Razavi Int J Med. 2021; 9(3):e1011 doi:10.30483/rijm.2021.254156.1011

Published online 2021 September **Original Article**

Investigation of the Mediating Role of Academic Self-Efficacy in the Relationship of Social Adjustment with Academic Engagement and Achievement Goals Among High School Students

Mahboob Mohammadi Komar Sofla[1], Saeed Jahanian[2*]

[1]Department of Psychology, Central Tehran Branch, Islamic Azad University, Tehran, Iran
[2]Department of Psychology, South Tehran Branch, Islamic Azad University, Tehran, Iran

[*] ***Corresponding authors:*** Saeed Jahanian, Assistant Professor, Department of Psychology, SouthTehran Branch, Islamic Azad University, Tehran, Iran. Email : s.jahanian@yahoo.com

Received 2020 December 14; **Accepted** 2021 January 30.

Abstract

Background and Objectives: One of the important goals of the educational system is to facilitate growth in all aspects and train healthy and efficient people. In this regard, the present study aimed to investigate the mediating role of academic self-efficacy in the relationship of social adjustment with academic engagement and achievement goals among high school students.
Materials and Methods: This descriptive correlational research was performed based on a path analysis-based design. The statistical population included all male high school students in Tehran during 2017-18, from whom 546 students were randomly selected by multi-stage cluster sampling. The required data were collected using Morgan-Jinks Student Efficacy Scale, Zarang Educational Conflict Questionnaire, Sinha and Singh's Adjustment Inventory, and Elliott and Church's Achievement Goal Questionnaire.
Results: Based on the results, the coefficients of academic engagement (0.50) and achievement goals (0.30) were significant in predicting self-efficacy. In addition, the self-efficacy coefficient is significant in adjustment prediction (0.82). The direct effects of academic engagement (0.06) and achievement goals (-0.29) on predicting adjustment were insignificant and significant, respectively. Based on this data, academic self-efficacy mediates the relationship between academic engagement and adjustment. Moreover, it was found that academic self-efficacy had a mediating role in the relationship between achievement goals and adjustment.
Conclusion: The findings imply that educational approaches, while emphasizing the mastery of the students over prerequisites and successful experiences, should also consider academic self-efficacy as a fundamental principle and rely on persuasion and explanation in interactions.

Keywords: Academic engagement, Academic self-efficacy, Achievement goals, Social adjustment

1. Introduction

One of the important goals of the educational system is to facilitate growth in all aspects and train healthy and efficient people who can correctly play their individual and social roles in life. Studies in this field have received more and more attention from education specialists during the last three decades (1). It is believed that psychological variables are among the factors that affect academic achievement (2).

This concept was first proposed in the framework of Bandura's social cognitive theory, based on which human progress depends on the interactions of personal behavior, environmental conditions, and personal factors (e.g., thoughts and beliefs). In the late 1970s, Bandura introduced the concept of self-efficacy to fill a gap in his theory (3). This component influences the choice of tasks, effort, perseverance, flexibility, and success of individuals (4). People with self-efficacy attribute their failure to their inadequate effort rather than limited ability (5).

In recent years, self-efficacy has been considered by researchers in various fields, including education. Accordingly, as Ferla et al. (6) believe, educational self-efficacy is the most important factor in explaining behaviors and activities and controlling academic performance. This concept refers to one's judgment of their ability to perform a particular activity, overcome obstacles, and achieve desirable goals in a given situation (7). According to Bandura (8), academic self-efficacy refers to the perceptions and beliefs of students regarding their abilities to understand and learn, solve academic problems, and gain academic achievement.

According to Pajares (9), self-sufficient individuals are more successful in the accomplishment of difficult and challenging tasks and have more adaptability, interest, and inner motivation, compared to others. Honicke Broadbent (10) also reported a relationship between academic self-

efficacy and academic performance. Shams and Tabeh Bordbar (11) also found that academic self-efficacy, directly and indirectly, increases academic aspirations and altruistic behavior, respectively.

Academic engagement is another factor that affects academic self-efficacy. Reeve et al. (12) define academic engagement as the quality of the engagement of students in purposeful educational activities and involvement in an activity. In other words, this concept refers to the quality of the effort that the learners devote to purposeful educational activities or the degree of participation or commitment in learning activities (13). According to Schlechty (14), the involvement of the students in academic tasks is due to the fact that, firstly, the task attracts their attention, and secondly, the students mobilize their energy to do the task and maintain this excitement and energy until the end of the task.

According to Dogan (15), a student who believes in his/her ability to complete a task will be more engaged with that task; otherwise, they will consider the task unnecessary and abandon it. Belfield and Levin (16) believe that students with a high level of academic engagement choose the majors which will provide important social and economic status for them. Ugwu et al. (7) found that academic engagement has a positive relationship with self-efficacy. Davoodi (17) in a study entitled "Presenting a Model for Predicting Academic Achievement in English with Emphasis on the Role of Academic Self-Efficacy and Cognitive, Motivational and Behavioral Engagement" showed that his model fits well with the data of this study. In addition, Ghadampour et al. (18) found a negative relationship between the aspects of academic engagement (i.e., cognitive, emotional, and behavioral) and academic failure in male and female high school freshmen in Isfahan (prediction of educational failure based on academic engagement). In other words, they found that academic engagement can predict academic failure.

Among factors that affect academic self-efficacy are the achievement goals which refer to the mental expression of a goal that one attempts to attain (19). It should be mentioned that these goals basically imply on the learners' causes to accomplish the tasks (20). Achievement goals refer to actual and purposeful abilities to learn skills (21). According to Van Yperen et al., (22), the future success of students in education, employment, and sports can be predicted through achievement goals. This variable also has a positive relationship with academic motivation (23).

The results of some studies have confirmed a direct relationship between achievement goals and academic achievement (24). According to Jiang et al. (25), achievement goals are related to self-efficacy and these two components are related to academic achievement. On the other hand, Ryan and Shim (26) also found that achievement goals are related to the social adjustment of the students. Furthermore, Jowkar et al. (27) reported that achievement goals are associated with educational resilience and social adjustment.

According to the above-mentioned data, it can be assumed that the academic self-efficacy of the students was affected by the components of adjustment (i.e., educational, social, and emotional). Adjustment refers to a situation in which people gradually and intentionally/unintentionally adjust their behavior to adapt to the existing culture (e.g., adherence to customs and habits). In other words, social adjustment is the reaction that a person shows to the social customs and laws. Moreover, it is considered the basis of the behavior of people regarding social norms and social approval (26).

Recently, much attention has been paid to adjustment as the most important sign of the mental health of students. Adjustment is a complex process that arises from the interaction of the individuals with their environment where the individuals try to align their behavior with the culture, rules, restrictions, standards, and social customs (28). In this regard, Piaget's theory of adaptation beyond compromise refers to the active efforts of students to change their psychological processes to adapt to external

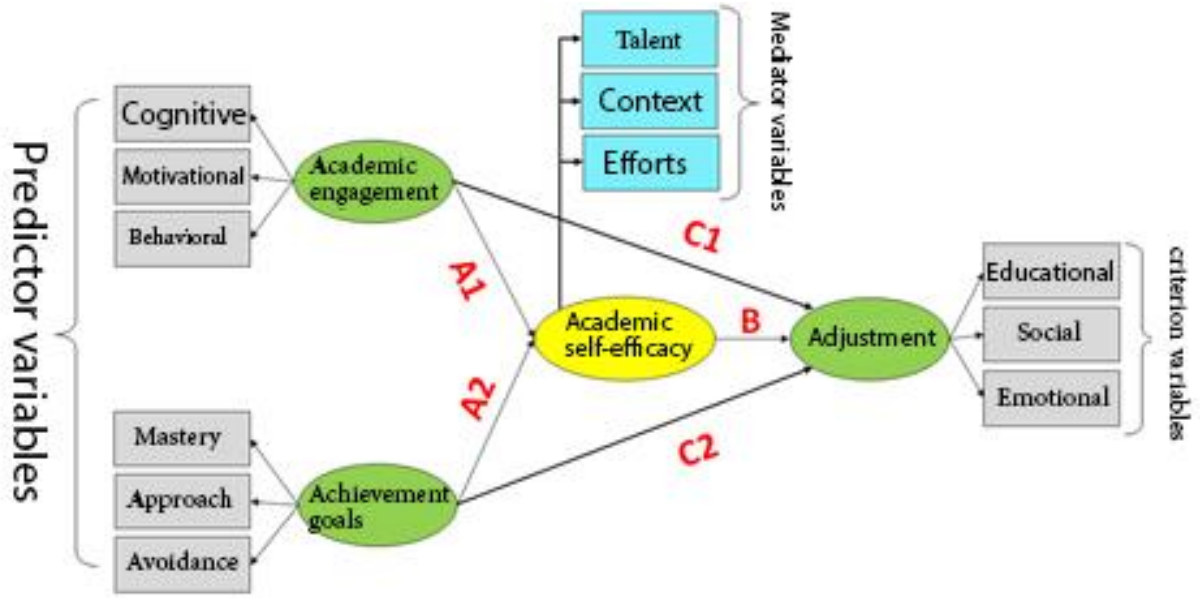

Figure 1. Diagram of the relationships among the variables

requirements (29).

DeRosier and Lloyd (30) argue that the social adjustment of students is related to their academic achievement. Various factors, such as educational methods, values, and beliefs that govern the individuals, society, family, and educational system affect the process of social adjustment. Erozkan (31) examined the effectiveness of teaching social skills to adolescents with social adjustment problems on their academic and social self-efficacy. The results of the aforementioned study showed that academic and social self-efficacy are improved through social skills training.

Shim and Finch (32) investigated people with achievement goals and social adjustment and found that the higher achievement goals lead to higher social adjustment. In a nutshell, the results of some studies (7, 15-18) revealed a significant relationship between academic engagement and self-efficacy. Moreover, the findings of some other studies (8, 30-32) indicated a significant relationship between self-efficacy and adjustment. Besides, Ryan and Shim (26) found a significant relationship between achievement goals and adjustment. The following explanations are reported for each of the results.

Review of the literature on academic self-efficacy revealed that on the one hand, variables, such as academic engagement and achievement goals, affect academic self-efficacy, and on the other hand, academic self-efficacy can affect the components of adjustment (i.e., educational, social, and emotional). The present study aimed to evaluate the relationships between these variables in the form of a conceptual model. Based on the above-mentioned data, it seems that the mentioned relationships can be presented as a model. The question that arose in this study was whether in this model academic self-efficacy can mediate the relationships among academic engagements, achievement goals, and social adjustment in high school students. These relationships are shown in Figure 1.

2. Materials and Methods

To answer the research question, a descriptive-correlational approach was used whose design was based on structural equation modeling and path analysis. The statistical population in this study included all high school students in Tehran, Iran during the academic year 2017-2018. In total, 546 students were randomly selected using multi-stage cluster sampling. The number of samples in the model development was calculated based on the formula as 50+8 times the number of variables. According to the number of variables in the present study, the minimum acceptable number of samples was 146; however, we considered a number of 546 individuals for more accurate results.

To collect data, initially, the necessary permits were obtained from the General Directorate of Education of Tehran. Research samples were selected from five district regions of Tehran (districts 1, 4, 5, 6, and 16) and the schools were randomly selected with one class at each grade. The schools were as follows: Shahid Motahari High School with all three theoretical disciplines in District 1; Dr. Shariati and Abu Ali Sina High Schools with all three theoretical disciplines in District 4; Hazrat Mahdi and Imam Hadi High Schools in District 5; Ayatollah Saeedi High School, which had only humanities discipline and Shahid Motahari High School with all three theoretical fields in District 6; Shariati High School with all three theoretical disciplines in District 16. Moreover, the data collection time was approximately 100 min per class. Regarding the ethical considerations, the participants were reassured about the confidentiality of their names and personal data.

2.1. Instruments

Morgan-Jinks Student Efficacy Scale

This scale was developed by Jinks and Morgan in 1999 to measure the perceptions of the students of their own academic abilities. This questionnaire consists of 30 items which were scored based on a four-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). It also has three subscales, including talent, effort, and context. The highest score on this scale is 120 points, and the higher scores indicate more academic self-efficacy. A translated version of this questionnaire was used in the present study.

The developers reported the reliability coefficients of each of the subscales as 0.87, 0.66, and 0.72, respectively (33). Mashayekhi Dolatabadi and Mohammadi (34) performed a study on 408 students, including 210 female (105 rural and 105 urban) and 198 male (99 rural and 99 urban) junior students in the high schools of Jiroft, Iran. They reported the overall reliability to be 0.65 by Alpha Cronbach's coefficient calculation method; however, they did not assess the validity of the Morgan-Jinks Student Efficacy Scale.

In the present study, the content validity index was especially evaluated in terms of simplicity, clarity, and relevance of expressions by eight experts in educational sciences and psychology from the faculties of Educational Sciences and Psychology of Islamic Azad University, Tehran Central and South Tehran Branches, Tehran. According to them, the content validity index was 0.85; therefore, the content validity of the scale was approved. To measure the reliability by internal consistency method, the scale was distributed among 150 high school students in Education Districts 1, 4, 5, 6, and 16 of Tehran (30 people in each district) and an Alpha Cronbach coefficient of 0.76 was obtained.

2.2. Zarang Educational Conflict Questionnaire

This questionnaire was designed by Zarang in 2012 and has 38 items and three components, including cognitive conflict, motivational conflict, and behavioral conflict (35). The items were scored based on a five-point Likert scale ranging from five (always true) to one (always false). The minimum and maximum sum of the scores of this questionnaire were 38 and 190, respectively. In the present study, a translated version of this questionnaire was used.

Dortaj and Rajabian (36) performed a study on 40 students of Payame Noor University of Kerman, Kerman, Iran. Based on their results, the reliability of the whole questionnaire and the components, namely cognitive conflict, motivational conflict, and behavioral conflict,

were 0.90, 0.85, 0.85, and 0.78, respectively. In the present study, the content validity of this questionnaire was judged in terms of simplicity, clarity, and relevance of expressions by eight experts in educational sciences and psychology from the faculties of Educational Sciences and Psychology, Islamic Azad University, Central Tehran and South Tehran Branches, and the result was 0.93. Therefore, the content validity of the questionnaire was confirmed. Reliability of the questionnaire was evaluated in a research conducted on 150 high school students in the Education Districts 1, 4, 5, 6, and 16 of Tehran and a Cronbach's alpha of 0.93 was obtained.

2.3. Adjustment Inventory

This inventory is a paper-and-pencil self-report tool designed in 1993 by Sinha and Singh. It separates the high school students (14-18 years old) with good adjustments from those with poor adjustment in terms of emotional, social, and educational adjustment. It consists of 60 yes-no items among which were equally divided into three subscales. The items were scored one and zero based on the presence or lack of adjustment, respectively. Sum of the total scores indicates the general adjustment of the individual and the sum of the scores in each subscale of adjustment (i.e., emotional, educational, and social) determines one's adjustment in that area. A low score indicates higher adjustment, while a high score indicates a lower one. It must be noted that a translated version of this questionnaire was used in the present study.

This scale also assesses the students in terms of their overall or general adjustment (37). Sinha and Singh evaluated the reliability of this inventory by split-half method in their study that was performed on high school students within the age range of 14-18 years in India. Their obtained results for the whole scale and the subscales of emotional adjustment, social adjustment, and educational adjustment were 0.95, 0.94, 0.93, and 0.96, respectively. Moreover, the validity of this questionnaire was assessed through correlation with a parallel form (California Psychological Questionnaire) and reported to be 0.73 (37).

In the present study, the content validity of this inventory was calculated at 0.95. It was evaluated in terms of simplicity, clarity, and relevance of expressions by eight experts in educational sciences and psychology from the faculties of Educational Sciences and Psychology, Islamic Azad University, Central Tehran and South Tehran Branches. Therefore, the content validity of the inventory was confirmed. The reliability of the questionnaire was evaluated in a research carried out on 150 high school students in the Education Districts 1, 4, 5, 6, and 16 of Tehran and a Cronbach's alpha of 0.84 was obtained.

2.4. Achievement Goals Questionnaire

This questionnaire was designed by Elliott and Church in 1997 and includes 18 items and three components, namely tendency-performance, avoidance-performance, and mastery. This questionnaire was scored based on a seven-point Likert scale ranging from completely disagree to completely agree. In the present study, a translated version of this questionnaire was used.

The developers reported the reliability coefficient of each of the mentioned subscales as 0.89, 0.91, and 0.77, respectively (38). Kamaei (2020) evaluated the content validity of this questionnaire using the opinion of eight psychometricians and psychologists and the values of 0.70, 0.82, and 0.74 were obtained for tendency-performance, avoidance-performance, and mastery, respectively (39).

Values of reliability coefficient of social adjustment, achievement goals, academic engagement, and self-efficacy in the present study were calculated to be 0.84, 0.85, 0.93, and 0.7, respectively. Given that the reliability coefficient of the questionnaires is more than 0.70, it is concluded that the scores obtained from these questionnaires are reliable and accurate.

Regarding the description of the data of the questionnaire, descriptive statistics were used to explain the demographic characteristics of the sample members and the subscales of the study. Pearson's correlation coefficient was also used to calculate the relationship of academic self-efficacy with academic engagement, achievement goals, and social adjustment. In addition, a structural equation model was used to determine the model fit. All statistical analyses were performed in SPSS software (version 22) and AMOS software (which version?).

3. Results

Table 1 summarizes the descriptive characteristics of the research variables which can be divided into two sections: descriptive statistics and correlation matrix. In the descriptive statistics section, based on the results of Table 1, the mean value of all the studied variables was higher than the hypothetical mean value. This indicates that students have a favorable situation regarding the mentioned variables. The results in the correlation matrix section were also reported in three parts as follows:

1) The relationship between **all components** of academic engagement and those of **self-efficacy** was significant (d.f.=544, P<0.01).

2) The relationship between **all components** of social adjustment **and** those of **self-efficacy** was significant (d.f.=544, P<0.01).

3) The relationship between **all components** of achievement goals, **except** the avoidance, and those of **self-efficacy** was significant (d.f.=544, P<0.01).

In the data analysis report, before examining the fit indices, a correlation matrix was reported among the variables. The LISREL software was used in order to fit the conceptual model.

Based on the results shown in Figure 2, the significance level of Chi-squared test results was lower than 0.01 and the value of root mean square error of approximation (RMSEA) was 0.085 and also greater than the desired value (0.08). Therefore, the fit of the theoretical model to the observed data was not confirmed. Hence, the question arose whether it is possible to achieve a better fit of the model by making some changes. The recommendations of LISREL for the modification of the model was that if the covariance between the tendency and avoidance components in the achievement goals changed from fixed to free, the fitting indices would be close to the desired level.

Given the results provided in Table 2, the indices Bentler-Bonett normed fit index, the goodness of fit index, and adjusted goodness of fit index were greater than 0.9 in the modified model. The amount of the Chi-squared test result decreased from 238.24 to 188 while the value of RMSEA decreased from 0.085 to 0.075. The results indicated that the model was valid regarding the relationship between the presented components, and thereby the proposed structure in the present study was fit well.

The present model investigated the mediating role of academic self-efficacy in the relationship of social adjustment with academic engagement and achievement goals in high school students. Data analysis of this model includes the following steps: A) correlation matrix, B) direct effects of academic engagement and achievement goals on social adjustment, C) indirect effects of academic engagement and achievement goals on social adjustment, D) the mediating effect of academic self-efficacy on the relationship of academic engagement and achievement goals with social adjustment.

In Table 3, the sub-sections of the mediating effect, namely self-efficacy, achievement goals, and academic engagement explained 0.82, -0.29, and 0.06 of the variance of social adjustment, respectively. Achievement goals and academic engagement also explained 0.3 and 0.5 of the variance in self-efficacy, respectively. In addition, the significance level of all paths, except the direct route of academic engagement to adjustment, was lower than 0.01.

Based on the results of Table 3, the mediating role of self-efficacy was investigated in the relationship of social adjustment (criterion) with academic engagement and achievement goals (predictors). According to Table 4, academic self-efficacy completely mediates the relationship between academic engagement and adjustment. However, regarding achievement goals, academic self-efficacy partly mediates the relationship between achievement goals and adjustment.

4. Discussion and Conclusion

Based on the results of the present study, there was a significant correlation between the components of academic self-efficacy and those of academic engagement, while the highest correlation coefficient was observed between the components of context and behavioral engagement. Regarding the relationship between academic engagement and self-efficacy, the results of the present study are in line with those of the studies performed by Ugwu et al., Belfield and Levin, and Ghadampour (7, 16, 18).

In this study, the mean value of the cognitive component of academic engagement was higher than that of the other components. In the cognitive process, the student is able to look at educational materials from other angles with inner motivation, and in these circumstances, efficiency and the ability to solve complex real-world problems is not far from expectation. For the (behavioral) component of academic engagement, the student was encouraged to solve problems with external stimuli. It was found that the lack of external stimuli increases the probability of non-engagement and academic failure. As a result, it is necessary to shift learning strategies from the behavioral and unstable external layer, which requires continuous reward, to the inner cognitive and stable layer.

Regarding adjustment, a significant correlation was found between the components of self-efficacy and those of academic adjustment. The highest coefficient for adjustment was allocated to the educational component; hence, a direct relationship between social adjustment and academic self-efficacy can be concluded. These results are consistent with those of a research performed by Bandura and Shim and Finch (8, 32).

Regarding adjustment, the educational component

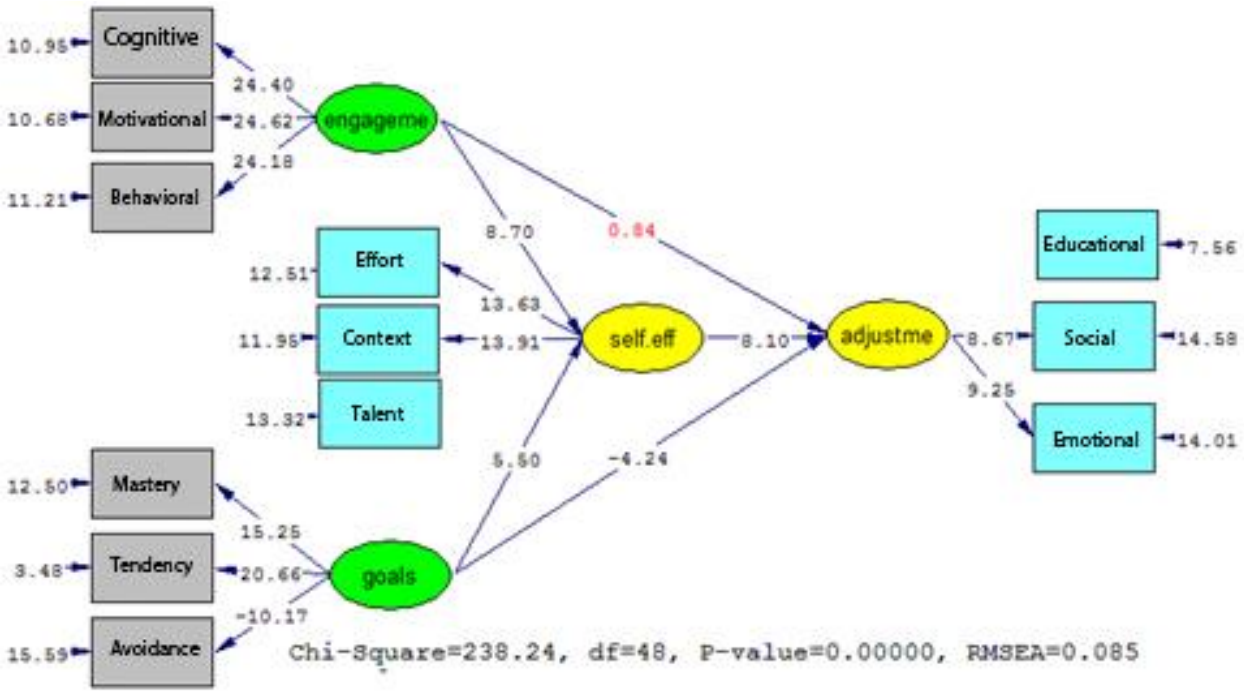

Figure 2. Path diagram of standard coefficients and error rates before model correction

Table 1. Descriptive characteristics of the research variables

Academic self-efficacy			Achievement goals			Adjustment			Academic engagement			Variables	
Effort	Context	Talent	Avoidance	Tendency	Mastery	Emotional	Social	Educational	Behavioral	Motivational	Cognitive	Components	
2.82	2.88	2.93	3.16	5.26	5.35	0.59	0.68	0.57	3.75	3.55	3.7	Sample mean	
2.5	2.5	2.5	4	4	4	0.5	0.5	0.5	3	3	3	Assumed mean	
0.54	0.36	0.36	1.01	0.96	0.87	0.18	0.19	0.19	0.69	0.65	0.6	Standard Deviation	
0.02	0.02	0.02	0.04	0.04	0.04	0.01	0.01	0.01	0.03	0.03	0.03	Error	
0.01	-0.2	-0.1	0.3	-0.4	-0.3	-0.3	-0.55	-0.1	-0.4	-0.32	-0.42	Kurtosis	
											1	Cognitive	Engagement
										1	.76*	Motivational	
									1	.74*	.73*	Behavioral	
								1	.39*	.31*	.32*	Educational	Social Adjustment
							1	.32*	.22*	.13*	.16*	Social	
						1	.38*	.39*	.17*	.04	.13*	Emotional	
					1	.05	.15*	.24*	.43*	.38*	.39*	Mastery	Achievement goals
				1	.59*	.00	.15*	.12*	.34*	.35*	.36*	Tendency	
			1	-.4*	-.2*	.11*	-.01	.16*	-.06	*1-.	-.1*	Avoidance	
		1	-.03	.33*	.35*	.16*	.19*	.34*	.42*	.41*	.43*	Talent	Self-efficacy
	1	.47*	-.07	.39*	.38*	.19*	.25*	.40*	.5*	.39*	.41*	Context	
1	.52*	.52*	.04	.30*	.27*	.27*	.28*	.43*	.38*	.32*	.31*	Effort	

Table 2. Fitness indicators of the modified model

Indicator	x^2	x^2/df	RMSEA	NFI	GFI	AGFI
Value	188	4	0.074	0.96	0.95	0.91

RMSEA: root mean square error of approximation, NFI: Bentler-Bonett Normed Fit Index, GFI: goodness of fit index, AGFI: adjusted goodness of fit index

had the highest coefficient. Based on the results, it seems that addressing educational adjustment is essential in the educational system. If the students realize that education is the key to success, they will be likely to increase their adjustments and engage with the tasks eagerly without comparing themselves with others. Moreover, the continuation of successes will motivate them to continue the route. By understanding this, the students will believe in their ability to solve problems in real situations.

If a person with inner motivation goes through the process of adjustment and generalizes this ability to real situations, it can be said that education has reached its ultimate goal. In this case, students can spontaneously control their maladaptive thoughts and imaginations,

Table 3. Standardized coefficients of direct, indirect, and mediating effects

Model	COD	Predictor	Criterion	Standardized coefficient	t	Sig
Direct	C	Engagement	self-efficacy	0.36	7.04	P <0.01
		Goals		0.42	8.84	P <0.01
Indirect	A	Engagement	self-efficacy	0.51	8.93	P <0.01
		Goals		0.26	4.80	P <0.01
	B	Self-efficacy	Adjustment	0.68	10.31	P <0.01
Mediating	Ć	Engagement	Adjustment	0.06	0.84	P>0.05
		Goals	Adjustment	-0.29	-4.24	P<0.01

COD: coefficient of dispersion

Table 4. Investigation of the mediating role of self-efficacy in the relationship of social adjustment (criterion) with academic engagement and achievement goals (predictors)

Predictor	Criterion	Mediator	COD				Role of the mediator
			Direct	Indirect		Media	
			(C)	(A)	(B)	Ć	
Engagement	Adjustment	self-efficacy	Sig	Sig	Sig	Not sig	Completely
goals			Sig	Sig	Sig	Sig	Partly

COD: coefficient of dispersion

find possible mistakes in their paths, and organize their thoughts in real-world situations. Based on these statements, educational methods can emphasize adaptive strategies and thoughts, strengthen logical and event-based reasoning, and improve their efficiency and effectiveness by controlling misconceptions.

In the conceptual model, the coefficient of academic engagement in the prediction of self-efficacy was significant. Moreover, the self-efficacy coefficient was significant in the prediction of adjustment. However, the direct effect of academic engagement on the prediction of adjustment was insignificant. From these data, it can be concluded that academic self-efficacy completely mediates the relationship between academic engagement and adjustment.

Complete mediation will happen if the scale of academic self-efficacy becomes a category from a distance, the subjects are divided into upper and lower groups accordingly, and the slope of the regression line is significantly different regarding the relationship between academic engagement (as a predictor variable) and adjustment. In other words, the effect of academic engagement on adjustment is modulated by academic self-efficacy. Academic engagement actually refers to the behavioral, emotional, and cognitive reactions of students to tasks.

Regarding the achievement goals, a significant correlation was found between the components of academic self-efficacy and achievement goals, except for the avoidance component. In explaining this statement, it can be said that although students considered performance as the criterion that should be compared with others, they did their best to avoid failure. Regarding the achievement goals, the results of the present study are in line with those of the research performed by Dysvik and Kuvaas, Elliot and McGregor, and Jowkar et al. (23, 24, 27).

In this conceptual model, the coefficient of achievement goals in predicting self-efficacy was significant. Furthermore, the coefficient of self-efficacy in predicting adjustment was significant as well. Moreover, the direct effect of achievement goals on the prediction of adjustment was also significant. In terms of the relationship between achievement goals and self-efficacy, the findings of the present study are in line with those of the studies carried out by Jiang et al., Ryan and Shim, and Jowkar et al. (25, 26, 27).

Based on these data, it can be concluded that academic self-efficacy partly mediated in the relationship between achievement goals and adjustment. Therefore, the relationship between the criterion and the predictor variables was affected by a third and fundamental influential variable, such as academic self-efficacy. The implication of this result was that the approaches and arrangements of education, training programs, and instruction should be designed in such a way to ensure the self-efficacy of the students. In that case, the side effects of such an action will improve adjustment and clarify the achievement goals. Regarding the relationship between achievement goals and adjustment, the results of the present study are in line with those of the study conducted by Ryan and Shim (26).

In the model, the avoidance-performance component coefficient for achievement goals was also negative in predicting academic self-efficacy. In explaining this statement, it can be said that students considered performance as a criterion to compare with others, they have done their best to avoid investing failure.

The tendency component also explained the high level of achievement goals. Sometimes the tendency of a student in school may change to maladaptive behaviors, such as competing and comparing with others, instead of comprehending the material. Such a process may be desirable in the early stages; however, it will ultimately lead to the lack of development of the talents of the students. It should be noted that the comparative approach is desirable in cases where everyone is involved in adaptive activities. Nevertheless, this style is not true for educational prerequisites, and therefore is inevitable for the success of emphasizing students' mastery on prerequisites.

It should be noted that effort had the highest coefficient among the components of self-efficacy. According to a definition, "learning constitutes relatively stable changes that occur in potential behavior as a result of practice and effort" (29). Competition and comparison are acceptable if all students are equal in terms of the components that affect learning, such as talent. Therefore, underdeveloped students do not have the opportunity to attribute their success to factors other than effort (talent or context).

Mastery, as one of the components of achievement goals, refers to the emphasis on the efforts of students to master their assigned tasks and use most of the time they have to increase their academic learning time. According to the literature, the strategy of students whose goal is to understand and master the content is to reach deeper levels of conceptual understanding. Hence, it is necessary to use an educational method that helps the students in understanding the concepts. Once students master their assigned tasks, their motivation to engage with the next tasks will be inevitable.

Therefore, one of the techniques of effective teaching is for teachers, if possible, to use structured assignments and help the students master the prerequisites, solve their problems, and provide them with appropriate feedback. In the case of new assignments, it is likely to encounter instances of noncompliance that make them difficult for students to understand. As a result, it is necessary for the students to actively make changes to their cognitive construction in order to absorb new materials and achieve balance and adjustment. The emphasis on successful experiences will motivate students to do the next assignments and will strengthen their self-efficacy and belief in their capability (29).

This applied research was conducted to fit a structural model using AMOS. In order to achieve valid results, researchers are suggested to perform a model on a sample similar to that of this study and compare the obtained coefficients with those of the present study. It is also recommended to select different samples with different properties to study this structure. Since no significant research has been conducted about this subject until now, it is necessary for other researchers to select different samples with different characteristics to study this structure.

One of the limitations of the present study was the lack of access to similar studies to guide the research process towards the achievement of a coherent perspective. Moreover, the findings of this study are based on the data obtained from a sample of students in Tehran; therefore, they can only be generalized to the student population of this city.

Conflict of Interest

The authors declare no conflict of interest in this study.

Acknowledgment

Hereby, the authors would like to appreciate the collaboration of school headmasters and parents as well as the students who participated in this research project.

References

1. Alibakhshi SZ, Zare H. The effectiveness of self-regulatory learning and study skills training on students' academic achievement. Quarterly of Applied Psychology. 2010; 1(51):31-63. [Persian]
2. Mikaeili N, Afrooz G, Gholiezadeh L. The relationship of self-concept and academic burnout with academic performance of girl students. Journal of School Psychology, 2013; 1(4): 90-103. [Persian]
3. Komarraju M, Nadler D. Self-efficacy and academic achievement: Why do implicit beliefs, goals, and effort regulation matter? Learning and Individual Differences. 2013; 25:67-72.
4. Bandura, A. Self-efficacy. In V. S. Ramachandran (Ed.), Encyclopedia of human behavior (Vol. 4, pp. 71-81). New York: Academic Press. (Reprinted in H. Friedman [Ed.], Encyclopedia of mental health. San Diego: Academic Press, 1998.
5. Akin S, Can G, Durna Z, Aydiner A. The quality of life and self-efficacy of Turkish breast cancer patients undergoing chemotherapy. European Journal of Oncology Nursing. 2008; 12(5):449-456.
6. Ferla J, Valcke M, Cai Y. Academic self-efficacy and academic self-concept: Reconsidering structural relationships. Learning and individual differences. 2009; 19(4): 499-505.
7. Ugwu FO, Onyishi IE, Tyoyima W. Exploring The Relationships Between Academic Burnout, Self-Efficacy and Academic Engagement Among Nigerian College Students. The African Symposium. 2013; 37: 37-45.
8. Bandura A. Cultivate self-efficacy for personal and organizational effectiveness. Handbook of principles of organization behavior. 2009; 2: 179-200.
9. Pajares F. Self-efficacy beliefs in academic contexts: Theory into practice. 2002; 41(2):116-125.
10. Honicke T, Broadbent J. The influence of academic self-efficacy on academic performance: A systematic review. Educational Research Review. 2016; 17:63-84.
11. Shams F, Tabe Bordbar F. Mediating Role of Academic Self-efficacy for Goal Orientation and Math Performance. Journal of Psychological Models and Methods. 2011; 1(3):78-85.
12. Reeve J, Jang H, Carrell D, Jeon S, Barch J. Enhancing

students' engagement by increasing teachers' autonomy support. Motivation and emotion. 2004; 28(2): 147-169.
13. Bakker AB, Schaufeli WB, Leiter MP, Taris TW. Work engagement: An emerging concept in occupational health psychology. Work & Stress. 2008; 22(3):187-200.
14. Schlechty PC. Creating create schools: Six critical systems at the heart of educational innovation. Sanfrancisco: John Wiley & Sons. 2005.
15. Dogan U. Student engagement, academic self-efficacy, and academic motivation as predictors of academic performance. Anthropologist. 2015; 20(3):553-561.
16. Belfield CR, Levin HM. The economic losses from high school dropouts in California. University of California, Santa Barbara. 2007.
17. Davoodi S. Presenting the Prediction Model of Academic Achievement with Emphasizing the Mediate Role of Cognitive, Motivational and Behavioral Engagement. Research in School and Virtual Learning. 2014; 1(4): 69-76. [Persian]
18. Ghadampour E, Mirzaeefar D, Sabzian S. Studying The relationship between Student academic engagement with dropout among high school students, male and female first year of Isfahan province. Educational Psychology, 2015; 10(34): 233-247. [Persian]
19. Pekrun R, Elliot AJ, Maier MA. Achievement goals and achievement emotions: Testing a model of their joint relations with academic performance. Journal of educational Psychology. 2009; 101(1): 1-15.
20. Braten I, Stromso H. Epistemological belief and implicit theories of intelligence as predictors of achievement goals. Contemporary Educational Psychology. 2004; 29:374-388.
21. Pintrich PR. The role of goal orientation in self-regulated learning. Handbook of self-regulation. 2000; 451: 451-502.
22. Van Yperen NW, Blaga M, Postmes T. A meta-analysis of self-reported achievement goals and nonself-report performance across three achievement domains (work, sports, and education). PloS one. 2014; 9(4):e93594.
23. Dysvik A, Kuvaas B. Intrinsic and extrinsic motivation as predictors of work effort: The moderating role of achievement goals. British Journal of Social Psychology. 2013; 52(3):412-430.
24. Elliot AJ, McGregor HA. A 2× 2 achievement goal framework. Journal of personality and social psychology. 2001; 80(3):1-5.
25. Jiang Y, Adaval R, Steinhart Y, Wyer Jr, RS. Imagining yourself in the scene: The interactive effects of goal-driven self-imagery and visual perspectives on consumer behavior. Journal of Consumer Research. 2014; 41(2):418-435.
26. Ryan AM, Shim SS. An exploration of young adolescents' social achievement goals and social adjustment in middle school. Journal of Educational Psychology. 2008; 100(3):672.
27. Jowkar B, Kojuri J, Kohoulat N, Hayat AA. Academic resilience in education: the role of achievement goal orientations. Journal of advances in medical education & professionalism. 2014; 2(1):33.
28. Feder A, Nestler EJ, Charney DS. Psychobiology and molecular genetics of resilience. Nature Reviews Neuroscience. 2009; 10(6):446-457.
29. Seif AA. Modern Educational Psychology. Tehran: Doran Publications. 2017.
30. DeRosier ME, Lloyd SW. The impact of children's social adjustment on academic outcomes. Reading & Writing Quarterly. 2010; 27(1-2):25-47.
31. Erozkan A. The Effect of Communication Skills and Interpersonal Problem Solving Skills on Social Self-Efficacy. Educational Sciences: Theory and Practice. 2013;13(2):739-745.
32. Shim SS, Finch WH. Academic and social achievement goals and early adolescents' adjustment: A latent class approach. Learning and Individual Differences. 2014; 30: 98-105.
33. Jinks J, Morgan VM. Children's Perceived Academic Self-Efficacy: An Inventory Scale. The Clearing House. 72(4): 224-230.
34. Mashayekhi Dolatabadi M, Mohammadi M. Resilience and spiritual intelligence predictors of as academic self-efficacy in urban and rural students. Journal of School Psychology. 2014; 3(2): 205-225.
35. Zarang RA. The relationship between learning styles and academic conflict with academic performance of students of Ferdowsi University of Mashhad. Master Thesis in Educational Psychology. Ferdowsi University of Mashhad. 2012.
36. Dortaj F, Rajabiyan Dehzireh M. The impact of distance education (based Mooc) on academic engagement and its components among the students of PNU. 2018; 6(10): 131-150. doi: 10.22084/j.psychogy.2018.14205.1632
37. Sinha KP, Singh RP. Adjustment inventory for school students. National Psychological Corporation. 1971.
38. Elliot AJ, Church MA. A hierarchical model of approach and avoidance achievement motivation. Journal of personality and social psychology. 1997; 72(1): 218.
39. Kamaei A, Asgari P, Heidari A, Naderi F, Makvandi B. Causal relationship between achievement goals and academic performance through mediating of academic buoyancy in secondary high school girl students. jiera, 2020; 14(48): 109-125. doi: 10.22034/jiera.2020.188451.1898