

The Effect of the HOPS Educational Program on Academic Self-Regulation of Procrastinating Students

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ABSTRACT

Objective: The purpose of this study was to examine the effect of the HOPS (Homework, Organization and Planning Skills) educational program on academic self-regulation of procrastinating students.

Method: The method of the current research was quasi-experimental including pretest and posttest designs with a control group. All female students of secondary education of Ardabil in the academic year of 2025-2026 comprised the population of this research. 40 procrastinating students were recruited through randomized cluster sampling which were randomly assigned to experimental (n=20) and control (n=20) groups. The participants of the experimental group, received 12 sessions of the HOPS educational program while the control group stuck to their normal routine. The Bufford's Academic Self-Regulation Questionnaire (1995) and Solomon and Ruth Bloom's Academic Procrastination Scale (1984) were used to collect data. The data were analyzed using statistical method of Covariance in SPSS software.

Results: The results demonstrated that the academic self-regulation of procrastinating students in posttests of the experimental group significantly outperformed the control group, confirming the effect of the HOPS educational program on academic self-regulation of procrastinating students.

Conclusions: It can be concluded that the HOPS educational program is indeed effective on academic self-regulation of procrastinating students; therefore, applying this program in case of increasing student's academic self-regulation in schools is suggested.

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Introduction

The growth and flourishing of any society are fundamentally contingent upon the quality and effectiveness of its educational system. In this regard, the education and development of students constitute one of the most vital assets within the educational system (Kazemoladi et al., 2024). Given the crucial role of education in cultivating an efficient and capable workforce, examining the behavioral and personality dimensions that contribute to poor academic performance is of significant importance. Among the factors leading to weak academic achievement is academic procrastination (Habibi-Kalibar et al., 2018). Academic procrastination refers to students' persistent tendency to delay or postpone their academic tasks (Rothblum et al., 1986; as cited in Sheykholeslami et al., 2014). According to previous research on the tendency toward academic procrastination, several contributing factors have been identified. These include poor time-management skills, individual characteristics such as difficulty concentrating, an external locus of control, weak problem-solving abilities, unrealistic expectations, and a lack of self-regulation. Studies have shown a strong correlation between academic procrastination and deficiencies in self-regulation (Alexander & Onwuegbuzie, 2007). Vohs and Baumeister (2004) also conceptualize academic procrastination as a form of self-regulatory failure. In essence, procrastination represents a purposeful delay in completing tasks and is viewed as a manifestation of impaired self-regulation (Yang & Zhang, 2023).

Moreover, deficits in self-regulatory skills can lead to communication difficulties and impaired social adjustment in students (Power et al., 2006). Molinan et al. (2015) assert that self-regulation encompasses an individual's ability to monitor, evaluate, adjust, and actively control their own behavior in pursuit of personal goals that align with socially acceptable standards. More broadly, self-regulation can be understood as the psychological effort an individual invests in managing internal states to achieve higher-order goals (Bohra & Sujun, 2015). Teaching organizational and self-regulatory skills is a fundamental prerequisite for students' success (Langberg et al., 2008). These skills enable students to achieve academic success and to carry that success forward into their professional lives (Frie, 2005). The application of self-regulatory abilities within the educational context is referred to as 'academic self-regulation'. Academic self-regulation represents an important research domain that is increasingly regarded as a key focus and one of the essential foundations of education (Zalazar Jim & Medrano, 2020). One of the primary reasons for academic failure is students' inability to manage their time, organize tasks, and complete assignments, which is linked to poor self-regulation (Stalmach et al., 2023). In essence, a widespread issue observed among students, and a significant concern for educational systems, is the students' incapacity to direct their own learning and confront academic challenges and difficulties. This is despite the fact that a key objective of the curriculum is to foster the ability for academic self-regulation in carrying out learning activities (Sheykholeslami, 2020). The structure

of academic self-regulation in school is the behaviors related to learning and improvement (Balali et al., 2023). Students with weaknesses in academic self-regulation, in addition to academic difficulties, typically exhibit deficits in executive functions and cognitive control processes. These deficits can impair their socio-emotional behaviors at school as well as their learning abilities.

Recent research findings indicate that weaknesses in executive function components, whether in direct assessments or teacher reports, can lead to difficulties in reading comprehension, task organization, and school-related behavioral problems. This underscores the critical role of cognitive and metacognitive processes in the persistence of academic failure (Pfiffner et al., 2024). The existing research literature suggests an inverse relationship between the application of cognitive-metacognitive strategies, as components of academic self-regulation, and academic procrastination (Walters, 2003; Wilson, 2002). Cognitive strategies are actions we employ to prepare new information for integration and connection with previously learned knowledge, and for its storage in long-term memory. These strategies include: rehearsal or review, elaboration, and organization. Cognitive strategies are, in essence, methods of learning. In contrast, metacognitive strategies serve as measures for monitoring, controlling, and guiding cognitive strategies. Key metacognitive strategies can be categorized into three groups: planning, monitoring and evaluation, and regulation (Seif, 2025).

Academic self-regulation and the use of cognitive and metacognitive strategies are closely interrelated and can significantly influence student academic success. Cognitive and metacognitive learning strategies assist students in achieving higher levels of self-regulation in their learning process (Aizpurua, 2017). This issue holds great importance, and education professionals have long emphasized the role of cognitive and metacognitive strategies in students' self-regulation. The application of these strategies in education and learning is grounded in the constructivist approach, which stresses the active role of students in the process of study and instruction. When a student takes an active role in studying and organizing their curriculum, they construct their own knowledge; through the attainment of academic self-regulation, this process fosters a sense of self-esteem in the student (Schunk, 2020). Students with higher levels of academic self-regulation are skilled in cognitive strategies and understand how to manage their schedules and assignments to achieve personal goals.

Executive functions are a set of abilities that are necessary to implement and control efficient, purposeful and forward-looking behavior in an environment with continuous changes (Sheykholeslami et al., 2023). Furthermore, by relying on their metacognitive knowledge, students are adept at planning and maintaining self-regulation throughout various stages of the learning process (Saeedipour, 2023). Students who possess academic self-regulation are capable of evaluating the effects of their own behaviors and organizing learning situations in a way that maximizes the efficiency of their efforts. These students not only achieve a strong understanding

of course material but also become self-motivated, responsible, active, and interested in their academic pursuits, which can lead to significant educational progress. Students with low academic self-regulation typically pursue education due to external pressures such as parents, teachers, and societal demands whereas students with high self-regulation choose to learn because they perceive it as personally important, and they find the process of study enjoyable (Golestaneh & Behzadi, 2019). Recent research findings emphasize the pivotal role of academic self-regulation in enhancing students' academic progress and success, and have explored the effectiveness of interventions aimed at increasing this skill.

One practical intervention for improving students' academic self-regulation is the HOPS (Homework, Organization, and Planning Skills) educational program. This type of intervention is designed for use in both therapeutic and school settings and has been implemented using individual and small-group coaching models. The three primary skill areas addressed in this educational program are: organizing school supplies, recording and managing assignments, and planning and time management. In the area of organization, the HOPS program teaches students a specific system for organizing school materials, including their school bags, subject folders, and lockers. Additionally, students learn how to use a consistent system for transferring materials and assignments between home and school. In the area of recording and managing assignments, students are instructed to accurately, systematically, and consistently log their homework, projects, and tests in their planner. In the area of planning and time management, students are taught to utilize time planning at home and school, and to manage their time for longer assignments by breaking them down into smaller steps to prevent distractions. The HOPS educational program, as a school-based intervention, can bridge the gap between research and practice (Langberg et al., 2017). You're right to highlight the HOPS program's focus on organization! It's indeed one of its core components. The program also aims to positively influence and enhance the roles of both teachers and parents (Merrill et al., 2017). By empowering students, the HOPS program helps them develop a greater commitment to their responsibilities, making them less likely to drop out of their academic environment. This empowerment shapes their behaviors towards achieving educational goals (Lorente-Alonso et al., 2024). Habbs (2025), in their study titled on the effectiveness of the HOPS intervention on high school students concluded that this intervention can create a significant difference in students' organizational skills, including components of academic self-regulation. Zhao et al. (2024) found that for students with low academic progress, cognitive empowerment can serve as an effective tool for improving academic and psychological skills. Strengthening cognitive abilities, particularly in the areas of self-regulation and self-efficacy, can lead to students feeling more in control of their learning process, consequently improving their academic performance. Reginald (2023), in a study on students' academic self-regulation, concluded that training in self-regulation and task organization skills can provide the foundation for academic progress in students by employing appropriate taught strategies.

Ambad et al. (2021) found that the outcomes of student empowerment include emotional reactions, attitudinal responses, and self-regulatory behaviors. In other words, student's empowerment acts as a motivational factor, capable of eliciting emotional responses and directing them toward positive performance in the educational environment. Batool et al. (2019) demonstrated that cognitive empowerment programs enhance students' self-regulation skills and increase their academic motivation. Also, Breaux et al. (2019), in their study concluded that the HOPS intervention impacts accurate task recording and time management skills as unique predictors of improvement in task and organization problems (including components of academic self-regulation). Fabiano (2017) in their study demonstrated that the HOPS intervention can reduce more severe cognitive deficits compared to similar interventions. Moreover, Evans et al. (2011), in a study on the effectiveness of an after-school intervention for adolescents with attention-deficit/hyperactivity disorder concluded that this type of intervention impacts more tangible outcomes, such as academic performance, self and assignment organization, homework completion rates, and grade point average.

The HOPS educational program is built on a foundation of theoretical and research-based principles. The first theoretical foundation of this program is behavioral learning theories, which emphasize the role of reinforcement, consequences, and behavior shaping. The second theoretical foundation is the theory of deficits in behavioral inhibition. The third theoretical foundation is the academic skill-building approach, which focuses on directly teaching the skills needed for academic success and has been shown to be effective for students with deficits in time management skills based on numerous studies. This educational program, in addition to targeting assignment organization, time management, and planning skills, typically encompasses other areas such as behavioral problems, social skills, and related academic skills like study skills (Langberg et al., 2017). In fact, students need a set of skills and knowledge that enable them to have greater control over their lives and be considered competent individuals (Sergis et al., 2018; Schunk, 2020). Understanding the effects of using innovative methods such as the HOPS educational program in enhancing students' academic self-regulation appears essential. Therefore, the present study was conducted with the aim of investigating the impact of the HOPS educational program on the academic self-regulation of procrastinating students.

Materials and Methods

Design

The research adopted a quasi-experimental design including the pretest and posttest with a control group.

Participants

All female students of senior high schools of Ardabil in the academic year of 2025-2026 comprised the population of this research. Using a cluster random sampling method, a number of students were selected and asked to complete the Academic Procrastination Scale. From among, 40 students who obtained high scores on the Academic Procrastination Scale were identified and selected as the final sample. These participants were then randomly assigned to either the experimental group (n=20) or the control group (n=20). The sample size was determined based on the guideline reported by Gall et al. (2014), which recommends a minimum of 15 participants per group in experimental and semi-experimental studies. However, to account for potential attrition and to enhance the generalizability of the findings, 20 participants were allocated to each group in the present study.

Instruments

The Bufford's Academic Self-Regulation Questionnaire (1995) and Solomon and Ruth Bloom's Academic Procrastination Scale (1984) were used to collect data.

Bufford's Academic Self-Regulation Questionnaire (1995): This questionnaire was developed by Bouffard (1995) to measure academic self-regulation in students based on Bandura's social cognitive theory. It consists of 14 items and 2 subscales, scored on a 5-point Likert scale from "strongly disagree=1" to "strongly agree=5." The first subscale, cognitive strategies, includes 7 items (items 3, 5, 8, 9, 10, 12, 13), and the second subscale, metacognitive strategies, includes 7 items (items 1, 2, 4, 6, 7, 11, 14). The overall reliability coefficient of the questionnaire, based on Cronbach's alpha, is .71. The reliability of the cognitive strategies subscale is reported as .70, and the metacognitive strategies subscale as .68 (Bouffard et al., 1995). The reliability of this questionnaire in a study by Talebzadeh et al. (2012) using Cronbach's alpha was obtained to be .76. Factor analysis results indicated that the correlation coefficients between items were appropriate, the factor loadings were at an acceptable level, and its validity was satisfactory. Additionally, the reliability of this questionnaire in the study by Sheykholeslami et al. (2025) using Cronbach's alpha method was .82.

Solomon and Ruth Bloom's Academic Procrastination Scale (1984): This scale was developed by Solomon and Rothblum (1984) to measure academic procrastination in students. It consists of 27 items and 3 subscales, scored on a 4-point Likert scale from "rarely=1" to "always=4." The first subscale, preparing for exams, includes 6 items (items 1 to 6); the second subscale, preparing for assignments, includes 9 items (items 9 to 17); and the third subscale, preparing for term paper writing, includes 6 items (items 20 to 25). In this scale, items 2, 4, 6, 11, 15, 16, 21, 23, and 25 are reversely-scored, and items 7, 8, 18, 19, 26, and 27 are not included in the total score because they do not indicate academic procrastination. In Solomon and Rothblum's (1984) study, the validity of

this scale was reported to be .84 using internal consistency, and its reliability using Cronbach's alpha was .64 (Sheykholeslami, 2016).

Procedure

After obtaining the necessary permission, selecting the sample, and administering the pretest, the experimental group participants received 12 sessions of the HOPS educational program, while the control group participants continued their usual routine. Then, after completing the training sessions, the posttest was administered to both groups. The HOPS educational program consists of 12 sessions, including two sessions with parent involvement and training, with each session lasting between 20 to 75 minutes (Langberg et al., 2008, 2011, 2015, 2017). A summary of the HOPS educational program sessions is presented in the table below. The data were analyzed using statistical method of Covariance in SPSS software.

Table 1. Summary of HOPS Educational Program Sessions (Langberg et al., 2008, 2011, 2015, 2017).

Sessions	Topic	Sessions Content
1	Baseline Assessment & Basic System Training	Parent meetings 1 st , Establish and build rapport, Give a positive and enthusiastic presentation of HOPS, Assess student's current materials organization system and establish baseline performance, Develop a rewards menu. Complete second baseline assessment of student's materials organization system using the organizational skills checklist, Introduce the HOPS binder and book bag organization systems and the organizational skills checklist (teaching the student how his/her skills will be monitored), Introduce the HOPS binder and book bag organization systems and the organizational skills checklist (teaches the student how his/her skills will be monitored), If time, provide the student with the new binder materials and establish the new materials organization system.
2	Generalization of Organization & Assignment Management Practice	Continue to establish the student's materials organization system, Introduce teacher initials requirements, Introduce the HOPS rewards system and points system tracking sheet, Depending on motor needs, adaptations for writing on the forms may need to occur. Finish establishing the materials organization system, Explain the HOPS teacher initials and point system in greater detail if there was not time for this in session 2, Complete the teacher initials checklist and record points, Create visual reminders for student to get teacher initials or develop the specific teacher initials plan, Create visual reminders for student to get teacher.
3	Introduction to Time Management Concept, Transition to Planning & Planning Practice	Complete the organization skills checklist and record points, Complete the teacher initials checklist and record points, Create visual reminders for student to get teacher initials or develop the specific teacher initials plan, Prepare for parent meeting. Complete the organizational skills checklist and record points, Complete the teacher initials checklist and record points, Review the parent meeting, and Develop a specific plan for maintaining the materials organization system.

4	After-School Time Management & Advanced Planning Practice	Complete the organizational skills checklist and record points, Complete the teacher initials checklist and record points, Introduce the time management checklist test and quiz sections, Practice test and quiz recording and planning, Solve any problems, Complete the organizational skills checklist and record points, Complete the teacher initials checklist and record points, Complete the time management checklist test and quiz sections and record points, Introduce the long-term projects section of the time management checklist, Identify and solve any problems.
5	The Synergy of Organization and Planning in the HOPS Intervention	Complete the organizational skills checklist and record points, Complete the teacher initials checklist and record points, Complete test, quiz, and projects sections of the time management checklist and record points, Introduce the time management checklist, evening schedule section.
6	Skill Acquisition and Progress Monitoring	Complete the organizational skills checklist and record points, Complete the teacher initials checklist and record points, Complete the entire time management checklist and record points, Review the evening schedule completed during session 5, and Complete a new evening schedule.
7	Introduction to Planning and Time Management	Complete the organizational skills checklist and record points, Complete the teacher initials checklist and record points, Complete the time management checklist and record points, Review and revise materials organization and teacher initial plans.
8	Project Planning Practice	Complete the organizational skills checklist and record points, Complete the teacher initials checklist and record points, Complete the time management checklist and record points, Introduce the self-management checklist, Begin to discuss creating a self-management plan.
9	Advanced Time Management and Scheduling	Complete the organizational skills checklist and record points, Complete the teacher initials checklist and record points, Complete the time management checklist and record points, Review the self-management checklist, Prepare for the parent meeting.
10	Skill Maintenance and Transfer	Complete the organizational skills checklist and record points, Complete the teacher initials checklist and record points, Complete the time management checklist and record points, Review the parent meeting, and Review the implementation of the self-management plan.
11	Skill Maintenance and Transfer	Complete the organizational skills checklist and record points, Complete the teacher initials checklist and record points, Complete the time management checklist and record points, Review student's progress with the HOPS intervention and discuss termination.
12	Conclusion and Follow-up	Celebrate student's progress with the intervention, Do not complete any of the HOPS checklists, Student will cash in all remaining HOPS points for rewards, Complete a fun activity, such as a board game or computer game.

Results

Descriptive statistics for the pre-test and post-test scores of academic procrastination and academic self-regulation, categorized by the experimental and control groups, are presented in Table 2. At the pre-test stage, both groups demonstrated comparable mean scores on both dependent variables, with no substantial initial differences. At the post-test stage, the experimental group showed marked increases in mean scores for both academic procrastination and academic self-regulation, whereas the control group exhibited nothing changes.

Table 2. Descriptive statistics for academic self-regulation in procrastinating students at pre-test and post-test

Variable	Group	Pre-Test M(SD)	Post-Test M(SD)
Academic Self-Regulation	Experimental	34.05(2.91)	42.10(4.70)
	Control	34.35(2.94)	33.80(3.49)

As observed in Table 2, the mean and standard deviation of academic self-regulation for procrastinating students in the experimental group in the pretest stage were 34.05 and 2.91, respectively, and in the posttest stage, 42.10 and 4.70. The mean and standard deviation of academic self-regulation for procrastinating students in the control group in the pretest stage were 34.35 and 2.94, and in the posttest stage, 33.80 and 3.49.

To test the hypothesis, analysis of covariance (ANCOVA) was used. Analysis of covariance is a statistical method employed to adjust for initial differences among participants by using pretest scores as covariates in the posttest scores. In ANCOVA, adherence to certain assumptions (such as normality of data distribution, homogeneity of regression slopes, and homogeneity of error variances) is required. In this study, these assumptions were first examined, and since they were met (normality of data distribution via Shapiro-Wilk test: $P < .01$; homogeneity of regression slopes: $P < .01$, $F = 2.50$; homogeneity of error variances: $P < .01$, $F = 1.39$), ANCOVA was used to compare the mean academic self-regulation scores of procrastinating students in the experimental and control groups in the posttest. The results are presented in the table below.

Table 3. Analysis of Covariance for Comparing the Mean Academic Self-Regulation Scores of Procrastinating Students in the Experimental and Control Groups

Source of Variation	SS	Df	MS	F	Sig	Effect size
Pre-test	180.37	1	180.37	14.18	0.001	0.28
Group	724.47	1	724.47	56.96	0.001	0.61
Error	470.63	37	12.72			

Note: As observed in Table 3 ($F = 56.96$, $P < 0.01$), after adjusting for pretest scores, the difference between the experimental and control groups in terms of the academic self-regulation variable is significant at the 0.01 alpha level; therefore, the research hypothesis regarding the impact of the HOPS educational program on the academic self-regulation of procrastinating students is confirmed.

Discussion

The present, and Evans et al, (2011). study was conducted with the aim of investigating the impact of the HOPS educational program on the academic self-regulation of procrastinating students. The research findings indicated that after adjusting for pretest scores, the difference between the experimental and control groups in the academic self-regulation variable was significant at the .01 alpha level; therefore, the research hypothesis regarding the impact of the HOPS educational program on the academic self-regulation of procrastinating students was confirmed. The findings of the present study in this regard align with the findings of Hobbs (2025), Zhao et al. (2024), Reginald (2023), Ambad (2021), Broux et al. (2019), Batool et al. (2019), Langberg et al. (2017), Langberg et al. (2015)

In explaining this finding, it can be stated that the HOPS educational program helps increase academic self-regulation among procrastinating students. The HOPS program enhances academic self-regulation skills in procrastinating students, thereby improving their academic performance, and procrastinating students receiving the HOPS program achieve higher grade point averages compared to other procrastinating students who do not receive it (Langberg et al., 2017). The HOPS educational program is based on executive function theory and encompasses a set of cognitive processes, including cognitive flexibility. This program, through exercises involving reinforcement of accurate recording of assignments and academic tasks, ensuring access to necessary materials and resources, designing a specific study and homework schedule, implementing this plan at home and adhering to time limits, final control and evaluation of individual performance accuracy, and using such a model, activates key components of self-regulation, namely self-monitoring, self-control, and persistence toward academic goals. Gradually, students shift from reliance on external supervision (parents or teachers) toward self-leadership, i.e., academic self-regulation in learning. In this regard, recent research findings emphasize the central role of academic self-regulation in explaining and reducing academic procrastination. The HOPS program, by providing cognitive and metacognitive strategies such as teaching organization of school materials, task classification, and prioritization, reduces cognitive load and improves focus and academic self-regulation. The use of checklists and organized folders facilitates access to information and enhances working memory efficiency, while metacognitive strategies like systematic review of task progress teach students how to plan, monitor, and evaluate their own learning. Breaking large projects into smaller steps and scheduling study time are examples of metacognitive skills that lead to self-monitoring and cognitive self-regulation.

Reported experimental research results indicate that the HOPS program, as an intervention aligned with the Response to Intervention model, by increasing organization skills from teachers' perspectives, improving homework completion and accuracy, and enhancing academic performance especially in at-risk students not only strengthens observable regulated behaviors but

also, through developing self-aware and metacognitive learning, provides the foundation for the sustainability of these skills (Langberg, 2015). This educational program impacts the increase in academic self-regulation of procrastinating students by utilizing cognitive, metacognitive strategies, and executive function-related training. By offering a structured framework and systematic training of key executive function skills, it has a significant effect on reducing academic procrastination through strengthening self-regulation, improving cognitive and metacognitive strategies, and increasing student self-efficacy. The program enables students to exert more active control over their academic path by transforming learning processes from scattered and unpredictable activities into organized and manageable ones, freeing them from the trap of procrastination. The findings suggest that the HOPS educational program is not only a skills-based intervention but a comprehensive cognitive-behavioral empowerment approach that leads to increased academic self-regulation in students.

Conclusion

Overall, the results of the present study showed that the HOPS educational program can increase academic self-regulation in procrastinating students. Therefore, based on the findings of the present study, it is recommended that empowerment courses, including in-service training sessions, be held to teach the theoretical foundations and stages of this educational program to school psychologists and counselors, so that they incorporate it into their work to enhance the academic self-regulation of procrastinating students.

Like all other studies, this study faced some limitations. One of the limitations pertains to its statistical population, which consisted only of female high school students in Ardabil city. Therefore, it is suggested that in the future, similar studies be conducted on both genders and students from various educational levels in different cities to achieve greater generalizability.

Author Contributions

All authors participated in the design, implementation, and writing of all parts of the present study.

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Ethical considerations

All ethical principles are considered in this article. The participants were informed about the purpose of the research and its implementation stages. They were also assured about the

confidentiality of their information and were free to leave the study whenever they wished, and if desired, the research results would be available to them. The authors have observed ethical principles in conducting and publishing this scientific research, and this is confirmed by all of them.

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Conflict of interest

There is no conflict of interest.



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