





Effectiveness of Self-Determination Training on Self-Handicapping and Academic Procrastination among Students

Farokhro. Jalili¹, Mozhgan. Arefi^{2*}, Amir. Ghamarani³, Gholamreza. Manshaei⁴

¹ Assistant Professor, Department of Psychology and Counseling, Farhangian University, Tehran, Iran

² Assistant Professor, Department of Psychology, Islamic Azad University, Isfahan Branch (Khorasgan), Isfahan, Iran

³ Assistant Professor, Department of Psychology, University of Isfahan, Isfahan, Iran

⁴ Associate Professor, Department of Psychology, Islamic Azad University, Isfahan Branch (Khorasgan), Isfahan, Iran

* Corresponding author email address: mozhgan.arefi@yahoo.com

Article Info

Article type:

Original Research

How to cite this article:

Jalili, F., Arefi, M., Ghamarani, A., & Manshaei, G. (2024). Effectiveness of Self-Determination Training on Self-Handicapping and Academic Procrastination among Students. *Journal of Adolescent and Youth Psychological Studies*, 5(9), 109-118. <http://dx.doi.org/10.61838/kman.jayps.5.9.13>



© 2024 the authors. Published by KMAN Publication Inc. (KMANPUB), Ontario, Canada. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

ABSTRACT

Objective: The present study was conducted to determine the effectiveness of self-determination training on self-handicapping and academic procrastination among students.

Methods and Materials: The present study is a quasi-experimental design with pre-test, post-test, and follow-up with a control group. The statistical population included all students studying at Farhangian University in Birjand at Imam Sajjad and Shahid Bahonar campuses in the academic year 2016-2017, totaling 1,950 individuals. The research sample included 40 students from Farhangian University who voluntarily enrolled and were randomly assigned to two groups of 20 each using a random numbers table. The experimental group participated in 12 sessions of 90 minutes each, one session per week over two months, undergoing an intervention program based on self-determination skills developed by the researchers based on Deci and Ryan's (1985) self-determination theory. The control group received no training during this period. The Jones and Rhodewalt (1982) Self-Handicapping Scale and the Solomon and Rothblum (1984) Academic Procrastination Scale were used to measure the variables. Data analysis was conducted using SPSS-23 software.

Findings: The results of multivariate covariance analysis indicated that self-determination skills training had a significant effect on reducing student self-handicapping ($F=104.88$) and academic procrastination ($F=34.74$) ($p<0.001$), and these results persisted in the follow-up phase.

Conclusion: Based on the findings, learning and applying self-determination skills by students can reduce self-handicapping and the occurrence of procrastination behaviors during their studies. Therefore, the results of this study have practical implications for psychologists and counselors at university counseling centers to utilize self-determination skills to reduce academic procrastination and self-handicapping among students.

Keywords: self-determination, self-handicapping, academic procrastination, students.

1. Introduction

Students of any country are considered its intellectual and spiritual assets (Abdollahi et al., 2022; Bulut et al., 2024; Parsakia et al., 2022), and in our society, they are of particular importance for two reasons: first, they are in the most capable and ready phase of their lives; second, among the youth, students are a selected group in terms of mental abilities and academic talents (Alizadeh Aghdam et al., 2022). Throughout their university life, students experience various psychological pressures that significantly impact their academic progress. One factor that reduces academic progress and ultimately leads to academic decline is academic procrastination (Ashraf et al., 2023; Samari Safa & Poordel, 2022). Research shows that academic procrastination is observed among students at all educational levels, from school to university. Generally, procrastination indicates an individual's lack of willingness and motivation to complete assigned tasks within a specified time frame (Özberk & TÜRK KurtÇA, 2022), and when it occurs in an academic environment, it is defined as academic procrastination (Suhadianto et al., 2021). According to Hamvai et al. (2023), academic procrastination means delaying academic tasks such as writing term papers, reading weekly assignments, or studying for mid-term and final exams (Hamvai et al., 2023). It also manifests in various forms, including habitually arriving late to class, disorganization, postponing academic tasks, avoiding tasks like presenting papers, missing classes, achieving below-standard grades, failing courses, and facing the threat of expulsion from university (González-Brignardello et al., 2023; Rahman et al., 2018). Major consequences of academic procrastination include anxiety and stress, lack of academic flourishing (Hesampour & Rezaei, 2023), decline in academic performance (Amjadian & Bahrami, 2023), and academic burnout (Podineh Ebrahimi et al., 2022).

Another factor contributing to academic decline among learners, particularly students, is self-handicapping (Afshari, 2023). This psychological construct describes behaviors aimed at creating obstacles to completing a difficult task and anticipating failure (Abdali & Moshtaghi, 2020). Self-handicapping involves actions or choices that increase the likelihood of failure and internalizing success, while protecting the individual from the negative consequences of failure (Abdollahi & Foroughi pordanjani, 2023). Berglas and Jones first introduced the concept of self-handicapping, describing it as planning obstacles to successful performance

that individuals create to maintain or enhance their self-esteem (Jia et al., 2021; Török et al., 2022). In another definition, self-handicapping is described as any action or choice that provides specific grounds for justifying poor performance (Chen et al., 2017). Self-handicapping can occur in any situation where an individual's abilities are threatened; schools and classrooms provide an appropriate context for such behavior (Chen et al., 2017; Coudevylle et al., 2020). Self-handicapping occurs in two forms: claimed and behavioral. Claimed self-handicapping refers to situations where individuals claim that certain factors, such as psychological pressure, fatigue, or test anxiety, incapacitate them, while behavioral self-handicapping refers to situations where individuals actively create obstacles that reduce their chances of success (Török et al., 2022; Zandieh & Jafariharandi, 2020). According to Torok et al. (2022), self-handicapping occurs when an individual's self-concept is threatened and they lack high confidence in their abilities (Török et al., 2022). Additionally, based on self-handicapping strategies, in an educational environment like a university, self-handicapping learners employ a set of strategies to be perceived as victims of circumstances rather than victims of incapability, resulting in academic failure (Ahmadian, 2019). Research has confirmed the relationship between self-handicapping and academic procrastination (Zandieh & Jafariharandi, 2020), test anxiety among students (Jia et al., 2021), and reduced mental and physical health (Barutçu Yıldırım & Demir, 2019).

Many factors influence learners' academic performance, and one such factor is self-determination (Firouz Jahantigh, 2022). Self-determination is defined as a set of behaviors and skills that originate from home and school environments (Zare et al., 2022) and enable individuals to make independent and autonomous decisions in life and take action to solve their own problems (Zhang et al., 2020). Self-determination theory is an approach related to individuals' motivation and social performance, emphasizing the role of basic psychological needs as intrinsic motivational resources and suggesting that supporting these needs facilitates individual performance and social adaptation (Gagné et al., 2022; Haukås et al., 2023; Hu et al., 2023). Self-determined behavior refers to voluntary actions that enable individuals to act as primary and important agents in their own lives, thereby maintaining and enhancing their quality of life (Shirzadi et al., 2021). According to self-determination theory, one of the key theories in the field of motivation, all individuals have three psychological needs: autonomy

(feeling of autonomy and self-endorsement), competence (feeling of competence and effectiveness), and relatedness (interest in establishing connections, liking, and interaction), which should be satisfied in the best possible way (Chiu, 2022). This comprehensive motivational theory examines fundamental issues such as personal growth, self-regulation, psychological needs, life goals and aspirations, well-being and energy, the relationship between culture and motivation, and the impact of the social environment on motivation, and it has many applications in education and learning (Norouzi et al., 2021). Various studies have shown that self-determination training and its skills may be a therapeutic method that can improve learners' daily social functions (Mansurnejad et al., 2019). A review of research indicates the effectiveness of self-determination skills training on academic self-concept and academic self-efficacy (Zare et al., 2022), basic psychological needs (Mansurnejad et al., 2019), academic hope (Najafi Khorramabad et al., 2022), academic motivation growth (Haukås et al., 2023), learning growth (Kam et al., 2022), and enhancing self-regulation (Hu et al., 2023).

Given the aforementioned explanations and considering the effective functions of self-determination skills training, it seems that one way to reduce the psychological problems related to students' education is to use this motivational approach. Additionally, considering the existing research gap and the lack of research aimed at determining the effectiveness of self-determination skills training on self-handicapping and academic procrastination among young people, the present study was conducted to examine the effectiveness of self-determination training on self-handicapping and academic procrastination among students. It seeks to answer the question of whether self-determination training can effectively reduce self-handicapping and academic procrastination. Naturally, the results of this research will have practical implications for educational psychologists and school counselors.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a quasi-experimental design with pre-test, post-test, and follow-up with a control group. The statistical population included all students studying at Farhangian University in Birjand, specifically at Imam Sajjad and Shahid Bahonar campuses, during the academic year 2016-2017, totaling 1,900 individuals. The research sample consisted of 40 students from Farhangian University

who voluntarily enrolled and were randomly assigned to experimental and control groups using a random numbers table. The research tools are introduced below. The inclusion criteria included being a student-teacher, having no behavioral problems, and possessing physical and psychological health, verified through interviews with the dormitory supervisor and the student. The exclusion criteria included having chronic illnesses, refusing to participate in sessions, and frequent absences from self-determination training sessions.

After obtaining permission from the management of Farhangian University campuses in South Khorasan Province, an announcement for participation in the training workshop was posted in the male and female campuses. Forty volunteer students from each campus were registered and randomly assigned to experimental and control groups. In the first session, a pre-test was administered to both groups, including the self-handicapping and academic procrastination questionnaires. Over one academic term, the self-determination training workshop was conducted in 12 weekly 90-minute sessions (except for the first and last sessions) for the experimental groups separately in the male and female campuses. At the end, the previous questionnaires were administered again (post-test), and three months later, to follow up, the questionnaires were re-administered. The questionnaires were completed anonymously using codes to ensure confidentiality and prevent errors due to social desirability.

2.2. Measures

2.2.1. Self-Handicapping

This questionnaire, initially developed by Jones and Rhodewalt (1982), consists of 23 items and three subscales: negative affect (9 items), excuse-making (7 items), and effort (7 items), designed on a 5-point Likert scale from strongly disagree to strongly agree (1 to 5). To obtain the self-handicapping score, the scores for each item are summed. The minimum score is 23 and the maximum is 115. In Amjedian and Bahrami's (2022) study, Cronbach's alpha coefficient for this questionnaire was 0.78, indicating suitable reliability (Amjedian & Bahrami, 2023). In Nik Andam Kermanshahi, Safaie Rad, Erfani, and Yarahmadi's (2021) study, the overall reliability of the scale using Cronbach's alpha was 0.96, indicating acceptable reliability (Nik Andam Kermanshahi et al., 2021). Additionally, in Seyed Salehi and Delavar's (2015) study, the content validity of this scale was confirmed by five experts and faculty

members. In the present study, the correlation coefficient obtained from the implementation of the self-handicapping scale with a 15-day interval showed that the factors, subscales, and overall self-handicapping score had high and significant correlations, ranging from 0.47 for the effort factor to 0.86 for the total score (Nik Andam Kermanshahi et al., 2021). The reliability of this scale using Cronbach's alpha was 0.74, indicating its desirable reliability.

2.2.2. Academic Procrastination

This questionnaire includes 27 items, designed by Solomon and Rothblum (1984) to measure academic procrastination in three domains: task preparation (items 9 to 17), exam preparation (items 1 to 6), and end-of-term paper preparation (items 20 to 25). Additionally, six items (7, 8, 18, 19, 26, 27) are included to assess two characteristics: feeling uncomfortable about procrastination and the desire to change the procrastination habit (Afshari, 2023). The creators confirmed the content validity of the tool and reported its reliability using Cronbach's alpha as 0.84. Zarkoeipour et al. (2022) reported the reliability of the scale using Cronbach's alpha as 0.85 in their study (Zarkouipour et al., 2022). The validity of the questionnaire in Jokar and Delavarpour's (2007) study was calculated using factor analysis, and the findings indicated the satisfactory validity of the questionnaire (Soleimani Rad et al., 2023). In this study, the reliability of the scale using Cronbach's alpha was 0.79, indicating its desirable reliability.

2.3. Intervention

2.3.1. Self-Determination Training

This intervention package was developed by the researchers, with the content of the sessions adapted from Deci and Ryan's (1985) self-determination theory (Kam et al., 2022; Mansurnejad et al., 2019; Najafi Khorramabad et al., 2022; Norouzi et al., 2021; Shirzadi et al., 2021; Yaghoob et al., 2021). After developing the package, the opinions of experts and specialists (eight experts in educational psychology and curriculum planning) regarding the relevance of the training sessions and components, the adequacy of the number of sessions, etc., were used to finalize the report. The content validity was assessed using Krippendorff's alpha, yielding a coefficient greater than 0.67, thus confirming the necessary validity for the intervention.

Session 1: The first session focuses on providing a detailed explanation of the research objectives, workshop rules, and the session outline. Participants are informed about the expectations and the structure of the training program. A pre-test is administered to assess the initial levels of self-handicapping and academic procrastination among the students.

Session 2: This session is dedicated to teaching decision-making skills. Participants are introduced to the definitions, stages, and components of decision-making. They learn about the different phases of making a decision and the factors that influence effective decision-making.

Session 3: The third session begins with a review of the previous session and an evaluation of the assigned tasks. The main focus of this session is problem-solving skills. Participants are taught the definition of problem-solving, the steps involved, and how to apply these steps effectively.

Session 4: Goal-setting skills are the focus of the fourth session. The session covers the definition of goals, characteristics of effective goals, and different types of goals based on time frames. Participants learn about the factors influencing goal setting, the importance of commitment to goals, and goal orientation towards achievement.

Session 5: This session is centered on self-regulation skills. Participants learn the definition, models, and dimensions of self-regulation. The session explains the cyclical model of self-regulation with examples, emphasizing the stages of self-regulation and their application in academic settings.

Session 6: In the sixth session, participants are introduced to the concept of locus of control. The session defines locus of control, its dimensions, and the relationship between attributions and expectations. The application of attribution theory in classroom settings is also discussed.

Session 7: This session focuses on communication and empathy skills. Participants are taught the Islamic approach to interpersonal relationships, factors affecting interpersonal relations, the definition of empathy, and ways to enhance communication and empathy.

Session 8: Self-efficacy is the main topic of the eighth session. Participants learn the definition of self-efficacy, factors influencing it, and its connection to competence and academic success. The session also covers how to nurture self-efficacy in students based on Bandura's self-efficacy theory.

Session 9: The ninth session is dedicated to self-actualization. Participants are introduced to the definition of self-actualization, the characteristics of self-actualized

individuals according to Rogers, and the process of achieving self-actualization.

Session 10: Internalization is the focus of this session. Participants learn the definition of internalization, types of motivation, the self-determination continuum, and factors influencing internalization. The session also examines how students with different levels of internalization reason.

Session 11: This session applies motivational theory in education. It discusses the characteristics of autonomy-supportive teachers, the role of assignments, how to handle assignments, feedback, rewards, educational opportunities, and fostering student interest and self-determination.

Session 12: The final session provides a summary of all the topics covered throughout the training program. Participants review the key concepts and skills learned. A post-test is administered to evaluate the effectiveness of the training in reducing self-handicapping and academic procrastination.

2.4. Data analysis

Data were analyzed using descriptive (mean and standard deviation) and inferential (covariance analysis) statistics in SPSS version 23 at a significance level of $p < 0.05$.

3. Findings and Results

Regarding the demographic information of the study, half of the students were female (50%) and the other half were male (50%), with an equal gender distribution in both the control and experimental groups ($p = 1.00$). The highest frequency (56.3%) was among students aged 22, and the lowest frequency (6.3%) was among students aged 23. Overall, the mean age of the participants was 21.67 years. Among the students studied, 42 (52.5%) were single and 38 (47.5%) were married. To examine the assumption of normal distribution of scores, the Shapiro-Wilk test results for the normality of the distribution of the dependent variables' scores were analyzed. The significance level for all dimensions of the dependent variables was greater than 0.05, indicating that the scores for each of these variables were normally distributed, thus confirming the assumption of normality.

Table 1

Descriptive Statistics for Control and Experimental Groups' Scores Before and After Intervention and Follow-Up

Group	Stage (Pre-Intervention, Post-Intervention, Follow-Up)	Control (M)	Control (SD)	Experimental (M)	Experimental (SD)
Self-Handicapping	Pre-Intervention	73.55	1.44	55.97	1.46
	Post-Intervention	73.50	12.24	52.45	7.06
	Follow-Up	77.89	2.10	53.43	1.72
Academic Procrastination	Pre-Intervention	45.58	1.70	35.71	1.86
	Post-Intervention	46.45	9.71	31.70	6.59
	Follow-Up	48.18	1.78	32.30	1.46

As shown in Table 1, the mean scores for self-handicapping and academic procrastination were lower in the experimental group than in the control group before the intervention and adjustment. Table 1 also shows the mean and standard deviation of students' scores in the control and experimental groups for the dependent variables after the intervention. According to the data, the mean scores for self-handicapping and academic procrastination were lower in the experimental group compared to the control group after the intervention and adjustment. This indicates that the scores for self-handicapping and academic procrastination decreased after the implementation of self-determination skills training interventions.

To examine the assumption of homogeneity of variance, the Levene's test was used. The significance level for the research variables (except for self-handicapping and academic engagement) was greater than 0.05, confirming the assumption of homogeneity of variance. Regarding self-handicapping, considering the equal sample sizes in each group, there was no need to strictly adhere to the assumptions of multivariate covariance analysis. To examine the assumption of equality of covariance, Box's test was used, which tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups. Since the F value was not significant at the given error level ($p = 0.14$), the null hypothesis was

confirmed, indicating the assumption of equality of covariance matrices.

To determine the effect of self-determination training on self-handicapping and academic procrastination, an analysis

of covariance (ANCOVA) was conducted, and the results are presented in Table 2.

Table 2

Results of ANCOVA on the Mean Scores of Dependent Variables Post-Intervention for Control and Experimental Groups

Source of Variance	Variable	Sum of Squares	df	Mean Square	F	p	Effect Size	Power
Training	Self-Handicapping	7527.2	1	7527.2	102.888	<0.001	0.575	1
	Academic Procrastination	1970.113	1	1970.113	34.744	<0.001	0.314	1

Regarding the effect of training on self-handicapping and academic procrastination, as shown in Table 2, there is a significant difference in the mean scores of the dependent variables between the experimental and control groups after the intervention ($p < 0.001$). In other words, self-determination training had a significant effect on reducing

self-handicapping and academic procrastination among students after the intervention. Additionally, to examine within-group and between-group differences, a repeated measures analysis of variance was used, and the results are reported in Table 3.

Table 3

Results of Within-Group and Between-Group Effects for Research Variables in Experimental and Control Groups

Variable	Effects	Source of Effect	Sum of Squares	df	Mean Square	F	p	Eta Squared
Self-Handicapping	Within-Group	Time	0.59	2	0.30	19	<0.001	0.425
		Time * Group	0.14	4	0.04	2.23	0.075	0.119
		Error	1.03	66	0.07			
Academic Procrastination	Within-Group	Group	0.38	2	0.19	11.480	<0.001	0.410
		Error	0.54	33	0.08			
		Time	723.90	2	361.95	44.78	<0.001	0.576
Academic Procrastination	Within-Group	Time * Group	309.25	4	77.31	9.57	<0.001	0.367
		Error	533.50	66	8.08			
		Group	825.35	2	412.67	30.05	<0.001	0.646
	Between-Group	Error	453.16	33	13.73			

The results in Table 3 show that 42% of the within-group changes in self-handicapping and 57% of the changes in academic procrastination are explained by time. The results of between-group effects also indicate a significant difference in self-handicapping and academic procrastination scores between the experimental and control

groups at the alpha level of 0.001. Next, the findings from the Bonferroni post-hoc test to determine the stability of the effectiveness of self-determination training on self-handicapping and academic procrastination during the follow-up stage are presented.

Table 4

Bonferroni Post-Hoc Test Results for Academic Procrastination and Self-Handicapping

Variable	Group Comparison	Mean Difference	SD	SE	p
Academic Procrastination	Pre-Test - Follow-Up	4.68	0.56	0.350	0.999
	Post-Test - Follow-Up	-0.51	0.63	0.350	<0.001
Self-Handicapping	Pre-Test - Follow-Up	4.08	0.60	0.350	0.999
	Post-Test - Follow-Up	-1.01	0.65	0.350	<0.001

According to the results in Table 4, the mean score differences in the pre-test and follow-up as well as the post-

test and follow-up for each of the variables of academic procrastination and self-handicapping indicate that the

effectiveness of self-determination training on each of these variables remained stable during the follow-up stage.

4. Discussion and Conclusion

Investigating various psychological interventions to improve performance and academic progress among students, as one of the most important segments of society, has always been of interest to researchers in this field. Therefore, the present study aimed to determine the effectiveness of self-determination training on self-handicapping and academic procrastination among undergraduate students at Farhangian University. The findings of the study are discussed in detail below.

The first finding indicates that self-determination skills training is effective in reducing self-handicapping among students, aligning with the prior research (Amjadian & Bahrami, 2023; Coudevylle et al., 2020; Delavar, 2015; Yu & Levesque-Bristol, 2020). According to self-determination theory, which has become one of the most popular theoretical frameworks for examining motivation in professional education classes, and suggests strategies for improving learners' motivation and active participation in the educational environment, if the three psychological needs of learners—autonomy (e.g., the need to experience a sense of choice and freedom to participate in an activity), relatedness (e.g., the need to establish meaningful relationships with the instructor or classmates), and competence (e.g., the need to feel capable of successfully completing challenging tasks assigned by the instructor)—are appropriately addressed using self-determination skills, they will gain more confidence in their abilities and academic skills, which will reduce their self-handicapping in the academic environment (Coudevylle et al., 2020). As mentioned earlier, self-handicapping occurs when an individual's self-concept is threatened and they lack high confidence in their abilities (Török et al., 2022). In this regard, Zare et al. (2022) showed in their research that self-determination skills training has the necessary effectiveness on the academic self-concept and self-efficacy of male students (Zare et al., 2022). Self-determination helps learners acquire the knowledge, skills, and beliefs that fulfill their needs for competence, autonomy, and relatedness, aiding in better learning, which ultimately improves their academic self-concept and reduces self-handicapping. According to prior studies (Al-Gharabawi et al., 2021; Areepattamannil et al., 2023), self-determination skills training plays a significant role in enhancing an individual's

self-concept. It can be said that a self-determined individual possesses both intrinsic and extrinsic motivation for learning, and by effectively participating in class and overcoming internal pressures and related anxieties, they can develop a positive self-concept while reducing self-handicapping. Additionally, in a study by Choet al. (2022), it was found that self-determination skills training in educational environments meets the basic psychological needs of university students, which reduces the factors leading to self-handicapping, such as psychological pressure and anxiety, thereby increasing class participation and academic growth (Cho et al., 2023).

The next finding of the study indicates the effectiveness of self-determination training in reducing academic procrastination among Farhangian University students. The research finding showed a significant difference in academic procrastination between the experimental and control groups in the post-test stage. This finding is consistent with the results of previous research (Oram, 2021; Tisocco & Liporace, 2023). It can be explained that satisfaction of the needs related to self-determination theory (competence, relatedness, and autonomy) leads to the formation of favorable motivational beliefs in performing academic activities and ultimately succeeding in tasks, as these individuals will be more persistent in completing tasks and are more likely to succeed. Simultaneously, this sense of success enhances the feeling of competence, improving motivational beliefs (Samari Safa & Poordel, 2022), reducing behaviors such as delaying assignments, missing classes, and performing poorly in mid-term and final exams. In a study by Oram (2021), it was found that one of the most important factors affecting academic procrastination among students is low academic motivation (Oram, 2021). From the perspective of self-determination theory, autonomous motivation arises from satisfying an individual's basic psychological needs (Shih, 2019). This perspective suggests that targeting basic psychological needs could have consequences for academic procrastination. Therefore, the effectiveness of self-determination skills training, through the mediating role of psychological needs, can enhance academic motivation, thus reducing academic procrastination among undergraduate students (Oram, 2021). Additionally, one characteristic of self-determined individuals is establishing relationships with others (Ganeh et al., 2022). These individuals constantly monitor changes in their surroundings during interpersonal interactions and update their mental structures accordingly. This ongoing interaction helps them choose achievable goals with self-

awareness and realism. In contrast, for individuals who are not self-determined, motivational sources are external. They continually seek others' assistance to perform tasks, and a failed experience might trigger various early maladaptive schemas; for example, the schema of failure in academics might lead to isolation and ultimately academic procrastination (Tajzadghehi et al., 2023). Therefore, learning and applying self-determination skills such as problem-solving, self-efficacy growth, and communication and empathy skills prevent procrastination behaviors in the academic environment.

5. Limitations & Suggestions

Overall, the study results indicate that self-determination skills training effectively reduces self-handicapping and academic procrastination among students. These results were also confirmed during the follow-up stage. Therefore, using self-determination skills training to reduce self-handicapping among students and decrease procrastination behaviors is essential for psychologists and counselors. Like any research, this study had limitations, including conducting research on a volunteer sample, using a workshop method for self-determination training, developing a theory-based and deductive intervention package based on Deci and Ryan's theory, and focusing on basic needs in the package development. Future research should determine the effectiveness of self-determination skills training on other academic variables and use data-driven and inductive methods in developing self-determination training packages.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors equally contributed to this article.

References

- Abdali, R., & Moshtaghi, S. (2020). Causal modeling of relationship between fear of negative evaluation, self-esteem instability and positive perfectionism with Students' academic self-handicapping. *Journal of Educational Psychology*, 4(10), 1-14. <http://sanad.iau.ir/fa/Article/953266>
- Abdollahi, M., Darbani, S. A., & Parsakia, K. (2022). Structural equations the effect of logical-critical thinking style with academic achievement with the mediating role of action control in high school students [Original Research]. *Journal of Assessment and Research in Applied Counseling*, 4(3), 64-78. <https://doi.org/10.52547/jarac.4.4.64>
- Abdollahi, M., & Foroughi pordanjani, B. (2023). The Mediating Role of Personality Traits in the Relationship between Parenting Styles and Academic Self-Handicapping. *jnip*, 18(22), 0-0. <http://jnip.ir/article-1-990-en.html>
- Afshari, A. (2023). Develop a causal model of self-handicapping syndrome based on negative self-assessment, intolerance of ambiguity, and cognitive avoidance with the mediating role of academic procrastination. *Developmental Psychology*, 19(76), 409-422. <https://www.magiran.com/paper/2643643>
- Ahmadian, H. (2019). Developing and Testing the Model of Academic Disability. *Research in Teaching*, 7(2), 213-226. <https://doi.org/10.34785/j012.2019.596>
- Al-Gharabawi, M. A.-R. M., Ashry, M. M. S., & Al-Ahwany, H. H. (2021). Self-determination skills and their relationship to academic self-concept and quality of life for students of the second cycle of basic education. *40(192)*, 649-678. https://jsrep.journals.ekb.eg/article_241983.html?lang=en
- Alizadeh Aghdam, M. B., Abbaszadeh, M., & Saei, M. (2022). A Sociological Study of Students' Academic Burnout (Case Study: Students of Tabriz University). *Quarterly of Social Studies and Research in Iran*, 11(2), 489-516. <https://doi.org/10.22059/jjsr.2022.319915.1191>
- Amjadian, F., & Bahrami, M. (2023). The Correlation between Self-Handicapping and Students' Academic Performance: The Intermediary Role of Procrastination in High School Students in the City of Kermanshah [Research]. *Quarterly Journal of Education*, 38(4), 87-106. <http://qjoe.ir/article-1-1857-en.html>
- Areepattamannil, S., Khurma, O. A., Ali, N., Al Hakmani, R., & Kadbey, H. (2023). Examining the relationship between science motivational beliefs and science achievement in Emirati early adolescents through the lens of self-determination theory. *Large-scale Assessments in Education*, 11(1), 25. <https://doi.org/10.1186/s40536-023-00175-7>

- Ashraf, M. A., Sahar, N.-e., Kamran, M., & Alam, J. (2023). Impact of Self-Efficacy and Perfectionism on Academic Procrastination among University Students in Pakistan. *Behavioral Sciences*, 13(7), 537. <https://www.mdpi.com/2076-328X/13/7/537>
- Barutçu Yıldırım, F., & Demir, A. (2019). Self-Handicapping Among University Students: The Role of Procrastination, Test Anxiety, Self-Esteem, and Self-Compassion. *Psychological Reports*, 123(3), 825-843. <https://doi.org/10.1177/0033294118825099>
- Bulut, S., Bukhori, B., & Parsakia, K. (2024). Enhancing Selective Attention in Children with Learning Disorders: Efficacy of Executive Functions Training. *KMAN Counseling & Psychology Nexus*, 1(2), 86-93. <https://doi.org/10.61838/kman.psychnexus.1.2.14>
- Chen, Z., Sun, K., & Wang, K. (2017). Self-Esteem, Achievement Goals, and Self-Handicapping in College Physical Education. *Psychological Reports*, 121(4), 690-704. <https://doi.org/10.1177/0033294117735333>
- Chiu, T. K. F. (2022). Applying the self-determination theory (SDT) to explain student engagement in online learning during the COVID-19 pandemic. *Journal of Research on Technology in Education*, 54(sup1), S14-S30. <https://doi.org/10.1080/15391523.2021.1891998>
- Cho, H. J., Levesque-Bristol, C., & Yough, M. (2023). How autonomy-supportive learning environments promote Asian international students' academic adjustment: a self-determination theory perspective. *Learning Environments Research*, 26(1), 51-76. <https://doi.org/10.1007/s10984-021-09401-x>
- Coudeville, G. R., Bouley-Escriva, G., Finez, L., Eugène, K., & Robin, N. (2020). An experimental investigation of claimed self-handicapping strategies across motivational climates based on achievement goal and self-determination theories. *Educational Psychology*, 40(8), 1002-1021. <https://doi.org/10.1080/01443410.2020.1746237>
- Delavar, A. (2015). Studying the psychometric properties of self-handicapping scale. *Quarterly of Educational Measurement*, 5(20), 97-117. <https://doi.org/10.22054/jem.2015.1789>
- Firouz Jahantigh, V. (2022). Relationship between self-determination and achievement goals with academic performance [Research]. *Journal of Psychology New Ideas*, 11(15), 1-8. <http://jnip.ir/article-1-667-en.html>
- Gagné, M., Parker, S. K., Griffin, M. A., Dunlop, P. D., Knight, C., Klonek, F. E., & Parent-Rocheleau, X. (2022). Understanding and shaping the future of work with self-determination theory. *Nature Reviews Psychology*, 1(7), 378-392. <https://doi.org/10.1038/s44159-022-00056-w>
- González-Brignardello, M. P., Sánchez-Elvira Paniagua, A., & López-González, M. Á. (2023). Academic Procrastination in Children and Adolescents: A Scoping Review. *Children*, 10(6), 1016. <https://www.mdpi.com/2227-9067/10/6/1016>
- Hamvai, C., Kiss, H., Vörös, H., Fitzpatrick, K. M., Vargha, A., & Pikó, B. F. (2023). Association between impulsivity and cognitive capacity decrease is mediated by smartphone addiction, academic procrastination, bedtime procrastination, sleep insufficiency and daytime fatigue among medical students: a path analysis. *BMC Medical Education*, 23(1), 537. <https://doi.org/10.1186/s12909-023-04522-8>
- Haukäs, Å., Pietzuch, A., & Schei, J. H. A. (2023). Investigating the effectiveness of an online language teacher education programme informed by self-determination theory. *The Language Learning Journal*, 51(6), 663-677. <https://doi.org/10.1080/09571736.2022.2027001>
- Hesampour, F., & Rezaei, A. M. (2023). Predicting Students' Academic Flourishing based on the Moral Intelligence: The Mediating Role of Academic Motivation, Academic Emotions, Academic Procrastination and Academic Burnout [Research]. *Quarterly Journal of Child Mental Health*, 10(2), 83-103. <https://doi.org/10.61186/jcmh.10.2.7>
- Hu, X., Huang, Z., & Yang, M. (2023). Profiles of EFL Learners' Online Self-regulation and Their Relationship with Dimensions of Self-determination Motivation in Mainland China. *The Asia-Pacific Education Researcher*, 32(5), 685-694. <https://doi.org/10.1007/s40299-022-00686-x>
- Jia, J., Wang, L.-l., Xu, J.-b., Lin, X.-h., Zhang, B., & Jiang, Q. (2021). Self-Handicapping in Chinese Medical Students During the COVID-19 Pandemic: The Role of Academic Anxiety, Procrastination and Hardiness [Original Research]. *Frontiers in psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.741821>
- Kam, H.-J., Ormond, D. K., Menard, P., & Crossler, R. E. (2022). That's interesting: An examination of interest theory and self-determination in organisational cybersecurity training. *Information Systems Journal*, 32(4), 888-926. <https://doi.org/10.1111/isj.12374>
- Mansurnejad, Z., Malekpour, M., Ghamarani, A., & Yar Mohammadian, A. (2019). The Effectiveness of Self-Determination Skills Training on Basic Psychological Needs of Students with Externalized Behavioral Problems. *Psychological Achievements*, 26(1), 1-16. <https://doi.org/10.22055/psy.2019.25336.2043>
- Najafi Khorramabad, H., Jayervand, H., & Sadat Marashian, F. (2022). Comparison of the Effectiveness of Self-determination Theory Training and Acceptance and Commitment Therapy on Sleep Quality and Academic Hope in Students with Internet Gaming Disorder with and without Comorbidity of Attention Deficit / Hyperactivity Disorder [Research]. *Quarterly Journal of Child Mental Health*, 9(1), 67-83. <https://doi.org/10.52547/jcmh.9.1.6>
- Nik Andam Kermanshahi, H., Safaei Rad, I., Erfani, N., & Yar Ahmadi, Y. (2021). The role of negative perfectionism, difficulty in emotional regulation and self-disability in predicting academic boredom in high school male students. *Journal of School Psychology*, 10(2), 155-180. <https://doi.org/10.22098/jsp.2021.1184>
- Norouzi, G., Mirzaei, H., & Shirzadi, M. M. (2021). The efficacy of self-determination skills training on the psychological well-being and resilience of mothers of children with down syndrome. *Journal-of-Psychological-Science*, 20(105), 1553-1568. <https://doi.org/10.52547/JPS.20.105.1553>
- Oram, R. A. J. (2021). *Stop Procrastinating on Procrastination: An Exploration of Academic Procrastination Through the Lens of Self-Determination Theory* Université d'Ottawa/University of Ottawa]. <https://ruor.uottawa.ca/handle/10393/41808>
- Özberk, E. H., & TÜRK KurtÇA, T. (2022). Profiles of Academic Procrastination in Higher Education: A Cross-Cultural Study Using Latent Profile Analysis. *International Journal of Psychology and Educational Studies*, 8(3), 150-160. <https://doi.org/10.52380/ijpes.2021.8.3.465>
- Parsakia, K., Darbani, S. A., Rostami, M., & Saadati, N. (2022). The effectiveness of strength-based training on students' academic performance. *Journal of Adolescent and Youth Psychological Studies*, 3(3), 194-201. <http://dx.doi.org/10.52547/jspnay.3.3.194>
- Podineh Ebrahimi, M., Hatamian, P., & Rahdar, M. (2022). The Role of emotional dysregulation, academic procrastination and family flexibility in predict academic burnout female students the second period in high school [Research]. *Journal of nursing education*, 10(4), 33-40. <https://doi.org/10.22034/IJPN.10.4.33>

- Rahman, I. K., Indra, H., & Kasman, R. (2018). PERILAKU PROKRASINASI AKADEMIK DAN LAYANAN BIMBINGAN DAN KONSELING. *TADBIR MUWAHHID*, 2(2), 111-119. <https://doi.org/10.30997/jtm.v2i2.1330>
- Samari Safa, J., & Poordel, M. (2022). Developing an Academic Burnout model based on Family Emotional Climate, psychological capital, purposefulness, procrastination and academic involvement of graduate students. *Counseling Culture and Psychotherapy*, 13(49), 131-162. <https://doi.org/10.22054/qccpc.2021.58418.2628>
- Shih, S. (2019). An examination of academic coping and procrastination from the self-determination theory perspective. *Journal of Education and Human Development*, 8(1), 57-68. http://jehd.thebrpi.org/journals/jehd/Vol_8_No_1_March_2019/8.pdf
- Shirzadi, M. m., Bodaghi, A., mirzaei, h., & babadi akashe, n. (2021). The effectiveness of self-determination skills training on academic incivility and academic engagement [Research]. *Journal of Psychological Science*, 20(99), 391-404. <http://psychologicalscience.ir/article-1-851-en.html>
- Soleimani Rad, H., Samadi, S., Sirois, F. M., & Goodarzi, H. (2023). Mindfulness intervention for academic procrastination: A randomized control trial. *Learning and Individual Differences*, 101, 102244. <https://doi.org/10.1016/j.lindif.2022.102244>
- Suhadianto, Isrida Yul, A., Hetti, R., Fattah, H., & Nur, E. (2021). Stop Academic Procrastination During Covid 19: Academic Procrastination Reduces Subjective Well-Being. *Kne Social Sciences*, 4(15). <https://doi.org/10.18502/kss.v4i15.8220>
- Tajzadghehi, A., moradi, h., & Bigdeli, H. (2023). Comparison of the effectiveness of group training based on early maladaptive schemas and mindfulness on experiential avoidance and distress tolerance (case study: teenage girls with high body mass index). *Military Psychology*, 14(2), 25-53. https://jmp.ihu.ac.ir/article_208254_d18dd4b41c53cf3c390c80df68c412b4.pdf
- Tisocco, F., & Liporace, M. F. (2023). Structural Relationships Between Procrastination, Academic Motivation, and Academic Achievement Within University Students: A Self-determination Theory Approach. *Innovative Higher Education*, 48(2), 351-369. <https://doi.org/10.1007/s10755-022-09622-9>
- Török, L., Szabó, Z. P., & Orosz, G. (2022). Promoting a growth mindset decreases behavioral self-handicapping among students who are on the fixed side of the mindset continuum. *Scientific reports*, 12(1), 7454. <https://doi.org/10.1038/s41598-022-11547-4>
- Yaghoob, Z., Farokhi, A., & Ahmad, R. (2021). The Effectiveness of Self-Determination Skills Training on Academic Self-Concepts and Academic Self-Efficacy of Fifth Grade Students in Yasuj. *Journal of Adolescent and Youth Psychological Studies*, 2(1), 304-317. <https://www.magiran.com/paper/2538571>
- Yu, S., & Levesque-Bristol, C. (2020). A cross-classified path analysis of the self-determination theory model on the situational, individual and classroom levels in college education. *Contemporary Educational Psychology*, 61, 101857. <https://doi.org/10.1016/j.cedpsych.2020.101857>
- Zandieh, M., & Jafariharandi, R. (2020). Predication of academic procrastination upon the Big Five personality traits & self-handicapping. *Cultural Psychology*, 4(1), 116-138. <https://doi.org/10.30487/jcp.2020.240800.1139>
- Zare, R., Taklavi, S., & Ghaffari, A. (2022). The Effectiveness of the Children Philosophy Education on Self-determination and Responsibility of the Elementary Students [Research]. *Rooyesh-e-Ravanshenasi Journal(RRJ)*, 10(12), 37-48. <http://frooyesh.ir/article-1-3265-en.html>
- Zarkouipour, A., Sanagoy Mohrar, G., & Shirazi, M. (2022). Effectiveness of Commitment and Acceptance Therapy on Academic Procrastination and Behavioral Maladaptation of Male Students with Test Anxiety: A Quasi-Experimental Study [Research]. *Journal of Rafsanjan University of Medical Sciences*, 21(1), 3-16. <https://doi.org/10.52547/jrums.21.1.3>
- Zhang, D., Li, Y.-F., & Cavazos, M. (2020). Effective practices for teaching self-determination. In *Oxford Research Encyclopedia of Education*. <https://oxfordre.com/education/display/10.1093/acrefore/9780190264093.001.0001/acrefore-9780190264093-e-1184>