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The Effectiveness of Academic Life Skills and Self-Regulation of Motivation Training on Academic Motivation of Senior High School Female Students

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ABSTRACT

In today's educational world, the importance of academic life skills and self-regulated motivation for students, especially in the senior high school, has been noted repeatedly. Thus, the purpose of this research was to investigate the effectiveness of teaching life skills and self-regulation of motivation on the academic motivation of female students of the senior high schools. This research is a quantitative applied study adopting a quasi-experimental design, with a pre-test/post-test and a control group. The statistical population included 31180 female students of the senior of high schools in Tabriz in the academic year of 2021-2022. From this population, 90 students were selected by multi-stage cluster random sampling method and were randomly divided into three groups with 30 participants. The control group received its traditional instruction while the first and second experimental groups received educational life skills and self-regulated motivation interventions respectively for eight sessions of two hours. The instruments included the academic motivation questionnaire (Vallerand et al., 1992). For data analysis, in addition to descriptive statistics, Shapiro-Wilk test, MANOVA, regression slope homogeneity test, Box's M Test, Leven test, MANCOVA, and Bonferroni post hoc test were used. The findings showed that the educational life skills and self-regulation of motivation training programs had a positive effect on the academic motivation of female students of the senior high schools. Also, motivational self-regulation training has a higher effectiveness in the academic motivation of the participants than teaching life skills. According to the results, it is concluded that the integration of educational self-regulation motivation and academic life skills training programs in the school environment can have positive effects on students. Schools and educational centers should look for ways to incorporate these skills into their curricula, so that students can develop the skills to manage their motivation and behaviors in a supportive and interactive environment. Also, it is important that teachers and trainers receive the necessary training to be able to effectively impart these skills to students.

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Introduction

Academic motivation plays a vital role in fostering motivation, leadership, empowerment, and sustainability of students' learning activities and increases students' interest in learning and is necessary to meet their needs (Dalanbayar et al., 2024). Academic motivation plays an important role in activating and guiding students to learn and creates enthusiasm for acquiring new knowledge and skills (El-Sayed et al., 2024). Self-determination theory believes that students' academic progress depends on self-regulation abilities and increasing learning capacity. These abilities, as the foundations of progress, facilitate the learning path. Academic motivation is divided into two internal and external categories (Klein, 2019): Intrinsic motivation comes from an innate interest in learning and motivates a person to acquire knowledge for the sake of learning itself, not just for the results (Atik & Çelik, 2021; Bozanoğlu, 2004) while extrinsic motivation is enhanced by factors such as grades and incentives and helps people seek rewards or avoid punishments to achieve their academic goals (Atik, & Çelik, 2021; Bureau et al., 2022).

Academic motivation, as a key variable in education, plays an important role in the performance and mental health of students and refers to their desire and interest in learning (Hulleman et al., 2016). Academic motivation is divided into three types: deep, superficial, and progress. Deep motivation comes from an interest in understanding subjects, superficial motivation is about meeting academic requirements, and progress motivation is about seeking high grades and praise. All three types are important for academic success (Wang et al., 2024). The quality of academic motivation has a great impact on students' efforts to succeed and increases their interest and persistence to learn more deeply (Collins, 2009). Students with high academic motivation often have more initiative and effort in learning, which helps them achieve better academic results (Hughes, 2012).

Teaching life skills and self-regulation can strengthen academic motivation and help students achieve more (Lohbeck & Moschner, 2022; Mirhosseini et al., 2018). Studies show that self-regulated learning strategies and academic motivation are related (Demirdağ, 2021). Academic life skills, which include theoretical and practical knowledge, help students achieve academic success. These skills include planning time and using resources which help to store and process information (Feraco et al., 2023). Teaching life skills has a positive effect on students' motivation and self-confidence and helps them achieve academic success (Günaydın, 2022). Also, teaching academic life skills helps to increase motivation and improve students' academic performance and has positive results in their learning (Cho et al., 2021). Researchers believe that failure in the use of motivational self-regulation strategies is the main reason for academic procrastination (Ragusa et al., 2023). Research shows that self-regulated learning programs can help increase motivation and improve learning abilities, thereby improving academic performance (Trotter et al., 2023).

According to the above, this research examined the effect of teaching life skills and self-regulation on students' academic motivation, and its importance is in improving their academic performance as well as their personal and social development. Since there are not enough studies in this field, this research sought to fill this gap and provide a better understanding of the role of these skills in enhancing academic motivation. The results of this research also helps teachers and educational administrators improve their curricula and prepare students for success. The general aim of the research was to "investigate the effectiveness of teaching academic life skills and self-regulation of motivation on the academic motivation of female students of the senior high school". In order to achieve this goal, the following research question wasn posed:

Is teaching of academic life skills and self-regulation of motivation effective on the academic motivation of female students of the senior high school?

Method

Design

The current study was applied in terms of purpose (Sheykholeslami et al., 2023) and in terms of how to collect data, an experiment, it was of quasi-experimental type, with a pre-test/post-test and a control group (Ghazizadeh Fard et al., 2023) adopting qualitative approach for data analysis and interpretation. In Figure 1, the design of the study is presented.

Figure 1
The Study Design

RG_{R1}	T_1	X_1	T_2
RG_{R2}	T_1	X_2	T_2
RG_C	T_1	-	T_2

In order to conduct the research, the participants were randomly selected. Two groups were randomly selected as the experimental groups, one of them was exposed to the academic life skills training while the second group received the training of motivational self-regulation

strategies. The control group was not under special treatment conditions and received conventional instruction. In this experiment, the academic motivation of female students in the senior high school in the experimental and control groups was measured twice. The first measurement was carried out through a pre-test, before teaching academic life skills and motivational self-regulation strategies while the second measurement was done through the post-test after the treatment sessions. In the interval between the pre-test and post-test, based on the academic life skills training and motivational self-regulation strategies training protocols (Tables 1 and 2), the participants in each experimental group were exposed to their specified intervention program for eight weeks, each session lasting for two hours.

Participants

The population of this study included all female students of the senior high schools in the five educational districts of Tabriz. The total number of students was 31180 who were studying in the academic year of 2021-2022. From this population, 90 students, who were studying in the 10th, 11th, and 12th grades of the theoretical branches of mathematics, humanities, and experimental sciences were selected using a multi-stage cluster random method (Mehraban et al., 2022) and were randomly divided into three groups of 30. To do so, first, an educational district was randomly selected from among the five districts, then a high school was randomly selected from the selected district, and finally, from the selected high school, three classes containing 90 students were considered as the three groups. In estimating the sample size, Kerlinger's recommendations (Rowell, 1996) were used which suggests a random selection of thirty people as a sample size to guarantee the external validity of research findings.

Instruments

Academic Motivation Questionnaire: This questionnaire is based on self-determination theory (Deci & Ryan, 2013) which was deigned by Vallerand et al. (1992). It has 28 questions with 4 options based on the Likert scale (scoring from 1: I do not agree at all to 7: I completely agree). The reliability of this scale using the Cronbach's alpha for the subscales of the questionnaire has been reported between .83 and .86. Also, the reliability coefficients obtained from the retest method was reported between .71 and .83 within one month. The results of the confirmatory factor analysis also confirmed the 7-factor structure of the academic motivation scale and indicate the construct validity of this scale (Garavand et al., 2017) implemented on 838 participants in Iran. In order to finalize the scale, the internal correlation coefficients and the retest test were also calculated, and in each of the subscales, the coefficients were higher than .77, which indicated the reliability of the scale (Bagheri et al., 2003).

Educational Life Skills Training Package

In this research, for teaching academic life skills, a training package compiled by Ghorbani (2019) was used. In Table 1, the summary of academic life skills training sessions is presented.

Table 1
Summary of Academic Life Skills Training Sessions

Session	Content
Prelimainary Session	Getting to know the students, establishing initial communication, conducting the pre-test, explaining the intervention program
First Session	Introducing the infinite energy of inner motivations
Second Session	Cultivating positive self-concept
Third Session	Correctly justifying the consequences
Fourth Session	Goal setting and planning the free study
Fifth Session	Practicing academic study (reading for the exam) and critical study (analytical)
Sixth Session	Attending the class effectively, familiarizing with better comprehension skills
Seventh Session	Improving Memory methods
Eight Session	Getting exam awareness and coping with exam anxiety

Motivation Self-Regulation Strategies Training Package

In this research, to teach motivation self-regulation strategies, a training package was used based on Bandura's (2002) perspective. Table 2 presents the summary of academic life skills training sessions.

Table 2
Summary of Motivational Self-Regulation Strategies Training Sessions

Session	Content
Prelimainary Session	Getting to know the students, establishing initial communication, conducting the pre-test, explaining the intervention program
First Session	Setting goals and determining academic goals and academic planning
Second Session	Self-management and self-evaluation
Third Session	Self-regulation
Fourth Session	Self-correction and self-improvement
Fifth Session	Positive self-talk
Sixth Session	Decision-making skills
Seventh Session	Time management and stress management
Eight Session	Self-organization of the classroom environment

Procedure

Before conducting the research, the purpose of the research was explained to the participant and they were assured the researchers adhere to the principle of confidentiality. Also, informed participation consent was obtained from the participants. In the pre-test phase, the academic motivation questionnaire was administered to them, and then, both experimental groups were exposed to their intervention programs. At the end, in the post-test stage, all the groups were administered the questionnaire again. For data analysis, in addition to descriptive statistics, Shapiro-Wilk test, multivariate analysis of variance (MANOVA), regression slope homogeneity test, Mbox test, Leven test, multivariate covariance analysis (MANCOVA) test, and Bonferroni post hoc test were used.

Findings

The experimental and control groups were tested twice in the pre-test and post-test stages. In Table 3, descriptive statistics indicators of the research variables for each group is presented in for the pre-test and post-test stages.

Table 3
Descriptive Statistics Indicators of the Research Variables By Groups In Pre-Test and Post-Test Stages

Variable	Group	Phase	Mean	NO	SD
Academic Motivation	First Experimental Academic Life Skills	Pre-test	129.62	30	4.58
		Post-test	152.46	30	4.36
	Second Experimental Motivation Self-Regulation	Pre-test	130.08	30	4.58
		Post-test	170.93	30	4.29
	Control	Pre-test	129.54	30	4.68
		Post-test	129.61	30	4.57

As can be seen in the Table, the means of the experimental and control groups in the pre-test phase are almost the same while in the post-test phase, the means of the experimental groups have increased. However, in the control group, minor changes are observed in the pre-test and post-test stages.

In order to check the normality of the distribution of the research variables, the Shapiro-Wilk test was used. Table 4 shows the results of this test.

Table 4
Shapiro-Wilk Test Results Regarding the Normality of Data Distribution

Group	Phase	Statistic	Sig
First Experimental	Pre-	.954	.337
Academic Life Skills Training	Post-	.919	.054
Second Experimental	Pre-	.950	.220
Motivation Self-Regulation	Post-	.95	.215
Control	Pre-	.922	.051
	Post-	.923	.053

As can be seen, Shapiro-Wilk test values related to research variables in both pre-test and post-test stages are greater than .05. Therefore, it is concluded that the research variables had a normal distribution, and thus, parametric tests can be used to test research hypotheses.

Multivariate Analysis of Variance (MANOVA) test was used to test the hypothesis of independence of the pre-test variables. In the current research, the independent variable has two levels of academic life skills and self-regulation strategies of motivation interventions and the dependent variable was academic motivation. Thus, to determine whether there was any significant difference between the experimental and control groups in the pre-test stage, the multivariate analysis of variance test was used. Table 5 shows the results of multivariate analysis of variance.

Table 5
Multivariate Analysis of Variance Test Regarding the Similarity of Means in the Pre-Test

Source of Changes	Sum of Squares	DF	Mean of Squares	F	Sig
Constant	5.057	2	2.538	.119	.888
Error	1854.324	87	21.314		

The results showed that the F value is insignificant at the .05 indicating that there was no significant difference between the experimental and control groups in terms of the dependent variable, that is; theacademic motivation, before the implementation of the independent variables. Therefore, the assumption of independence of the research variables is maintained.

To check the homogeneity of the regression slope, the interaction of the independent variable with the covariate variables was investigated. In Table 6, the result of the homogeneity test of the slope of the regression line between the pre- and the post-tests of the academic motivation variable in the three groups is presented.

Table 6
Comparison of the Slope of the Regression Line of Research Variables

Source Of Changes	Sum of Squares	DF	Mean of Squares	F	Sig
Group/Pre-Test	34.506	2	17.253	2.541	.085

According to the Table, the significance levels of the interaction between the independent variable (group) and the covariate variable (pre-test) are greater than .05 and are not significant. Therefore, with confidence, we can state that the condition of homogeneity of the regression slope is established to perform covariance analysis.

Box's M Test was used to check the hypothesis of homogeneity of the variance matrix and covariances of the dependent variable in the experimental and control groups. (Table 7)

Table 7
Examining the Assumption of Homogeneity of Variance Matrix and Covariances

Box's M Statistic	DF1	DF2	F	Sig
1.926	6	18824.769	.499	.609

According to Table 7, the significance level is greater than .05. Therefore, the null hypothesis is confirmed and the equality of the observed covariance matrices of the

research variable (academic motivation) among the groups is confirmed.

One of the assumptions of using covariance analysis test is the equality of the variances. Hence, Leven's test was used to check the equality of the distribution of the variances whose results are illustrated in Table 8.

Table 8

Leven's Test for the Equality of the Error Variances of the Research Variables

Variable	F	DF1	DF2	Sig
Pre-test	.008	1	87	.992
Post-test	.060	1	87	.942

Considering the results indicating that the significance level values are greater than .05, it is concluded that the research data have the same variance, and thus, the analysis of covariance test can be used.

Multivariate Covariance Analysis (MANCOVA) test was used to check the effectiveness of academic life skills and motivational self-regulation strategies treatment sessions on academic motivation. (Table 9)

Table 9

Results of Multivariate Analysis of Covariance (MANCOVA)

	Coefficient	F	DF	Error DF	Sig	Effect Size
Wilks' Lambda	.31	201.811	4	172	.000	.824

Based on the results of Wilks's lambda multivariate test in Table 9, there is a significant difference between the experimental and control groups in the dependent variable (academic motivation). The value of F in Wilks's lambda test is equal to 201.811 and its significance level is less than .001. In fact, the results of Wilks's lambda test show that there is a significant difference in the dependent variable of academic motivation in at least one of the experimental and control groups. Based on this, Bonferroni's post hoc test was used to determine which of the experimental and control groups showed a significant difference. The results of this test are reported in Table 10.

Table 10

The Results of Bonferroni's Post Hoc Test to Determine the Group Differences

Dependent Variable	Groups		Mean Differences	SEM	Sig
Academic Motivation	Experimental 1	Experimental 2	-18.467	1.139	.000
		Control	22.858	1.139	.000
	Experimental 2	Experimental 1	18.467	1.139	.000
		Control	41.325	1.139	.000
	Control	Experimental 1	-22.858	1.139	.000
		Experimental 2	-41.325	1.139	.000

The mean difference in the academic motivation between the first and the second experimental groups equals to -18.467 with a significance level equaled to zero. This difference is significant and indicates a higher academic motivation in the second experiment group. The difference between the mean academic motivation of the first experiment group and the control group is -22.858, with a standard error of 1.139 and a significance level value of zero, indicating a higher academic motivation in the first experiment group. The difference between the average academic motivation of the second experiment group and the control group is 41.325, with a standard error of 1.139 and a significance level value of zero, portraying a higher academic motivation in the second experiment group. In general, the results show that there are significant differences in academic motivation between the groups. These results show the positive effect of the treatments on students' academic

motivation. Also, the mean of the second experimental group (170.93) is higher than the first experimental group (152.46). In fact, the motivation self-regulation strategy treatment is more effective in increasing academic motivation than the academic life skills method. Also, the comparison of the means of the two experimental groups with that of the control group shows that there is a significant difference between the experimental and the control groups and it can be claimed that the academic life skills and self-regulation of motivation treatments have an effect on increasing academic motivation. The comparison of the means also shows that the treatments used in the experimental groups have significantly influenced the increase of students' academic motivation.

Discussion

The aim of the present study was to investigate the effectiveness of life skills and self-regulation of motivation training on the academic motivation of female students in the senior high schools in Tabriz. This findings showed that the academic life skills and self-regulation of motivation training programs were effective on the academic motivation of the participants. Also, the mean of the second experiment group, after receiving the motivation self-regulation training program, had a significant difference compared to the first experiment group in terms of increasing academic motivation. In other words, the motivational self-regulation training program had a more meaningful effect on increasing the academic motivation. The results of the present study are in line with those of Chiu (2022), Ito and Umemoto (2022), Günaydın (2022), and Demirdağ (2021).

In explaining the results, it can be stated that self-regulation skills help individuals increase their intrinsic motivation by focusing on their abilities and evaluating them compared to others (Dehghan Manshadi et al., 2023). Academic life skills training helps people to deal with others, society, and their culture in a consistent and positive way and maintain their physical and mental health (Eskandari, 2019). Moreover, academic life skills training helps increase cognitive abilities and deal with everyday challenges, and by increasing psychological capacity, it leads to maintaining mental and behavioral health as well as positive and efficient problem solving (Andriyani & Apriantoro, 2023). People who are emotionally capable can better face life's challenges and have higher mental health. They identify and express their emotions, cope better with negative experiences and are more adaptive in relationship with others and their environment (Mahbobi et al., 2016).

Strengthening self-efficacy beliefs in students can help increase their motivation for self-regulated learning. These beliefs give them the confidence that they can achieve academic success by using self-regulation strategies (Zimmerman, 2017). Teaching academic life skills such as time management, goal setting, and communication skills can significantly affect students' academic motivation. These skills not only help improve academic performance, but also lead to strengthening students' self-confidence and self-efficacy, which in turn can increase their intrinsic motivation to learn and succeed (Ahmadi et al., 2023; Sameriyar et al., 2020). Therefore, understanding and applying life skills and self-regulation in the field of education improve physical and mental health and strengthen students' motivation. Teaching these skills in educational environments can significantly affect students' academic motivation as well as personal and social development.

Conclusion

Students' self-regulation abilities are manifested in three key dimensions: “adjusting information organizing style” for orderly and efficient processing of information; “adjusting the course of learning” by setting realistic goals; and "self-regulation" which includes strategies for maintaining and increasing motivation and effort. These processes help strengthen learning skills and develop students' independence and self-sufficiency, which lays the foundation for their future success (Wolters & Brady, 2021). Teaching self-regulation skills helps students deal with academic challenges in a more effective way and achieve more "academic success". These abilities not only contribute to "independent learning", but also strengthen students' "independence", which provides a platform for their personal and social "growth and excellence" (Veyskarami et al., 2021).

Self-regulation theory is based on the fact that students can control and guide the learning process by using their behavioral, metacognitive, and motivational beliefs. This theory emphasizes that students should be able to effectively process information, manage the learning environment and resources, and monitor their learning process. Using cognitive strategies such as summarizing and organizing, time management, and metacognitive strategies such as planning and evaluation help students to actively participate in their learning process. This approach leads to increased self-efficacy and motivation and helps students to face educational challenges in a more effective way and develop the skills necessary for success in their personal and professional life in the future (De Bruin et al., 2020).

Self-regulation is the ability to control behaviors based on personal goals and includes regulating emotions and thoughts in different situations. This skill is important in learning and academic performance because it helps students manage their resources, maintain their motivation, and face academic challenges in a constructive way (Lemos, 1999). Behavioral approaches and classroom management, along with appropriate teaching styles and an effective relationship with the teacher, can have a great impact on students' academic motivation. Participatory behavior of teachers and teaching of academic life skills such as motivational self-regulation, help increase vitality, resilience, and academic engagement of students and prepare them to face challenges more effectively, which ultimately leads to their academic progress (Maleki et al., 2023; Pakdaman Savoji et al., 2013). Educational methods such as role playing and brainstorming are also effective in developing these skills (Bagheri Hosein Abadi & Yoosefi, 2023).

This research, like other scientific studies, faced some limitations that should be carefully considered in the interpretation of the results. First, the data were obtained from the female students of senior high schools in Tabriz, which may limit the generalizability of the findings. Second, the data on academic motivation were collected through self-report questionnaires, which may be affected by personal biases and human errors. Using complementary data collection methods, such as in-depth interviews or direct observations, can help increase the accuracy and precision of the findings. Third, several factors such as families' socioeconomic status and students' personality characteristics which may affect academic motivation were not controlled in this study. As a result, it is recommended that in future research, these factors are investigated as intervening variables to gain a deeper understanding of the complexities affecting academic motivation.

According to the results, it is recommended that future research investigate such variables as the socioeconomic status of families, available behavioral patterns, environmental culture, and parenting styles, because these factors can have a significant impact on the development of self-regulation skills and life skills. Also, longitudinal studies that examine the long-term effects of these skills at different levels of education and taking into account other effective factors on academic achievement can provide us with a better understanding of how these skills affect students' academic performance.

In addition to the research suggestions, practical suggestions can also be added so that the research is directly effective in improving the educational and academic conditions of the students. Curricula should be designed to include teaching self-regulation and life skills, including hands-on workshops, group activities, and problem-solving-based projects to place students in real-life situations. Teachers should be trained in the areas of educational psychology and life skills teaching methods so that they can effectively integrate these skills into their classrooms. Parents play an important role in the development of their children's life skills and self-regulation, and educational programs should include sessions that involve parents in their children's educational process and provide them with ways to support their children's learning at home. Schools should develop systems to track and continuously assess student progress in life skills and self-regulation, which will help identify students' educational needs and provide appropriate support. These practical suggestions provide schools, teachers, parents, and researchers with ideas for implementing research into practice and can help improve the quality of education.

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Conflicts of Interest

No conflicts of interst is declared.

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