteem are more susceptible to withdrawal and depression; therefore, self-regulation training indirectly empowers them to manage their thoughts, feelings, and behaviors through the application of key learning skills such as time management, effective study strategies, and emotion regulation (30). Through self-monitoring and self-evaluation, students can reflect upon and refine their study habits, cultivate a more positive outlook, and develop a stronger sense of purpose (22). As Oriol-Granado and colleagues (31) suggested, students who find enjoyment and mastery in their learning activities are more likely to expect positive outcomes, experiencing greater positive emotions and fewer negative ones. Consequently, academic success and progress contribute to increased student satisfaction, optimism, and flourishing. Furthermore, students characterized by academic optimism and flourishing are better equipped to engage in academic pursuits and achieve educational outcomes. When considering academic optimism and flourishing in relation to students, a sense of school belonging becomes even more critical, as it provides a supportive and inclusive environment that fosters positive emotions and motivations (30).

4.1. Limitation

The generalization of the findings to other age groups and genders should be approached with caution, as the sample was limited to male adolescents with procrastination tendencies in Dezful, Iran.

To ensure the sustainability of the training, it is recommended that participants engage in monthly or bi-weekly reviews to reinforce the learned concepts. However, considering the age of the participants, it is likely that many adolescents did not consistently engage in these review activities. Consequently, the effectiveness of the training was primarily observed during the sessions and immediately following them. Over time, due to various factors, the impact of the training may have diminished.

5. Conclusions

This study showed that self-regulation strategy training significantly boosts academic flourishing and optimism in procrastinating students, with notable differences between experimental and control groups. By teaching skills like goal-setting and time management, the training enhances both academic performance and psychological well-being. The positive outcomes indicated that such interventions can cultivate resilience, motivation, and persistence. These findings supported the value of self-regulation in education, suggesting future research should focus on long-term effects and the optimal conditions for these strategies.

Acknowledgement

The authors would like to appreciate the collaboration of all participants in the present study.

Authors' Contribution

Keyumars Keyvan: Substantial contributions to the conception and design of the work, and the acquisition, analysis, and interpretation of data for the work, reviewing the work critically for important intellectual content. Fatemeh Sadat Marashian: Substantial contributions to the conception and design of the work, and the acquisition, analysis, and interpretation of data for the work, reviewing the work critically for important intellectual content. Zahra Dasht Bozorgi: Substantial contributions to the conception of the work, drafting the work and reviewing it critically for important intellectual content. All authors have read and approved the final manuscript and agree to be accountable for all aspects of the work, such as the questions related to the accuracy or integrity of any part of the work.

Conflict of Interest: None declared.

Funding: None.

Ethical Approval

This study was conducted in accordance with ethical guidelines and was approved by the Ethical Committee of Islamic Azad University- Ahvaz Branch, Ahvaz, Iran with the code of IR.IAU. AHVAZ.REC.1402.041. Also, written informed consent was obtained from the participants.

References

1. Karimi Moonaghi H, Baloochi Beydokhti T. Academic procrastination and its characteristics: A Narrative Review. Future of Medical Education Journal. 2017;7(2):43-50. doi: 10.22038/fmej.2017.9049. Persian.
2. Amani M, Arbabi MM. The Mediating Role of Academic Self-Regulation in the Relationship between Parenting Dimensions and Academic Procrastination. Int J School Health. 2020;7(2):21-29. doi: 10.30476/intjsh.2020.84983.1050.
3. González-Brignardello MP, Sánchez-Elvira Paniagua A, López-González MÁ. Academic Procrastination in Children and Adolescents: A Scoping Review. Children (Basel). 2023;10(6):1016. doi: 10.3390/children10061016. PubMed PMID: 37371248; PubMed Central PMCID: PMC10297372.
4. Salguero-Pazos MR, Reyes-de-Cózar S. Interventions to reduce academic procrastination: A systematic review. International Journal of Educational Research. 2023;121:102228. doi: 10.1016/j.ijer.2023.102228.
5. Johansson F, Rozental A, Edlund K, Côté P, Sundberg T, Onell C, et al. Associations Between Procrastination and Subsequent Health Outcomes Among University Students in Sweden. JAMA Netw Open. 2023;6(1):e2249346. doi: 10.1001/jamanetworkopen.2022.49346. PubMed PMID: 36598789; PubMed Central PMCID: PMC9857662.
6. Jochmann A, Gusy B, Lesener T, Wolter C. Procrastination, depression and anxiety symptoms in university students: a three-wave longitudinal study on the mediating role of perceived stress. BMC Psychol. 2024;12(1):276. doi: 10.1186/s40359-024-01761-2. PubMed PMID: 38755730; PubMed Central PMCID: PMC11100206.
7. Zhianifard A, Sohrabi Z, Barry A, Norouzi A, Mirzaee Z, Zabihi Zazoly A, et al. Impact of Virtual Instruction on Cognitive and Metacognitive

Strategies in Alleviating Academic Procrastination among Medical Students. Health Educ Health Promot. 2024;12(1):153-158. doi: 10.58209/hehp.12.1.153.
8. Touloupis T, Campbell M. The role of academic context-related factors and problematic social media use in academic procrastination: A cross-sectional study of students in elementary, secondary, and tertiary education. Social Psychology of Education. 2024;27(1):175-214. doi: 10.1007/s11218-023-09817-8.
9. Davari Dowlatabadi M, Mousavi S. Effectiveness of Goal-Setting Training on the Psychological Flourishing of Students. Int J School Health. 2021;8(2):110-117. doi: 10.30476/intjsh.2021.90531.1134.
10. Hirshberg MJ, Colaianne BA, Greenberg MT, Inkelas KK, Davidson RJ, Germano D, et al. Can the Academic and Experiential Study of Flourishing Improve Flourishing in College Students? A Multi-University Study. Mindfulness (N Y). 2022;13(9):2243-2256. doi: 10.1007/s12671-022-01952-1. PubMed PMID: 36405632; PubMed Central PMCID: PMC9667904.
11. Chaves C. Wellbeing and Flourishing. In: Kern ML, Wehmeyer ML, editors. The Palgrave Handbook of Positive Education. Cham: Springer International Publishing; 2021. p. 273-95.
12. Shirmohammadi Z, Eftekhar Saadi Z, Talebzadeh Shoushtari M. The Association between Self-Compassion and Academic Well-Being with the Mediating Role of Perceived Academic Stress and Academic Optimism in Female Students. Int J School Health. 2021;8(2):101-109. doi: 10.30476/intjsh.2021.90784.1136.
13. Li F, Mohammaddokht F, Hosseini HM, Fathi J. Reflective teaching and academic optimism as correlates of work engagement among university instructors. Heliyon. 2023;9(2):e13735. doi: 10.1016/j.heliyon.2023.e13735. PubMed PMID: 36865456; PubMed Central PMCID: PMC9971167.
14. Ofem UJ, Idika D, Otu B, Victor Ovat S, Arikpo MI, Anakwue AL, et al. Academic optimism, capital indicators as predictors of cognitive, affective, and psychomotor learning outcome among students in secondary school. Hierarchical regression approach (HRA). Heliyon. 2024;10(5):e30773. doi: 10.1016/j.heliyon.2024.e30773. PubMed PMID: 38765071; PubMed Central PMCID: PMC11101857.
15. Lotfi S, Ashouri H. The relationship between academic optimism and academic engagement with the mediating role of goal orientation and academic identity of girls' secondary school students. Management and Educational Perspective. 2023;5(1):92-110. doi: 10.22034/jmep.2022.345433.1122. Persian.
16. Amrollahi Beyooki A, Sepahmansour M, Ghanbaipanah A. The Structural Model of Students' Academic Motivation Based on Teacher-Student Relationship, Attachment to School, and Metacognitive Awareness by the Mediator of Academic Optimism among High-School Students. Int J School Health. 2020;7(4):3-11. doi: 10.30476/intjsh.2020.86227.1078.
17. Brenner CA. Self-regulated learning, self-determination theory and teacher candidates' development of competency-based teaching practices. Smart Learning Environments. 2022;9(1):3. doi: 10.1186/s40561-021-00184-5.
18. Vosniadou S, Bodner E, Stephenson H, Jeffries D, Lawson MJ, Darmawan IN, et al. The promotion of self-regulated learning in the classroom: a theoretical framework and an observation study. Metacognition and Learning. 2024;19(1):381-419. doi: 10.1007/s11409-024-09374-1.
19. Boekaerts M. Self-regulated learning: A new concept embraced by researchers, policy makers, educators, teachers, and students. Learning and Instruction. 1997;7(2):161-186. doi: 10.1016/S0959-4752(96)00015-1.
20. Eilam B, Aharon I. Students' planning in the process of self-regulated learning. Contemporary Educational Psychology. 2003;28(3):304-334. doi: 10.1016/S0361-476X(02)00042-5.
21. Hossaini Khah K, Nikdel F, Nasser N. The effectiveness of training self-regulation strategies on processing efficiency and working memory function of high school girl students. Research in Cognitive and Behavioral Sciences. 2018;8(2):33-48. doi: 10.22108/cbs.2020.111297.1206. Persian.
22. Bargi I, Hayealalm v. The effectiveness of teaching self-regulated learning strategies on academic morale and academic self-disability students. Journal of Modern Psychological Researches. 2023;18(71):51-58. doi: 10.22034/jmpr.2023.55063.5395. Persian.
23. Gharizadeh T, Mohammadyfar M, Fathi Azar E. Comparison of the Effectiveness of Spiritual Care and Choice Theory on Academic Vitality and Prosperity of First High School Students. Journal of Modern Psychological Researches. 2024;19(73):227-236. doi: 10.22034/jmpr.2023.56781.5614. Persian.
24. Pintrich PR. Understanding self-regulated learning. New Directions for Teaching and Learning. 1995;1995(63):3-12. doi: 10.1002/tl.37219956304.

25. Diener E, Wirtz D, Tov W, Kim-Prieto C, Choi D-w, Oishi S, et al. New Well-being Measures: Short Scales to Assess Flourishing and Positive and Negative Feelings. Social Indicators Research. 2010;97(2):143-156. doi: 10.1007/s11205-009-9493-y.
26. Soleimani S, Rezaei AM, Kianersi F, Hojabrian H, Khalili Paji K. Developement and validation of flourishing questionnaire based on seligman's model among Iranian university students. J Research Health. 2015;5(1):3-12.
27. Tschannen-Moran M, Bankole RA, Mitchell RM, Moore DM. Student Academic Optimism: a confirmatory factor analysis. Journal of Educational Administration. 2013;51(2):150-75. doi: 10.1108/09578231311304689.
28. Ghadampour E, Amirian L, Khalili Geshnegani Z, Naghi Biranvand F. Evaluate the psychometric properties of Tschannen-Moran et al Academic Optimism students. Quarterly of Educational Measurement. 2017;8(27):45-64. doi: 10.22054/jem.2017.17284.1444. Persian.
29. Theobald M. Self-regulated learning training programs enhance university students' academic performance, self-regulated learning strategies, and motivation: A meta-analysis. Contemporary Educational Psychology. 2021;66:101976. doi: 10.1016/j.cedpsych.2021.101976.
30. Lavasani MG, Mirhosseini FS, Hejazi E, Davoodi M. The Effect of Self-regulation Learning Strategies Training on the Academic Motivation and Self-efficacy. Procedia - Social and Behavioral Sciences. 2011;29:627-632. doi: 10.1016/j.sbspro.2011.11.285.
31. Oriol-Granado X, Mendoza-Lira M, Covarrubias-Apablaza C-G, Molina-López V-M. Positive Emotions, Autonomy Support and Academic Performance of University Students: The Mediating Role of Academic Engagement and Self-efficacy. Revista de Psicodidáctica (English ed). 2017;22(1):45-53. doi: 10.1387/RevPsicodidact.14280.