Iranian Journal of Educational Sociology

Journal Website

Article history:
Received 28 November 2023
Revised 25 February 2024
Accepted 04 March 2024
Published online 13 July 2024

Iranian Journal of Educational Sociology

Volume 7, Issue 3, pp 149-160

Quarterly
Iranian Journal of Educational Sociology

E-ISSN: 2645-3460

Comparing the Effectiveness of Academic Buoyancy and Psychological Capital Training on Academic Procrastination in Female High School Students

Zahra Emami Khotbesara[1], Hossein Mahdian[2*], Abolfazl Bakhshipour[3]

[1] PhD student, Department of Psychology, Bojnurd Branch, Islamic Azad University, Bojnurd, Iran.
[2]Assistant Professor, Department of Psychology, Bojnurd Branch, Islamic Azad University, Bojnurd, Iran.
[3]Assistant Professor, Department of Psychology, Bojnurd Branch, Islamic Azad University, Bojnurd, Iran.

*** Corresponding author email address**: hossein3284@gmail.com

A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Emami Khotbesara, Z., Mahdian, H., Bakhshipour, A. (2024). Comparing the Effectiveness of Academic Buoyancy and Psychological Capital Training on Academic Procrastination in Female High School Students, Iranian Journal of Educational Sociology. 7(3): 148-160.
http://dx.doi.org/10.61838/kman.ijes.7.3.18

A B S T R A C T

Purpose: This study aimed to compare the effectiveness of academic buoyancy training and psychological capital training on academic procrastination among female students.
Methodology: The population of this research included all female high school students in District 7 of Mashhad in the academic year 2020-2021. To collect data, the Academic Procrastination Questionnaire by Solomon and Rothblum (1984) was used. This research was a quasi-experimental study with a pre-test and post-test design with a control group, involving 45 participants who had higher scores on the dependent variable and were willing to participate in training sessions. They were randomly assigned to two experimental groups and one control group (each group consisting of 15 students). One week after the pre-test was conducted for all three groups, one of the experimental groups was exposed to the independent variable of academic buoyancy training, and the second experimental group was exposed to psychological capital training, while the control group did not receive any training. Then, a post-test was administered to all groups. In this study, to examine the differences between groups, multivariate and univariate repeated measures analysis of variance was used, taking into account within-group (test) and between-group (group membership) factors.
Findings: The results showed that both academic buoyancy training and psychological capital training led to a reduction in academic procrastination among female students. The results also indicated that there was no significant difference in the effectiveness of academic buoyancy training and psychological capital training on academic procrastination.
Conclusion: It can be concluded that both academic buoyancy training and psychological capital training are effective in reducing academic procrastination, and there is no difference in their level of effectiveness.
Keywords: *Academic Buoyancy Training, Psychological Capital Training, Academic Procrastination, Female Students.*

[DOI: 10.61838/kman.ijes.7.3.18]

1. Introduction

Nowadays, one of the most significant concerns of educational systems is the issue of success in education, and an educational system is considered successful and efficient when its learners are in an optimal academic state (Muhonen et al., 2018). The growth and prosperity of any society depend on its educational system and the scientific and practical capabilities of its future learners. Accordingly, countries spend a significant portion of their national income on education annually, but some factors lead to a considerable waste of these resources, which studies have shown are often due to the needs, motivations, beliefs, preferences, and talents of learners (Zainallypour et al., 2009). New theories of education and learning emphasize the role of motivation and individual beliefs, arguing that learners should not just be confronted with content and concepts but should be encouraged to engage actively through appropriate training, thereby increasing their academic success and fostering positive attitudes, motivation, and beliefs (Kocaj et al., 2018).

One variable discussed in the educational environment that affects it is academic procrastination. Procrastination, in general, means the improper or unrealistic postponement of tasks and the process of completing them, referring action to the future (Kandemir & Palancı, 2014). A procrastinator exhibits symptoms such as time-wasting behavior, feeling overwhelmed by responsibilities, inability to achieve important life goals, rushing tasks at the last minute, daydreaming instead of doing tasks, and lacking continuous life planning. Procrastination leads to nighttime restlessness and poor sleep, high levels of stress and anxiety, and falling behind due to insufficient time to complete tasks properly (Ma et al., 2023; Popova & Pronenko, 2023). In fact, academic procrastination represents a specific behavioral type that is potentially related to incompatible motivational processes and poor academic performance (Ragusa et al., 2023). Academic procrastination is prevalent among students and is a determinant factor in academic progress and success (Sparfeldt & Schwabe, 2024).

On the other hand, academic buoyancy is related to the success of the educational system, and its training leads to learners' success in the educational system (Fouladi et al., 2018). Hosseinpanah and Kazemian Moghadam (2021) showed that academic buoyancy has a direct effect on academic procrastination (Hossinpanah & Kazemianmoghadam, 2021). Fouladi, Kajbaf, and Ghomrani (2018) demonstrated that academic buoyancy training significantly increased academic success and self-efficacy in female students (Fouladi et al., 2018). Datu and Yang (2019) concluded that academic buoyancy has a significant positive relationship with academic motivation and progress (Datu & Yang, 2021). Research by Ahmadi, Jadidi, and Khalatbari (2019), and Sadat and Setaishi Azhari (2019) indicates a relationship between academic buoyancy and academic engagement (Ahmadi et al., 2020; Sadat & Setayeshiazhar, 2019).

The construct of academic buoyancy is designed based on a positive psychology approach, meaning the successful ability of learners to face educational challenges and respond positively, constructively, and adaptively to various academic challenges and obstacles (Martin et al., 2013). When an individual spontaneously performs a task, not only do they not feel fatigue and despair, but they feel an increase in energy and strength (Weißenfels et al., 2023). According to Martin and Marsh (2008), the antecedents of academic buoyancy are related to education at three different levels, including psychological factors, school factors and participation, and family and peer factors (Martin & Marsh, 2008). Therefore, many factors are related to academic buoyancy, which can be divided into three main categories: educational psychological factors, family and peer factors, and school and participation factors. Psychological factors related to education include academic resilience, motivation, academic self-regulation, and academic self-efficacy. Family and peer factors in education include cognitive and emotional support from the family, cognitive and emotional support from friends, communication patterns, and constructive interaction with family and peers. School and participation factors in education include classroom structure, perceived classroom goals, quality and how time is spent in class, positive perception of the classroom, positive attitude towards it, participation in improving classroom atmosphere, and formal and informal friend networks. Academic buoyancy is one of the important indicators in fruitful and successful education and training that leads to the realization of competencies and abilities and achieves scientific progress (Putwain & Daly, 2013).

The success and academic performance of students depend on various psychological, social, economic, and even cultural factors. Among these, psychological capitals play a decisive role. Javan Mojarad et al. (2022) showed that social and psychological capitals have an effective role in students' academic enthusiasm (Javan

[DOI: 10.61838/kman.ijes.7.3.18]

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

Mojarad et al., 2022). Mohammadpour and Mahmoudian (2021) found a significant negative relationship between psychological capital and its components, namely self-efficacy, optimism, hope, and resilience, with academic procrastination among tenth-grade female students (Mohammadpour & Bita, 2020). Datu et al. (2018) reminded that psychological capital and its dimensions are predictive of future-oriented motives for autonomy, controlled motivation, academic engagement, and academic progress (Datu et al., 2018). Gamoran et al. (2021) concluded that psychological capital plays a key role in students' academic progress (Gamoran et al., 2021).

Psychological capital is one of the main concepts of positive psychology that explores the positive horizons of human life. It encompasses psychological states that contribute to individual productivity, including self-perception, self-worth, purposefulness, and resistance to problems (Farhadi et al., 2016). In fact, psychological capital goes beyond economic capital (what you have), social capital (who you know), and human capital (what you know), addressing the issue (who you are) (Luthans et al., 2014). There is ample empirical evidence (Faraj Zadeh et al., 2020; Farhadi et al., 2016; Ghodrati Isfahani & Moradi, 2020; Hicks & Wu, 2015; Javan Mojarad et al., 2022; Martínez et al., 2019; Mohammadpour & Bita, 2020; Safriani & Muhid, 2022; Somayeh & Neda, 2020; Ye & Yang, 2022; Yu et al., 2021) that students and students' possession of psychological capital improves their academic issues and resilience and leads to a reduction in academic problems.

Experts overall define psychological capital under four categories: hope, resilience, optimism, and self-efficacy. Hope means positive and negative attitudes in everyday language conversations that flow. Slocum and Hellriegel provided a relatively simple definition of hope; they defined hope as a firm mental force plus the power to achieve goals (Mohammadi et al., 2021; Saadati & Parsakia, 2023). The resilience dimension refers to the individual's ability to respond to adversities, challenges, risks, insecurities, and conflicts (Rezaei et al., 2018). Self-efficacy means the individual's belief and confidence in their internal and motivational resources to perform a specific task optimally and with necessary actions (Sheikh Zeineddin et al., 2018). Optimism, as the fourth construct of psychological capital, means a positive outlook on matters that happen in the best way. In other words, optimistic individuals have a positive outlook on events that occur in their life environment (Ye & Yang, 2022). On one hand, academic procrastination affects the success of the educational system, and on the other, although few studies have been conducted on the effectiveness of methods of teaching academic buoyancy and psychological capital, it seems that these methods can play an effective role in improving learners' academic procrastination. Also, no research has compared the effectiveness of the two methods of academic buoyancy training and psychological capital training, and given that both methods focus on challenges and solving these challenges, more research is needed on the effectiveness of these methods and comparing them. Therefore, the present study seeks to answer the question of whether there is a difference in the effectiveness of academic buoyancy training and psychological capital training on academic procrastination or not.

2. Methodology

This study was a quasi-experimental research with a pre-test and post-test control group design. One group was selected as the control group, and two other groups were selected as experimental groups. One experimental group was exposed to academic buoyancy training, and the other to the independent variable of psychological capital training. The control group did not receive any training. The population of this study consisted of all female high school students in District 7 of Mashhad in the academic year 2020-2021, and considering that the sample size in experimental research should be at least 15 individuals per group. A total of 45 individuals were selected as samples and were randomly assigned to two experimental groups and one control group (each group consisting of 15 students). For sample selection, a single-stage cluster sampling method was used, in which two high schools from all the public girls' high schools in District 7 of Mashhad were randomly selected, and initially, all students of these two high schools were selected as the sample. Then, the Academic Procrastination Questionnaire was administered among these students. Subsequently, after scoring the questionnaire, 45 individuals who had higher scores in academic procrastination and were willing to participate in the sessions were selected as the sample and randomly assigned to two experimental groups and one control group (each group consisting of 15 students). The inclusion and exclusion criteria for the research included being a female high school student, having a high score in academic procrastination, not receiving other psychological treatments, attending all

[DOI: 10.61838/kman.ijes.7.3.18]

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

sessions, and the possibility of missing only one session. The following questionnaire was used for data collection:

Academic Procrastination Questionnaire by Solomon and Rothblum (1984): This questionnaire was developed by Solomon and Rothblum in 1984 to assess procrastination in three areas: preparing assignments, readiness for exams, and preparing midterm reports. The scale consists of 22 items, in addition to 21 questions, 6 questions were also considered for measuring two characteristics: the discomfort of being procrastinatory and the desire to change the habit of procrastination. Therefore, this questionnaire has 27 items. The questionnaire is scored on a 5-point Likert scale, where "never" scores 1, "rarely" scores 2, "sometimes" scores 3, "most of the time" scores 4, and "always" scores 5. Questions 2-4-6-7-8-11-13-15-16-18-19-21-23-25-26 are scored inversely. The minimum possible score is 27, the median is 81, and the maximum is 135. The reliability of the questionnaire in the research by Nikbakht et al. (2014) was 0.86 using Cronbach's alpha. Jokar and Delavarpour (2007) used factor analysis and item-total correlation to determine the validity of this scale (Afshari et al., 2022).

One week after the pre-test for all three groups, one of the experimental groups was exposed to the independent variable of academic buoyancy (12 sessions of 70 minutes each) and the second group to psychological capital training (10 sessions of two hours each), while the control group did not receive any training. After the training in academic buoyancy and psychological capital, a post-test was administered one week later for all three groups, and all three groups filled out the Academic Procrastination Questionnaire again. Furthermore, one month after the post-test, a follow-up phase was conducted, and ultimately, the data collected were analyzed. The steps and sessions related to academic buoyancy training and psychological capital training are detailed below:

The academic buoyancy training program was designed by Fouladi (2018) based on Martin and Marsh's (2008) (Fouladi et al., 2018; Martin & Marsh, 2008) theory for 12 sessions of 70 minutes each, the objective and content of which are presented by session in Table 1.

Table 1. Objectives and Content of the Academic Buoyancy Training Program by Sessions

Session	Objective	Sub-objectives	Content
First	Introduction	Introduction and stating the objectives	Introducing the participants and the researcher, discussing expectations and objectives, stating the rules and regulations of the training course
Second	Psychological Factors Training	Academic Resilience	Understanding the concept of academic resilience, cognitive restructuring and creating resilient and constructive thinking, countering Beck's cognitive distortions, adopting an academic perspective (short-term and long-term goals), recognizing academic abilities, boosting academic self-esteem, emphasizing the importance of meaning in education
Third	Intrinsic Motivation in Education	Intrinsic and Extrinsic Motivation	Understanding the concepts of intrinsic and extrinsic motivation, the role of motivation in education, increasing intrinsic motivation, teaching optimism and hope in education, teaching mastery goals
Fourth	Academic Self-Regulation	Academic Self-Regulation	Understanding the concept of academic self-regulation, teaching cognitive and metacognitive strategies, teaching study methods, teaching self-monitoring and self-reinforcement, teaching time and place management for study, teaching how to ask for help
Fifth	Academic Self-Efficacy	Academic Self-Efficacy	Understanding the concept of self-efficacy and academic self-efficacy, teaching self-efficacy and its role in academic life, teaching problem-solving, improving self-efficacy through teaching responsibility and its role in academic life

[DOI: 10.61838/kman.ijes.7.3.18]

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

Sixth	School Factors and Participation	Family and Friends' Cognitive Support in Education	The role and importance of family and friends' cognitive support in education, teaching strategies to garner cognitive support from family and friends, teaching problem-solving and addressing cognitive academic issues with the help of family and friends
Seventh		Emotional Support from Family and Friends in Education	The role and importance of emotional support from family and friends in education, teaching strategies to garner emotional support from family and friends, teaching problem-solving and addressing emotional academic issues (such as exam anxiety) with the help of family and friends
Eighth		Teaching Communication Patterns and Constructive Interaction with Family and Friends	The role and importance of communication with family and friends in education, teaching listening and speaking communication patterns, teaching recognition and coping with communication barriers, teaching constructive communication skills with an emphasis on self-awareness and empathy, anger control, and coping with stress, effective interpersonal and intrapersonal communication
Ninth	Family and Peer Factors	Teaching Positive Perception of Classroom Structure and Attitude	Understanding classroom structures, the role of classroom and school structures in education, the role of students in classroom structure, the importance of goals and classroom structure, teaching positive perception of classroom and school structure
Tenth		Improving the Quality of Time Spent in Class	Teaching how to spend time before the teacher enters the classroom and its role in education and progress, the importance of reviewing titles before the teacher enters, teaching how to spend time after the teacher's lecture in the last minutes of class, the importance of planning for time spent in class
Eleventh		Teaching Participation to Improve Classroom and School Atmosphere and Formal and Informal Networks	The role and importance of students in improving classroom atmosphere, teaching strategies for students' participation in improving classroom and school atmosphere, finding puzzles or educational jokes related to the goal to create variety and educational interest, the role of formal and informal communication networks in classroom and school atmosphere, improving friend networks with the goal of positive perception of classroom and school atmosphere
Twelfth	Conclusion	Review and Conclusion of the Educational Program	A brief review of the educational program by sessions, concluding the educational program guided by the researcher

In this study, for psychological capital training, Luthans' et al. (2014) model of ten 2-hour sessions was used (Luthans et al., 2014). A brief description of the ten sessions is provided in Table 2.

[DOI: 10.61838/kman.ijes.7.3.18]

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

Table 2. Summary of Psychological Capital Training Sessions

Session	Content Summary
1	Introduction to the concepts of hope vs. despair, characteristics of hopeful individuals, definitions and distinctions between optimism, pessimism, realistic optimism, and unrealistic optimism, self-efficacy, and traits of resilient individuals.
2	Exploring participants' levels of hope and life satisfaction, motivation creation, understanding learned helplessness and its impact on optimism and pessimism, the role of learned helplessness in diminishing self-efficacy, introducing resilience components (commitment, challenge, control).
3	Educating participants on the role of goals in creating and enhancing hope, familiarizing with the attribution process and locus of control concept, discussing the relationship between motivation, willpower, self-confidence, and self-efficacy, focusing on the commitment component to enhance it.
4	Learning about setting clear and attainable goals, understanding internal, external, global, specific, stable, and unstable attributions and their role in optimism, discussing ways to increase self-confidence and self-efficacy, focusing on the challenge component to view problems as challenges.
5	Teaching how to break down a large goal into smaller, achievable ones to increase the likelihood of their realization, the role of attributions in optimism, using mental imagery to create positive experiences and enhance self-efficacy, focusing on the control component and discussing ways to increase the sense of control over life.
6	Informing participants about formulating clear and tangible goals, teaching how to create and expand positive internal attributions, using substitution reinforcement techniques with global and local examples of self-efficacious individuals to familiarize participants with problem-focused and emotion-focused strategies and their role in enhancing resilience.
7	Introducing the role of setting daily goals in achieving larger goals and how to do it, using the technique of analyzing less unpleasant to more unpleasant events to raise the level of optimism, introducing scientific problem-solving methods and their practical role in increasing self-efficacy, further acquaintance with direct or problem-focused strategies and encouraging their use.
8	Familiarizing members with the use of multiple pathways to achieve a goal, using the technique of analyzing unpleasant events and determining the positive outcomes of these events to enhance optimism, inviting a successful and self-efficacious individual to use concrete models to increase self-efficacy, further acquaintance with indirect or emotion-focused strategies and their use when necessary and in high-stress situations.
9	Educating members on how to turn obstacles into challenges for goal achievement, focusing on individual and environmental talents and abilities to increase optimism, using direct reinforcement and substitution reinforcement by discussing previous successes to increase self-efficacy, discussing the role of locus of control in resilience and using positive self-talk techniques to increase resilience level.
10	Reviewing learned content from previous sessions and practical exercises to increase levels of hope, optimism, self-efficacy, and resilience.

In this study, to examine the differences between groups, multivariate and univariate repeated measures analysis of variance was used, taking into account within-group (test) and between-group (group membership) factors. The Bonferroni post-hoc test was also used for between-group comparisons. For the execution of this parametric statistical test, in addition to the interval scale of measurement variables, the assumptions of normal distribution of variables, homogeneity of variances, correlation of dependent variables, and the sphericity assumption were examined.

3. Findings

Descriptive indices of academic procrastination in the pre-test, post-test, and follow-up stages, differentiated by groups, are presented in the table below.

[DOI: 10.61838/kman.ijes.7.3.18]

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

Table 3. Descriptive Indices of Academic Procrastination According to Test Stages and Differentiated by Groups

Variable	Group	Pre-test		Post-test		Follow-up	
		M	SD	M	SD	M	SD
Preparing assignments	Academic Buoyancy	22.53	3.00	17.53	3.00	16.47	2.88
	Psychological Capital	23.73	3.06	18.73	2.96	18.67	2.82
	Control	23.60	2.69	23.53	2.72	23.87	2.20
Readiness for exams	Academic Buoyancy	27.53	4.44	21.53	4.44	21.53	4.44
	Psychological Capital	28.47	4.81	22.33	4.88	22.33	4.88
	Control	27.93	4.33	27.87	4.24	27.67	4.47
Preparing mid-term reports	Academic Buoyancy	22.53	3.89	16.53	3.89	16.53	4.07
	Psychological Capital	22.87	3.91	16.87	3.91	17.00	3.32
	Control	21.67	3.44	21.53	3.70	21.73	3.31
Feeling upset from procrastination	Academic Buoyancy	15.67	2.64	11.67	2.64	11.80	2.08
	Psychological Capital	15.27	2.12	11.27	2.12	11.27	1.83
	Control	16.47	3.25	15.60	3.14	15.27	3.01
Desire to change habits	Academic Buoyancy	14.40	2.29	11.27	1.83	11.27	1.75
	Psychological Capital	14.87	1.85	11.87	2.26	11.57	2.09
	Control	15.20	1.74	14.40	1.64	14.53	1.64
Total Score	Academic Buoyancy	102.67	7.64	78.53	7.33	77.60	6.61
	Psychological Capital	105.20	7.25	81.07	6.98	80.93	7.87
	Control	104.87	7.98	102.93	7.37	103.07	7.28

The results of the above table indicate that in the post-test and follow-up, the mean scores of the dimensions and the total score of academic procrastination of subjects in both the academic buoyancy training and psychological capital training groups are lower compared to the subjects of the control group. The comparison of means also indicates that in both the academic buoyancy training and psychological capital training groups, the mean scores decreased from pre-test to post-test, but there was no significant change from the post-test to the follow-up.

In this study, to examine the differences between groups, multivariate and univariate repeated measures analysis of variance was used, considering the within-group factor (test) and between-group factor (group membership) to investigate the difference in the dimensions of academic procrastination among subjects of the three groups of academic buoyancy training, psychological capital training, and control. Prior to the analysis, the assumptions were examined. The results of the homogeneity of variances are presented in the table below.

[DOI: 10.61838/kman.ijes.7.3.18]

Table 4. Levene's Test Results for Examining the Equality of Variance of Academic Procrastination in Experimental Groups

Variable	Pre-test		Post-test		Follow-up	
	F	p	F	p	F	p
Preparing assignments	0.30	0.59	0.32	0.57	0.37	0.55
Readiness for exams	0.60	0.45	0.88	0.36	0.88	0.36
Preparing mid-term reports	0.001	0.97	0.001	0.97	0.67	0.42
Feeling upset from procrastination	0.06	0.81	0.06	0.81	0.05	0.82
Desire to change habits	0.56	0.46	0.27	0.61	0.49	0.49

The results of the above table indicate that the homogeneity of variances in academic procrastination, differentiated by test stages, has been achieved. The examination of the homogeneity of the variance-covariance matrix also showed that this assumption has been met (P<0.05, F=1.38, Box's M=75.39). The examination of the sphericity assumption by Bartlett's test also showed that there is a moderate and significant correlation among the dimensions of academic procrastination (P<0.001, $\chi 2=37.84$). The results of the Mauchly's sphericity test are presented in the table below.

Table 5. Results of Mauchly's Sphericity Assumption Test in the Model Comparing Academic Procrastination in Experimental Groups

Variable	Mauchly's W	χ^2	df	p	Greenhouse Geisser
Preparing assignments	0.29	32.08	2	0.001	0.59
Readiness for exams	0.45	21.87	2	0.001	0.64
Preparing mid-term reports	0.58	14.76	2	0.001	0.70
Feeling upset from procrastination	0.69	10.01	2	.007	0.76
Desire to change habits	0.43	22.88	2	0.001	0.64

The results of the above table indicate that the sphericity assumption has not been met (P>0.05), and the Greenhouse-Geisser correction should be used to estimate the differences. The results of the multivariate test are presented in the table below.

Table 6. Multivariate Test Results for Examining Between-Group Differences in Academic Procrastination in Experimental Groups

Source	Wilks' Lambda	F	p	Partial Eta^2
Time	0.01	362.01	0.001	0.99
Group	0.89	0.59	0.71	0.11
Group*Time	0.86	0.31	0.97	0.14

The above table shows that Wilks' lambda test is only significant regarding the test stages (P<0.001). The results of the repeated measures ANOVA for the dimensions of academic procrastination are presented in the table below.

[DOI: 10.61838/kman.ijes.7.3.18]

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

Table 7. Examination of Between-Group Differences in Dimensions of Academic Procrastination in Experimental Groups

Variables	Source	SS	df	MS	F	p	Partial Eta²
Preparing assignments	Time	563.09	1.17	480.39	251.95	0.001	0.90
	Group	52.90	1	52.90	2.21	0.15	0.07
	Group*Time	5.00	1.17	4.27	2.24	0.14	0.07
Readiness for exams	Time	736.09	1.29	537.34	99.49	0.001	0.78
	Group	16.04	1	16.04	0.28	0.60	0.01
	Group*Time	0.09	1.29	0.07	0.01	0.95	0.001
Preparing mid-term reports	Time	712.09	1.41	505.98	405.62	0.001	0.94
	Group	3.21	1	3.21	0.08	0.79	0.003
	Group*Time	0.09	1.41	0.06	0.05	0.90	0.002
Feeling upset from procrastination	Time	314.76	1.53	206.10	201.11	0.001	0.88
	Group	4.44	1	4.44	0.32	0.57	0.01
	Group*Time	0.09	1.53	0.06	0.06	0.90	0.002
Desire to change habits	Time	194.42	1.27	152.76	39.61	0.001	0.59
	Group	5.38	1	5.38	0.73	0.40	0.03
	Group*Time	0.16	1.27	0.12	0.03	0.91	0.001

The results of the above table show that there is no significant difference between the two groups of academic buoyancy training and psychological capital training in the dimensions of academic procrastination based on group membership and the interactive effect of test and group membership (P>0.05). The results of the Bonferroni post-hoc test for comparing means based on test stages in the experimental groups are presented in the table below.

Table 8. Bonferroni Post-Hoc Test for Comparing Mean Dimensions of Academic Procrastination According to Test Stages in Experimental Groups

Variable	Group	Pre-test – Post-test		Pre-test – Follow-up		Post-test – Follow-up	
		Mean diff.	p	Mean diff.	p	Mean diff.	p
Preparing assignments	Academic Buoyancy	5.00	0.001	6.07	0.001	1.07	0.30
	Psychological Capital	5.00	0.001	5.07	0.001	0.07	0.99
Readiness for exams	Academic Buoyancy	6.00	0.001	6.00	0.001	0.01	0.99
	Psychological Capital	6.13	0.001	6.13	0.001	0.01	0.99
Preparing mid-term reports	Academic Buoyancy	6.00	0.001	6.01	0.001	0.01	0.99
	Psychological Capital	6.00	0.001	5.87	0.001	-0.13	0.99
Feeling upset from procrastination	Academic Buoyancy	4.00	0.001	3.87	0.001	-0.13	0.99
	Psychological Capital	4.00	0.001	4.00	0.001	0.01	0.99
Desire to change habits	Academic Buoyancy	3.13	0.001	3.13	0.003	0.01	0.99
	Psychological Capital	3.00	0.001	3.20	0.001	0.20	0.99

The results of the above table show that in both experimental groups, the means decreased from pre-test to post-test, and there is a significant difference (P<0.01). However, there is no significant change from post-test to follow-up (P>0.05). Based on this, it can be concluded that there is no significant difference between the effectiveness of academic buoyancy training and psychological capital training on academic procrastination in female students.

4. Discussion

The results showed that academic buoyancy training is effective in reducing academic procrastination among female students. The research by Hosseinpanah and

[DOI: 10.61838/kman.ijes.7.3.18]

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

Kazemian Moghaddam (2021) demonstrated that academic buoyancy has a direct effect on academic procrastination and indirectly affects self-directed learning through procrastination (Hossinpanah & Kazemianmoghadam, 2021). Overall, the findings suggest that self-directed learning is influenced by several factors, including cultural intelligence, academic buoyancy, and academic procrastination.

One aspect emphasized in academic buoyancy training, and considered a fundamental component of academic buoyancy, is autonomy. Familiarity with the concept of educational autonomy, teaching cognitive and metacognitive strategies, study methods, self-monitoring and self-strengthening, time and place management of study, and how to seek help are emphasized in the academic buoyancy training program and can affect the reduction of academic procrastination. It can be said that one of the reasons for academic procrastination among female students could be a lack of autonomy, where teaching autonomy would reduce their academic procrastination (Ragusa et al., 2023; Sparfeldt & Schwabe, 2024). One of the psychological level precursors affecting academic buoyancy is educational autonomy. The concept of autonomy is derived from Bandura's social cognitive theory and is emphasized by it. Having autonomy skills affects learning, decision-making, problem-solving, and resource management (Al-Rawahi & Al-Balushi, 2015; Smit et al., 2017).

Moreover, self-directed learning includes the use of motivational strategies, cognitive strategies, and metacognitive strategies (Martin et al., 2013; Sadat & Setayeshiazhar, 2019). Regarding motivation, self-directed students have an intrinsic interest in learning and report high levels of self-sufficiency. Cognitively, self-directed students optimize their learning environment by selecting learning strategies and structuring their environment. The metacognitive aspect of self-directed students refers to their ability to plan and design learning activities, set goals, and assess their learning at different stages of the learning process (Ahmadi et al., 2020; Kocaj et al., 2018).

Furthermore, the results showed that psychological capital training is effective in reducing academic procrastination among female students. The research by Mohammadpour and Mahmoudian (2020) indicated a significant negative relationship between psychological capital and its components such as self-efficacy, optimism, hope, and resilience with academic procrastination among tenth-grade female students (Mohammadpour & Bita, 2020). The findings of Farajzadeh et al. (2020) suggested that training in psychological capitals utilizing concepts like hope, self-efficacy, resilience, and optimism could serve as an effective education for reducing academic procrastination among student teachers with low academic enthusiasm (Faraj Zadeh et al., 2020).

In explaining the results, it can be said that one of the impacts of psychological capital training on female students' cognitive processes can reduce their academic procrastination. For example, participants' familiarity with how to achieve clear and attainable goals, familiarity with internal, external, general, specific, stable, and unstable attributions, and their role in optimism, discussing ways to increase self-confidence and self-efficacy, using positive feedback techniques, and focusing on the challenge component, how to convert problems into challenges, and increasing the willingness to face them can affect their cognitive processes and can be said that from a cognitive viewpoint, cognitive processes are a factor in procrastination.

Ferrari et al. (2005) acknowledge that academic procrastination is not only influenced by time management but also by clinical interventions and cognitive-behavioral treatments. Proponents of this theory use rational-emotive behavior therapy and interventions such as task management that focus on structuring the environmental experience, teaching adaptive behaviors, increasing personal responsibility, and using social influence to reduce procrastination (Ferrari et al., 2005).

It can be explained that psychological capital can modulate optimism, perfectionism, and unrealistic expectations in female students, thereby reducing their academic procrastination. Hicks and Wu (2015) concluded that individuals with perfectionistic traits could reduce their academic procrastination by developing skills in their psychological capital (Hicks & Wu, 2015). In psychological capital, realistic and flexible optimism is considered. In realistic optimism, an individual evaluates what they cannot achieve and what they can, and in flexible optimism, the individual accepts responsibility but also considers the difficulties and challenges, adjusting their expectations according to the situation. Therefore, this type of optimism, being realistic and flexible, plays a significant role in the individual's self-efficacy and hope (Datu et al., 2018; Gamoran et al., 2021). According to Luthans, realistic optimism plays an important role in enhancing an individual's self-efficacy and affects their performance. On the other hand, optimistic individuals are less

[DOI: 10.61838/kman.ijes.7.3.18]

affected by negative emotions and thus have constructive relationships with their colleagues (Luthans et al., 2014). Seligman describes the characteristics of optimistic individuals in dealing with their failures and successes in four aspects: they rely on general attributions; their attributions are stable; they attribute their successes to their internal abilities; in facing failures, they attribute their failure to specific external and unstable factors (Jensen & Luthans, 2006).

Furthermore, the results showed no significant difference between the effectiveness of academic buoyancy training and psychological capital on academic procrastination among female students. Similiarly, the results of Farajzadeh, Ghazanfari, Cherami, and Sharifi (2020) showed that training in psychological capitals and emotional self-regulation has a significant effect on the psychological flexibility of student teachers with low academic enthusiasm (Faraj Zadeh et al., 2020). Additionally, follow-up test results showed a significant difference between the effectiveness of these two interventions, with psychological capital training having a greater impact on the psychological flexibility of students compared to emotional self-regulation.

In explaining why there is no difference between the effectiveness of academic buoyancy training and psychological capital training on academic procrastination, it should be said that important precursors to preventing academic procrastination include factors such as better perception of the learning situation, self-efficacy, self-regulation, and effective communication with family and peers, and the results have shown that both methods can affect these precursors and improve them. Research in the field of procrastination states that the perception of ability, which includes self-perceptual beliefs related to self-esteem, academic self-image, and self-efficacy, can be a cause of academic procrastination (Popova & Pronenko, 2023).

Psychological capital training reduces all precursors of academic procrastination by focusing on hope, optimism, self-efficacy, and resilience. On the other hand, one of the main concerns in the field of school psychology is understanding how students strive to cope with academic and school problems. The ability that enhances students' adaptability in adverse conditions, discomforts, problems, and stress is academic buoyancy. Academic buoyancy lowers the likelihood of failure and dropout in students and is highly correlated with adaptive behaviors in school (Safriani & Muhid, 2022). This concept is related to students' sense of control and plays a fundamental role in control (Collie et al., 2015). Individuals with higher academic buoyancy have higher academic motivation, are more hopeful about their academic future, and feel higher self-efficacy (Martin et al., 2010).

This study's limitations include its focus on a specific demographic (female high school students) and location, limiting generalizability. The reliance on self-reported data may introduce bias, and the interventions' short duration may not capture long-term effects. Future research should consider broader demographic samples, objective measures of procrastination, and longitudinal designs.

Future research should explore the interventions' effectiveness across diverse educational settings and populations, including male students and different age groups. Investigating the underlying mechanisms of academic buoyancy and psychological capital in reducing procrastination and examining the long-term sustainability of these interventions would provide deeper insights. Additionally, comparative studies involving other psychological constructs could enrich the literature.

The findings suggest incorporating academic buoyancy and psychological capital training into educational curriculums to mitigate academic procrastination. Educators and policymakers should consider these interventions as part of comprehensive student support programs. Tailoring these programs to address the specific needs of diverse student populations could enhance educational outcomes and student well-being.

Ethical Considerations

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

Acknowledgments

We would like to express our sincere gratitude to all individuals who contributed to the completion of this study.

Authors' Contributions

All authors equally contributed to this article.

Conflict of Interest

There was no conflict of interest among the authors.

References

Afshari, M., Khayatan, F., & Yousefi, Z. (2022). A Comparison of the Effectiveness of the Reality-Based Acceptance and Commitment Therapy (RACT) Package and Cognitive-Behavioral Therapy (CBT) in Improving Procrastination and Responsibility in Adolescent Girls. *Journal of Applied Family*

[DOI: 10.61838/kman.ijes.7.3.18]

E-ISSN: 2645-3460

Therapy, *3*(2), 1-19. https://doi.org/10.22034/AFTJ.2022.313663.1246

Ahmadi, h., Jadidi, H., & khalaatbari, j. (2020). Desogmomg a Model of Academic Engagement Based on Academic Optimism and Achievement Motivation through Mediating of School Wellbeing and Academic Bouncy. *Journal of Modern Psychological Researches*, *14*(56), 1-23. https://psychologyj.tabrizu.ac.ir/article_10316_3c07d0264281a84984826514047ef575.pdf

Al-Rawahi, N. M., & Al-Balushi, S. M. (2015). The Effect of Reflective Science Journal Writing on Students' Self-Regulated Learning Strategies. *International journal of environmental and science education*, *10*(3), 367-379. https://eric.ed.gov/?id=EJ1069260

Collie, R. J., Martin, A. J., Malmberg, L.-E., Hall, J., & Ginns, P. (2015). Academic buoyancy, student's achievement, and the linking role of control: A cross-lagged analysis of high school students. *British Journal of Educational Psychology*, *85*(1), 113-130. https://doi.org/10.1111/bjep.12066

Datu, J. A. D., King, R. B., & Valdez, J. P. M. (2018). Psychological capital bolsters motivation, engagement, and achievement: Cross-sectional and longitudinal studies. *The Journal of Positive Psychology*, *13*(3), 260-270. https://doi.org/10.1080/17439760.2016.1257056

Datu, J. A. D., & Yang, W. (2021). Academic buoyancy, academic motivation, and academic achievement among filipino high school students. *Current Psychology*, *40*(8), 3958-3965. https://doi.org/10.1007/s12144-019-00358-y

Faraj Zadeh, P., Ghazanfari, A., Charami, M., & Sharifi, T. (2020). A Comparison on the Effectiveness of Training Psychological Capitals and Emotional Self-Regulation on the Psychological flexibility of Teacher Students with Low Academic Eagerness. *medical journal of mashhad university of medical sciences*, *63*(Special Psychology), 1-15. https://doi.org/10.22038/mjms.2020.15645

Farhadi, A., saki, K., Ghadampour, E., khalili geshnigani, Z., & Chehri, P. (2016). Predictions dimensions of academic engagement based capital components psychological [Original Research]. *Bimonthly of Education Strategies in Medical Sciences*, *9*(2), 127-133. http://edcbmj.ir/article-1-969-en.html

Ferrari, J. R., O'Callaghan, J., & Newbegin, I. (2005). Prevalence of procrastination in the United States, United Kingdom, and Australia: arousal and avoidance delays among adults. *North American Journal of Psychology*, *7*(1). https://www.researchgate.net/profile/Joseph-Ferrari/publication/276354186_Prevalence_of_Procrastination_in_the_United_States_United_Kingdom_and_Australia_Arousal_and_Avoidance_Delays_among_Adults/links/5557a6c108aeaaff3bf771c5/Prevalence-of-Procrastination-in-the-United-States-United-Kingdom-and-Australia-Arousal-and-Avoidance-Delays-among-Adults.pdf

Fouladi, A., Kajbaf, M. B., & Ghmrani, A. (2018). Effectiveness of Academic Buoyancy Training On Academic Success and Academic Self-Efficacy of Girl Students. *JOURNAL OF INSTRUCTION AND EVALUATION*, *11*(42), 37-53. https://jinev.tabriz.iau.ir/article_543431_4b6062dea00aaa5b7fbc04542157f846.pdf

Gamoran, A., Miller, H. K., Fiel, J. E., & Valentine, J. L. (2021). Social Capital and Student Achievement: An Intervention-Based Test of Theory. *Sociology of Education*, *94*(4), 294-315. https://doi.org/10.1177/00380407211040261

Ghodrati Isfahani, Z., & Moradi, A. (2020). Effectiveness of Psychological Capital Training and Behavioral Activation Therapy on the Hope of Isfahan Gril Students in Dormetory. *Woman in Development & Politics*, *18*(2), 293-312. https://doi.org/10.22059/jwdp.2020.296246.1007783

Hicks, R. E., & Wu, F. M. Y. (2015). Psychological Capital as Mediator between Adaptive Perfectionism and Academic Procrastination. *GSTF Journal of Psychology (JPsych)*, *2*(1), 6. https://doi.org/10.7603/s40790-015-0006-y

Hossinpanah, Z., & Kazemianmoghadam, K. (2021). The causal relationship between cultural intelligence and academic vitality with self-directed learning through academic procrastination. *Psychological Achievements*, *28*(1), 177-196. https://doi.org/10.22055/psy.2021.33118.2527

Javan Mojarad, A., Aliakbar, S., Zaynali, H. P., & Abbas, A. (2022). The efficacy of forgiveness therapy in the happiness and quality of academic life of students. *Journal of Educational Psychology Studies*, *19*(45), 28-41. https://www.magiran.com/paper/2483966

Jensen, S. M., & Luthans, F. (2006). Relationship between Entrepreneurs' Psychological Capital and Their Authentic Leadership. *Journal of Managerial Issues*, *18*(2), 254-273. http://www.jstor.org/stable/40604537

Kandemir, M., & Palancı, M. (2014). Academic Functional Procrastination: Validity and Reliability Study. *Procedia - Social and Behavioral Sciences*, *152*, 194-198. https://doi.org/10.1016/j.sbspro.2014.09.180

Kocaj, A., Kuhl, P., Jansen, M., Pant, H. A., & Stanat, P. (2018). Educational placement and achievement motivation of students with special educational needs. *Contemporary Educational Psychology*, *55*, 63-83. https://doi.org/10.1016/j.cedpsych.2018.09.004

Luthans, B. C., Luthans, K. W., & Avey, J. B. (2014). Building the Leaders of Tomorrow:The Development of Academic Psychological Capital. *Journal of Leadership & Organizational Studies*, *21*(2), 191-199. https://doi.org/10.1177/1548051813517003

Ma, X., Li, Z., & Lu, F. (2023). The influence of stressful life events on procrastination among college students: multiple mediating roles of stress beliefs and core self-evaluations [Original Research]. *Frontiers in psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1104057

Martin, A. J., Colmar, S. H., Davey, L. A., & Marsh, H. W. (2010). Longitudinal modelling of academic buoyancy and motivation: Do the 5Cs hold up over time? *British Journal of Educational Psychology*, *80*(3), 473-496. https://doi.org/10.1348/000709910X486376

Martin, A. J., Ginns, P., Brackett, M. A., Malmberg, L.-E., & Hall, J. (2013). Academic buoyancy and psychological risk: Exploring reciprocal relationships. *Learning and Individual Differences*, *27*, 128-133. https://doi.org/10.1016/j.lindif.2013.06.006

Martin, A. J., & Marsh, H. W. (2008). Academic buoyancy: Towards an understanding of students' everyday academic resilience. *Journal of School Psychology*, *46*(1), 53-83. https://doi.org/10.1016/j.jsp.2007.01.002

Martínez, I. M., Youssef-Morgan, C. M., Chambel, M. J., & Marques-Pinto, A. (2019). Antecedents of academic performance of university students: academic engagement and psychological capital resources. *Educational Psychology*, *39*(8), 1047-1067. https://doi.org/10.1080/01443410.2019.1623382

Mohammadi, N., Darbani, S. A., & Parsakia, K. (2021). The role of psychological capital and career success in marital adjustment.

[DOI: 10.61838/kman.ijes.7.3.18]

International Journal of Innovation Management and Organizational Behavior (IJIMOB), *1*(3), 66-78. https://journals.kmanpub.com/index.php/ijimob/article/view/318

Mohammadpour, K., & Bita, M. (2020). Prediction of academic procrastination based on psychological capital of 10th grade students of Babol city, . *Journal of Applied Research in Management and Human Sciences*, *2*(3), 58-66. https://www.magiran.com/paper/2401925

Muhonen, H., Pakarinen, E., Poikkeus, A.-M., Lerkkanen, M.-K., & Rasku-Puttonen, H. (2018). Quality of educational dialogue and association with students' academic performance. *Learning and Instruction*, *55*, 67-79. https://doi.org/10.1016/j.learninstruc.2017.09.007

Popova, D., & Pronenko, E. (2023). Academic Procrastination in the Context of Meaning Structures of Personality: Why Is It Important for the Formation of Sustainable Behavior. *E3s Web of Conferences*. https://doi.org/10.1051/e3sconf/202337605058

Putwain, D. W., & Daly, A. L. (2013). Do clusters of test anxiety and academic buoyancy differentially predict academic performance? *Learning and Individual Differences*, *27*, 157-162. https://doi.org/10.1016/j.lindif.2013.07.010

Ragusa, A., González-Bernal, J., Trigueros, R., Caggiano, V., Navarro, N., Minguez-Minguez, L. A., Obregón, A. I., & Fernandez-Ortega, C. (2023). Effects of academic self-regulation on procrastination, academic stress and anxiety, resilience and academic performance in a sample of Spanish secondary school students [Original Research]. *Frontiers in psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1073529

Rezaei, Z., Vahabi, A., Karimianpour, G., Latifi, A., Ramezani, S., Nouri, E., & Moradi, M. (2018). Status of Psychological Capital of Students in Kurdistan University of Medical Sciences. *Health Education and Health Promotion*. https://doi.org/10.29252/hehp.6.2.53

Saadati, N., & Parsakia, K. (2023). The Predictive Role of Parents' Marital Relationship Quality on The Adolescents' Psychological Capital. *Journal of Adolescent and Youth Psychological Studies (JAYPS)*, *4*(8), 139-146. https://doi.org/10.61838/kman.jayps.4.8.16

Sadat, S., & Setayeshiazhar, M. (2019). The Mediation Roles of Academic Buoyancy and Humor in relationship between Academic Emotions and Academic Engagement [Original Research]. *Bimonthly of Education Strategies in Medical Sciences*, *12*(4), 26-40. http://edcbmj.ir/article-1-1806-en.html

Safriani, Y., & Muhid, A. (2022). Psychological Capital, Academic Buoyancy, Academic Major Satisfaction, and Academic Adjustment During the Pandemic. *Indigenous Jurnal Ilmiah Psikologi*. https://doi.org/10.23917/indigenous.v7i2.19010

Sheikh Zeineddin, H., Farrokhi, N., & Abbaspoor Azar, Z. (2018). Mediating role of psychological capital in the relationship between personality features with marital adjustment in students. *Quarterly of Applied psychology*, *12*(3), 439-462. https://apsy.sbu.ac.ir/index.php/test/article/download/5482/article_94402_22db0455f155a4ee2c41e9bcc768a39d.pdf

Smit, K., de Brabander, C. J., Boekaerts, M., & Martens, R. L. (2017). The self-regulation of motivation: Motivational strategies as mediator between motivational beliefs and engagement for learning. *International Journal of Educational Research*, *82*, 124-134. https://doi.org/10.1016/j.ijer.2017.01.006

Somayeh, H., & Neda, S. (2020). Causal Explanation of Academic Engagement Based on Academic Support and Students' Psychological Capital. *Studies in Learning & Instruction*, *12*(1), 30-52. https://www.magiran.com/paper/2172227

Sparfeldt, J. R., & Schwabe, S. (2024). Academic procrastination mediates the relation between conscientiousness and academic achievement. *Personality and individual differences*, *218*, 112466. https://doi.org/10.1016/j.paid.2023.112466

Weißenfels, M., Hoffmann, D., Dörrenbächer-Ulrich, L., & Perels, F. (2023). Linking academic buoyancy and math achievement in secondary school students: Does academic self-efficacy play a role? *Current Psychology*, *42*(27), 23422-23436.

Ye, Y., & Yang, P. (2022). Effect of College Students' Academic Stress on Anxiety Under the Background of the Normalization of COVID-19 Pandemic: The Mediating and Moderating Effects of Psychological Capital. *Frontiers in psychology*. https://doi.org/10.3389/fpsyg.2022.880179

Yu, J., Wang, Y., Tang, X., Wu, Y., Tang, X., & Huang, J. (2021). Impact of Family Cohesion and Adaptability on Academic Burnout of Chinese College Students: Serial Mediation of Peer Support and Positive Psychological Capital. *Frontiers in psychology*. https://doi.org/10.3389/fpsyg.2021.767616

Zainallypour, H., Zareei, E., & Zandineya, Z. (2009). Study of General and Academic Self-efficacy of Students and its Relationship with Academic Achievement. *Journal of Educational Psychology Studies*, *6*(9), 13. https://www.magiran.com/paper/821663

[DOI: 10.61838/kman.ijes.7.3.18]