The relationship between self-regulated learning, academic self-concept and the academic achievement motivation of students in the second grade of high school

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Abstract

Background: The purpose of this study was to investigate the relationship between self-regulated learning, academic self-concept and academic achievement motivation of students in the second grade of high schools of Khorramabad.

Materials and Methods: This was a descriptive-correlational study in which all the second-grade high school students in Khorramabad city in Iran who numbered 382 (201 boys, 182 girls) were selected as case study subjects. Data collection tools were Pintrich & De Groot Self-regulated learning strategy questionnaire and Karal Rodgers academic self-concept questionnaire. Pearson correlation and multivariate regression analysis were used for data analysis.

Results: The Pearson correlation coefficient test showed that there was a positive and significant relationship between self-concept and intrinsic motivation as well as between self-concept and extrinsic motivation of academic achievement ($p < 0.05$). But, the relationship between self-concept and lack of motivation for academic achievement was inversely significant. The relationships between self-regulated learning and intrinsic motivation and the relationship between self-regulated learning and extrinsic motivation of academic achievement among secondary school students were also positively significant ($p < 0.05$). There was a negative and inverse significant relationship between self-regulated learning and lack of academic motivation. The results of regression analysis also showed that self-concept and self-regulated learning variables were suitable predictors for academic achievement motivation.

Conclusion: According to the results of the research, in the educational system, the academic self-concept and self-regulated learning can be improved by counseling and clinical psychology programs in schools in order to develop academic achievement of students.

Key words: Academic achievement motivation, Academic self-concept, Self-regulated learning strategies

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Introduction

Motivation is an important issue in the learning of trainees and students. Indeed, some professionals consider motivation to be the primary responsibility of instructors and teachers [1]. Despite the excitement of learners, it is unlikely that they would show enough effort to gain skills. Unfortunately, even the best training and educational program would not work if there was no "motivation" in trainees and students. There are still people who already have signs of motivation. Individuals from the very beginning to the last moments of life have self-arousal. Motivation is one of the characteristics of every living creature [2]. But in some cases, it is seen that learners do not like to perform based on the desires of teachers or instructors, they are motivated in any case. Therefore, the instructor and teacher play the role of controlling the learners' motivation and pushing the motives to learn a task or special work, rather than to play the role of creating motivation. It means that their attention is attracted in some ways and their energy is directed to engage in serious activities [3].

Sometimes, motivation is instinctive and sometimes logical decision making; often motivation is self-centered and in personal service [4]. Motives are a powerful force in the learning process. Motivation is not only a guiding force but is also confusing [5]. If you are motivated by something, the other things that you have to do, will cause bewilderment. This is the way you prefer to do something, and you have to choose another method [6].

Regarding the role of motivation in academic achievements, it can be said that motivation makes the learners strong. This force makes them active and involved in the work and responsibility. Motivation is a factor for insistence on work and continuity of activity [7]. Motivation is goal-centered and leads learners to complete their work and estimate the comprehension of an objective goal. Motivation is selective. It determines what action to take. Motivation determines the priority. It is a model for learner behavior, and organizes the activities, adds to workforce and efficiency, and leads to mapping or designing. The effects of four factors of persistence, orientation, prioritization and planned behavior are necessary for learning [8]. They create a rich source that can benefit the instructors, teachers and learners. No-one will remember anything without motivation, although the genetics and environment or intelligence and enriched teaching environment and improving teaching methods, have effects, to a large extent, on improving the educational situation. The heart of education is motivation. Motivation is a general tendency to achieve academically and motivation is a special way to comprehend a specific lesson. Today, with deeper attention to the new horizons of psychology, the interests and wishes of students are better known to teachers [9].

Students are the focus of training activities and find the necessary motivation and curiosity for learning. The third millennium education is different from the education of the past. The dramatic changes in behavioral sciences and the discovery of new horizons, meta-cognitive, self-concept theories and confidence reinforcement are among the most important priorities of education. Students are not able to achieve great and supreme goals without being assured about moderate goals and strengthening their sense of accomplishment. Objectives must be moderately complex and should be guided in relation to everyday life issues and with regard to childhood interests in the primary school (with stories, the story of the display of childhood poetry (child literature)) and in middle school with regard to the psychology of puberty and the cognitive development of their interests and they should be educated as curious people and researchers.

Motivation is mixed in the world of children at initial stages of development. Children have a learning motive from birth, and for the same reason they continually interact with the environment. The more they grow, the stronger this motive. They want to act independently and learn as much as possible until it is time to read and write. At this stage, the child continues to strive and occasionally stops trying, or enjoys learning, and thinks that those who succeed are different from him. Therefore, they become distanced from the learning of science and knowledge. This distance is increased due to psychological and spiritual characteristics and culture of family or environmental factors, and sometimes it is irreparable, and thus they do not like and think about it [10]. Regarding what has been stated, the current research considers to answer ifthere is a significant relationship between self-concept, self-regulated learning and the academic achievement motivation in students in the second grade of high schools of Khorramabad.

Having the power of learning and remembering the materials included in the curriculum will lead to success and motivation for academic achievement [11]. Academic achievement motivation will require quantitative and qualitative changes in students' knowledge and skills through formal education that is measured by their annual average. Learning and teaching have a social context and occur in the classroom. Academic achievement motivation in terms of cognitive skills is not the sole educational goal. Self-esteem and social skills are both necessary as a condition for cognitive skills [12].

Absolutely, studies have shown that academic self-concept affects academic achievement motivation. Magno (2010) showed that students were at risk of dropping out of school, with negative attitudes toward education, and have poorer self-concept, and tendency to more external control. They described their parents as low-expectation and superficial subjects [13].

The strategies of learning motivation were above moderate among the students, but self-regulated learning strategies had no significant difference with the average level. Considering the structure of educational settings, the method of compiling educational content as well as the teaching patterns used by the professors, low self-regulated learning strategies of students seem to be logical.

The results of Delavar et al. (2015) in studying the relationship between self-regulated learning strategies, types of goal orientation and academic achievement of students confirmed that the self-regulated learning strategies and the dominant goal orientation predicted positively as well as the functional goal orientation negatively predicted students' academic achievement and the contribution of self-regulated learning strategies in this field is more than other variables [14].

.Deci & Ryan (2015) found a significant relationship between self-concept of the ability and academic achievement motivation (correlation of about 0.60) [15]. Zimmerman and Schunck (2015) in examining the relationship between self-regulated learning and academic achievement motivation found that there was a significant relationship between students' self-regulated learning and their academic achievement motivation and those with higher academic achievement have higher self-regulated learning [16]. Research results of Zimmerman and Schunck showed that self-regulated learning with very high percentage predicted students' academic achievements.

In a longitudinal study of four groups, Pajares & Kranzler (2014) measured the academic achievement of students at the ages of 9, 12, and 15 and their total self-concept was measured at the age of 12. The control variables, social class and ability, were measured at the age of 7 years. They did not find any evidence that academic achievement and self-concept had a causal relationship to one another, and stated the third variable (for example, social class and ability) as the cause of academic achievement and self-concept [17].

Mostafaei (2015) in a study compared the effect of smart and ordinary schools on critical thinking skills and academic achievement motivation of high school students in Tehran. The study was conducted as a causal comparison and the statistical population of the study was students in the third year of Tehran high school and pre-university in the field of mathematics [18]. The results of the research showed that the mean of critical thinking skills of students in smart schools was higher than that of ordinary school students. There was no significant difference among students of ordinary and smart schools in terms of academic achievement motivation. By analyzing the data of a large sample of high school students and measuring their academic achievement and total self-concept within two years, Malmberg (2014) found no evidence that the performance of a variable was more prominent than other variables. They suggested two possible explanations: self-concept and academic achievement might be the effect of a third variable, or both variables have the same impact in a cyclic form [19]. Therefore, even if academic achievement, self-concept of total ability and self-esteem interact with each other, the dominant causal direction is from achievement in the self-concept of the ability to achievement motivation [20]. Another study showed that the mean score of behavior and attitude increased after the intervention. But, no significant association was obtained between the mean scores of behavior and attitude prior to and after the intervention in the traditional group [21].

Self-regulated learning is one of the variables that are related to academic achievement motivation. Self-regulated learning is now considered as an important building block in education and has been addressed by policy makers, teachers, educators and parents. Self-regulation is the ability of a person to develop knowledge, skills and behaviors that can be transmitted from one field to another and from learning situations to work and leisure activities. This new construct has sparked discussions on school reform around the world. The self-regulated learning term has been rooted in the 1980's. Since then, self-regulation has been emphasized in learning, responsibility and commitment to learning in students [22]. Research conducted in this field focused on the interaction between cognitive, metacognitive and motivational strategies in a rational structure [23]. Also, the term self-regulated learning is valuable because in such behavior, "self" mediates between individuals and their learning objectives on the one hand and their goals on the other hand. For example, one's perception of their ability and one's perception of the difficulty of homework affects the quality of his or her learning [3].

The concept of self-regulated learning is a multifaceted construct, which involves complex interactions between the use of cognitive, meta-cognitive and motivational strategies. Self-regulated learning is a type of learning that results from the effects of self-produced thoughts, emotions, strategies and behaviors of students that are directed towards achieving goals. On the other hand, self-concept is a collection of perceptions or an overall evaluation of one's personality [11]. This assessment comes from mental evaluation that each person obtains from their own behavioral characteristics. Rogers defined self-concept as an interpretation a person has of his or her own self, or, in other words, what the individual feels of their own existence [6].

The importance of students' academic achievement has been addressed in many studies on facilitating predictors to achieve this goal. One of these predictors is the self-concept of a person. Self-concept can be understood as the perception of an individual that is formed as a result of the experiences of the individual with the environment and their relationship with others [11]. Self-concept is a dynamic system related to the beliefs, values, desires, talents and abilities of the individual. These factors determine the direction of individual life. Academic self-concept is also the process of formation of evaluation of self-concept influenced by the students' educational experiences and the interpretation of the educational environment and expresses the individual's knowledge and perceptions of weaknesses in a certain academic discipline and belief in their ability to successfully accomplish academic tasks at designed levels. Also it is one of the best predictors and mediators for effective and non-effective motivational variables and is one of the most important and influential factors in the learning process. Academic self-concept is strongly dependent on relative social information and is a reflection of others' evaluation with a normative nature. In other words, the academic self-concept of each person is a result of their comparison with others [24].

What further emphasizes the necessity of the present research with regard to the above issues is the study of the relationship between self-concept, self-regulated learning and the level of students' academic achievement, which is carefully considered in the present paper. The basic necessities of the research are as follows:

The first requirement was that education policy makers have a special and more specific view on self-regulated learning in the development and improvement of low-attained and unpromising students. The second requirement was that, for better student performance in school, the subject of self-concept was paid attention to based on the results of this study in a more planned form (a meeting with the parents, instructors and educational workshops). The third requirement was that, given the fact that the vast majority of students with lack of academic motivation are at risk of developing disorders, the academic achievement motivation should be taken into consideration by teachers in form of conference and group discussions in the classroom. The fourth requirement was that families and teachers should pay attention to the students' self-concept, and that students who are weak in this regard can provide their own self-esteem by contributing to classroom activities. The fifth requirement was that the research flaws were resolved in relation to the examination of these three variables (self-concept, self-regulated learning and academic achievement motivation). Researchers have also devoted part of their research to the study of these variables, as conducting educational research in education can create a growing environment for the development of a country. Therefore, according to the discussed issues, the purpose of the present study was to determine the relationship between self-regulated learning, academic self-concept and academic achievement motivation in the second-grade high school students in Khorramabad, Iran.

Research methodology

Research method:
Since the purpose of the research was to describe the conditions or phenomena under study and the implementation of the research can help to learn more about the existing conditions and help the decision-making process, the present research method was descriptive and correlational.

Statistical population of the research
The statistical population of the research included all the second-grade high school students in Khorramabad, Iran (8254), who were studying in the academic years 2015-2016.

Sampling method and sample size:
Based on Krejcie & Morgan tables, 382 individuals were selected to determine the sample size. The questionnaires were distributed among them to collect the data. 95 people were in the field of mathematics-physics, 95 people were in the field of experimental sciences, 94 in the field of humanities, 115 in technical sciences and 75 in the field of skill and knowledge. Out of 382 in the sample; 118 were 14-15 years old; 217 were at the age of 16-17, and 47 were between 18 and 19.

Measuring tools
Self-regulation strategy inventory
This questionnaire was arranged in 47 items by Pintrich et al. (2009) in two sections: Motivational beliefs and self-regulated learning strategies (Cognitive and Metacognitive Strategies) [25]. The subscale of self-regulated learning strategies includes 22 phrases and measures three aspects of academic self-regulation, namely cognitive strategies, metacognitive strategies and resource management. Cognitive strategies have 13 phrases. The Likert scale was used (I totally agree, agree, no idea, disagree, and totally disagree).

Pintrich and De Groot (1991) reported cognitive strategies as 0.88, meta-cognitive strategies as 0.83, and motivational beliefs as 0.76 by Cronbach Alpha [25].

Pintrich self-regulation learning strategies questionnaire (1990) was scored as follows (I totally agree: 5, I agree :4, I have no idea: 3, I disagree: 2 and totally disagree:1). Also, the cognitive strategies include 11 phrases as follows: repeating and reviewing contain phrases 77,14,24; expansion includes note taking with phrase 17; summarizing contains phrases 73,11; Organizing contains the phrases 74.72.14.24.24; and comprehension includes phrases 11,12. Metacognitive strategies and resource management include 4 phrases as follows: Planning includes phrases 74, 14; monitoring and control include the phrases 71, 71, 13, 24; the ordering includes attempts and. the perseverance with phrases 14 ,13; and the ordering activity contains phrase 73. The motivational beliefs section includes 23 phrases with four components of self-efficacy, goal orientation, internal evaluation, and exam anxiety as follows: self-efficacy includes phrases 22, 21, 14, 17, 12, 13, 4, 4, 2; goal orientation includes phrases 27,14,11,7,1. Internal evaluation includes 23, 14, 4, 3; exam anxiety includes 23, 21, 14, 13; 11, 4, 1. By adding each of the questions, the score of each sub-scale is obtained.

Vallerand Achievement Motivation scale. AMS (1992):
The scale of academic motivation is the translation of the English sample of the academic motivation scale. This scale is built on the theory of "self-determination" and has 28 questions with seven options that measure three dimensions of intrinsic motivation, extrinsic motivation and lack of motivation. The intrinsic motivation refers to a person who voluntarily and inwardly carries out a specific task, and, besides the external rewards, doing homework is worthwhile and satisfactory for a person. But extrinsic motivation refers to the motive which forces people to do their homework for external rewards and reinforcements as well as when people are excited externally and act to accomplish something more than their own pleasure. To assess psychometrically the questionnaire, all face validity and content validity stages were performed (qualitative and quantitative). Reliability of the questionnaire was verified by Cronbach's alpha (a = 0.88) and splitting (r = 0.73). In the study of Veysani et al. (2012), Cronbach's alpha for

subscales of intrinsic motivation, extrinsic motivation and lack of motivation were 0.84, 0.86, and 0.67 respectively [26]. Also, the academic motivation questionnaire was approved by faculty members of school of Education Sciences of Shiraz University in terms of face validity and content validity. The reliability of the tool was calculated by Cronbach's alpha method. At the time of the test, it was 0.73 for two weeks. Cronbach's alpha coefficient for the whole questionnaire was also reported at 88%.

Akbari (2007) evaluated the validity of the achievement motivation test among high school students in Gilan province [27]. Cronbach's alpha for the whole questionnaire was 0.84.

Content validity was confirmed by several psychologists, psychometrists and advisers in education. The criterion validity was 0.42 obtained through correlation coefficient of a person's score made by an average of two years ago and the correlation coefficient of the individual score in the scale made by the average opinions of high school teachers and assistants was 0.56, which is evidence of the criterion validity. The correlation between the score of each question and the total test and the correlation of the triple components suggest the construct validity. The response to each item is based on a seven-point Likert scale (not at all, very low, small, medium, high, very high, perfectly) and they were scores from 1 to 7, respectively. Then, the amount of academic motivation is ranked according to obtained score, so that the scores between 27 and 70 are poor academic motivation, scores from 70 to 112 show motivation at a moderate level and the scores above 112 are considered very good at academic motivation.

Academic self-concept questionnaire

This questionnaire was prepared in 1938-1957 to measure the level of self-concept of individuals. This test consists of two forms, in both of which the same set of 25 pairs of opposite personality traits are presented. The subject is asked to answer the first form based on how he sees himself and in the second form how he wishes to be. In this test, high self-concept means no matching between the actual and ideal selves. The self-concept question has six distinct dimensions, namely self-concept, physical, social, rational, moral, educational, and temperament.

Molaei (1998) reported the criterion validity by 0.59 and the reliability of the tool as (0.78) by the alpha method [28]. Zarei (2006) reported the criterion validity as 0.71 and the reliability of the tool was 0.82 by alpha method. Respondents have four choices and should choose one based on their self-concept ranging from completely disagree to completely agree [29]. The choices or responses are in a way that the scoring system remains the same for all questions, namely 1- 2- 3- 4-5 whether the question is positive or negative. If the respondent ticks the first choice (P), the score will be 4, the score 3 is for the second choice and 2 for the third choice is and the score 1 is for the fourth choice. The total scores of 60 questions show the total score of the individual's self-concept, in this questionnaire the high score reflects a higher self-concept and low score shows lower self-concept.

Data analysis and processing

In order to analyze the data in this research, the following statistical methods and SPSS version 22 were used: In the descriptive analysis section the mean, standard deviation and percentage of scores and variables along with plotting a column chart were used. In Inferential Analysis: Kolmogorov Smirnov Test to examine normal distribution, Pearson correlation coefficient and multivariate regression with SPSS 22 were used. Also, for all hypotheses, the significance level was considered to be P <0.05.

Research Findings

The Pearson correlation coefficient test showed that there was a positive and significant relationship between self-concept and intrinsic motivation as well as between self-concept and extrinsic motivation of academic achievement (p <0.05). But, the relationship between self-concept and lack of motivation for academic achievement was inversely significant. The relationships between self-regulated learning and intrinsic motivation and the relationship between self-regulated learning and extrinsic motivation of academic achievement among secondary school students were also positively significant (p <0.05). There was a negative and inverse significant relationship between self-regulated learning and lack of academic motivation. The results of regression analysis also showed that self-concept and self-regulated learning variables were suitable predictors for academic achievement motivation. The results of this study are shown in Tables 1 to 22.

Inferential analysis

Testing statistical data for normalization

For data inferential analysis, the data were first tested by the Kolmogorov-Smirnov test to determine which statistics are used for analysis. The results of this test are shown in Table 1.

Table 1: Test of Questionnaires for normalization (Kolmogorov-Smirnov test)

Indicators		Mean	Standard deviation	Z	Probability value	Type of distribution
Variables	Self-concept	40.397	5.94	7.85	0.01	Normal
	Self-regulated learning	125.591	32.89	7.37	0.01	Normal
	Intrinsic motivation	56.82	9.26	10.39	0.01	Normal
	Extrinsic motivation	57.16	9.47	8.41	0.01	Normal
	Lack of motivation	16.92	4.73	9.15	0.01	Normal
	Academic achievement motivation	130.911	18.92	11.41	0.01	Normal

According to Table 1, the distribution of the response of the samples to each of the variables is significant with 0.05, it is concluded that the distribution of these variables is normal, therefore, parametric tests were used in the analysis of information.

Test of research hypotheses:

In the test of research hypotheses with SPSS 22, Pearson correlation coefficient and multivariate regression analysis were used to investigate the relationship between variables and determine the effect of independent variable on dependent ones. In this section, firstly, the results, correlation coefficient and regression are discussed.

The main hypothesis: There is a significant relationship between self-concept, self-regulated learning and the academic achievement motivation in the second-grade high school students in Khorramabad.

Table 2: Correlation coefficient of self-concept, self-regulated learning and academic achievement motivation in the second-grade high school students

Variable		Academic achievement motivation
Self-concept	Correlation	0.44
	Significance	0.00
Self-regulated learning	Correlation	0.40
	Significance	0.00

Based on the results of Table 2, the correlation coefficient for self-concept is (r = 0.44) with significance level of (sig = 0.00) and for self-regulated learning, it is “r = 0.40” with significance level of (sig = 0.00). There was a positive and significant relationship with p <0.05 (more than 95% confidence). Therefore, the hypothesis contrary to the hypothesis of the investigator was confirmed and the null hypothesis was rejected. That is, the higher the self-concept and self-regulated learning of students, the higher the academic achievement motivation.

Table 3: Regression (coefficient of determination) of self-concept and self-regulated learning with extrinsic motivation of academic achievement in the second-grade high school students

	Correlation	Squared correlation coefficient	Standard error estimate
Self-concept	0.44	0.19	6.38
Self-regulated learning	0.40	0.16	6.39

The results of Table 3 indicate that according to the correlation coefficient of 0.44, the self-concept predicts 0.19 of academic achievement motivations and according to the correlation coefficient of 0.40, self-regulated learning predicts 0.16 of academic achievement motivation of students

Table 4: ANOVA analysis of self-concept and self-regulated learning with academic achievement motivation of the second-grade high school students

	Squared sum	Freedom degree	Mean squares	F	Significance level
Regression	2561.87	2	2561.87		
Residual	10465.41	379			
Total	13027.29	381	40.72	62.91	0.00

Table 4 shows that according to the total sum of regression squares of 13027.29 with mean squares of 2561.87, F = 62.91, p = 0.00, the predictive value of self-regulated learning and self-concept for the academic achievement motivation is significant.

The first hypothesis: There is a relationship between self-concept and the intrinsic motivation of academic achievement in the second-grade high school students in Khorramabad.

Table 5: Correlation coefficient of self-concept with intrinsic motivation of academic achievement in the second-grade high school students

Intrinsic motivation		
Self-concept	Pearson correlation coefficient	0.91
	Significance	0.00
	Number	382

Based on the results of Table 5, Pearson correlation coefficient of (r = 0.91) with significance of (sig = 0.02) indicates that there is a positive and significant relationship between self-concept and intrinsic motivation of academic achievement in the second-grade high school students with p <0.05 (with confidence greater than 95%). Therefore, the hypothesis contrary to the hypothesis of the investigator is confirmed and the null hypothesis is rejected. That is, the higher the self-concept of students in the second grade of high school, the greater the intrinsic motivation of academic achievement.

Table 6: Regression (coefficient of determination) of self-concept with intrinsic motivation of academic achievement in secondary school students

Correlation	Squared correlation coefficient	Standard error estimate
0.91	0.83	0.79

The results of Table 6 show that with respect to the correlation coefficient of 0.53, the self-concept predicts 0.28 of the intrinsic motivation of academic achievement of the second-grade high school students.

Table 7: ANOVA analysis of self-concept and intrinsic motivation for academic achievement of the second-grade high school students

	Sum of squares	Freedom degree	Mean squares	F	Significance level
Regression	887.354	1	887.354		
Residual	181.03	380			
Total	1068.38	381	0.64	1387.16	0.00

Table 7 shows that according to the total sum of regression squares of 326.989 with mean squares of 91.76, P = 0.003, F = 0.77, predictive value of self-concept is significant for intrinsic motivation of academic achievement.
The second hypothesis: self-concept is associated with the extrinsic motivation of academic achievement in the second-grade high school students in Khorramabad city.

Table 8: Correlation coefficient of self-concept with extrinsic motivation of academic achievement in the second-grade high school students

Extrinsic motivation		
Self-concept	Pearson correlation coefficient	0.10
	Significance	0.048
	Number	382

Based on the results of Table 8, the Pearson correlation coefficient of (r = 0.10) with significance of (sig = 0.48) indicates that there is a positive and significant relationship between self-concept and extrinsic motivation of academic achievement in the second-grade high school students with p <0.05 (with confidence greater than 95 percent). Therefore, the hypothesis contrary to the hypothesis of the investigator is confirmed and the null hypothesis is rejected. That is, the higher the self-concept of students in the second-grade of high school, the greater the extrinsic motivation of academic achievement.

Table 9: Regression (coefficient of determination) of self-concept with extrinsic motivation of academic achievement in the second-grade high school students

Correlation	Squared correlation coefficient	Standard error estimate
0.10	0.010	9.43

The results of Table 9 show that with respect to the correlation coefficient of 10.0, the self-concept predicts 0.010 of extrinsic motivation for academic achievement of the second-grade high school students.

Table 10: ANOVA analysis of self-concept and extrinsic motivation for academic achievement of the second-grade high school students

	Sum of squares	Freedom degree	Mean squares	F	Significance level
Regression	348.80	1	348.80		
Residual	33829.80	380			
Total	34178.61	381	89.02	3.91	0.048

Table 10 shows that according to total sum of regression squares of 34178.61 with a mean square of 348.80, F = 3.91, p = 0.048, the predictive value of self-concept is significant for the extrinsic motivation of academic achievement.
The third hypothesis: There is a relationship between self-concept and lack of academic achievement motivation in the second-grade high school students in Khorramabad.

Table 11: Correlation coefficient of self-concept with lack of academic achievement motivation in the second-grade high school students

Lack of motivation		
Self-concept	Pearson correlation coefficient	- 0.148
	Significance	0.004
	Number	382

Based on Table 11, Pearson correlation of (r = -0.1488) with sig of (004/0004) indicates that there is a negative, reverse and significant relationship between self-concept and the lack of academic achievement motivation in the second-grade high school students with p <0.05 (with confidence greater than 95%). Therefore, the hypothesis contrary to the hypothesis of the investigator is confirmed and the null hypothesis is rejected. That is, the higher the self-concept of the second-grade high school students, the lower the lack of motivation for academic achievement.

Table 12: Regression (coefficient of determination) of self-concept with lack of academic achievement motivation in the second-grade high school students

Correlation	Squared correlation coefficient	Standard error estimate
0.27	0.077	96.70

The results of Table 12 show that with respect to the correlation coefficient of 0.27, the self-concept predicts 0.077 of lack of academic achievement motivation of the second-grade high school students.

Table 13: ANOVA analysis of self-concept and lack of academic achievement motivation of the second-grade high school students

	Sum of squares	Freedom degree	Mean squares	F	Significance level
Regression	961.04	1	961.04		
Residual	11494.78	380			
Total	12455.83	381	44.90	21.40	0.00b

Table 13 shows that according to total sum of regression squares of 961.04 with mean squares of 961.04, F = 21.40, p = 0.00, the predictive value of self-concept is significant for the lack of academic achievement motivation.

The fourth hypothesis: There is a relationship between self-regulated learning and intrinsic motivation of academic achievement in the second-grade high school students in Khorramabad

Table 14. Correlation coefficient of self-regulated learning and intrinsic motivation of academic achievement in the second-grade high school students

Intrinsic motivation		
Self-regulated learning	Pearson correlation coefficient	0.15
	Significance	0.002
	Number	382

Based on the results of Table 14, Pearson correlation coefficient of (r = 0.15) with significance of (sig = 0.002) indicates that there is a positive and significant relationship between self-regulated learning and intrinsic motivation of academic achievement in the second-grade high school students with p <0.05 (with confidence greater than 95 percent). Therefore, the hypothesis contrary to the hypothesis of the investigator is confirmed and the null hypothesis is rejected. That is, the higher the self-regulated learning of students in the second-grade of high school, the greater the intrinsic motivation of academic achievement.

Table 15: Regression (coefficient of determination) of self-regulated learning and intrinsic motivation of academic achievement in the second-grade high school students

Correlation	Squared correlation coefficient	Standard error estimate
0.29	0.086	8.52

The results of Table 15 show that with respect to the correlation coefficient of 0.29, the self-regulated learning predicts 0.086 of intrinsic motivation for academic achievement of the second-grade high school students.

Table 16: ANOVA analysis of self-regulated learning and intrinsic motivation for academic achievement of the second-grade high school students

	Sum of squares	Freedom degree	Mean squares	F	Significance level
Regression	1746.67	1	1746.67		
Residual	18584.22	380			
Total	20330.90	381	72.59	24.06	0.00

Table 16 shows that according to total sum of regression squares of 20330.90 with mean squares of 1746.67, F = 24.06, p = 0.00, the predictive value of self-regulated learning is significant for intrinsic motivation of academic achievement.
The fifth hypothesis: There is a relationship between self-regulated learning and extrinsic motivation of academic achievement in the second-grade high school students in Khorramabad.

Table 17. Correlation coefficient of self-regulated learning and extrinsic motivation of academic achievement in the second-grade high school students

Extrinsic motivation		
Self-regulated learning	Pearson correlation coefficient	-0.25
	Significance	0.00
	Number	382

Based on the results of Table 17, Pearson correlation coefficient of (r = -0.25) with significance (sig = 0.00) indicates that there is a negative, reverse and significant relationship between self-regulated learning and extrinsic motivation of academic achievement in the second-grade high school students with p <0.05 (with confidence greater than 95 percent). Therefore, the hypothesis contrary to the hypothesis of the investigator is confirmed and the null hypothesis is rejected. That is, the higher the self-regulated learning of students in the second-grade of high school, the lower the extrinsic motivation of academic achievement.

Table 18: Regression (coefficient of determination) of self-regulated learning and extrinsic motivation of academic achievement in the second-grade high school students

Correlation	Squared correlation coefficient	Standard error estimate
0.24	0.065	20.51

The results of Table 18 show that with respect to the correlation coefficient of 0.24, the self-regulated learning predicts 0.065 of extrinsic motivation for academic achievement of the second-grade high school students.

Table 19: ANOVA analysis of self-regulated learning and extrinsic motivation for academic achievement of the second-grade high school students

	Sum of squares	Freedom degree	Mean squares	F	Significance level
Regression	114314.35	1	7384.88		
Residual	106929.47	380			
Total	11.4314.35	381	420.98	17.54	0.00

Table 19 shows that according to total sum of regression squares of 114314.35 with mean squares of 7384.88 and F = 17.54, p = 0.00, the predictive value of self-regulated learning is significant for extrinsic motivation of academic achievement.

The sixth hypothesis: There is a relationship between self-regulated learning and lack of academic achievement motivation in the second-grade high school students in Khorramabad

Table 20: Correlation coefficient of self-regulated learning and lack of academic achievement motivation in the second-grade high school students

Lack of motivation		
Self-regulated learning	Pearson correlation coefficient	-0.178
	Significance	0.004
	Number	382

Based on the results of Table 20, Pearson correlation coefficient (r = -0.178) with significance (sig = 0.004) indicates that there is a negative, reverse and significant relationship between self-regulated learning and lack of academic achievement motivation in the second-grade high school students with p <0.05 (with confidence greater than 95 percent). Therefore, the hypothesis contrary to the hypothesis of the investigator is confirmed and the null hypothesis is rejected. That is, the higher the self-regulated learning of students in the second-grade of high school, the lower the extrinsic motivation of academic achievement.

Table 21: Regression (coefficient of determination) of self-regulated learning and lack of academic achievement motivation in the second-grade high school students

Correlation	Squared correlation coefficient	Standard error estimate
0.178	0.032	6.99

The results of table 21 show that with respect to the correlation coefficient of 0.178, the self-regulated learning predicts 0.032 of lack of motivation for academic achievement of the second-grade high school students.

Table 22: ANOVA analysis of self-regulated learning and lack of motivation for academic achievement of the second-grade high school students

	Sum of squares	Freedom degree	Mean squares	F	Significance level
Regression	410.03	1	410.03		
Residual	12510.97	380			
Total	12921.00	381	48.87	8.39	0.004

Table 22 shows that according to total sum of regression squares of 12921.00 with mean squares of 410.03 and F = 8.39, p = 0.004, the predictive value of self-regulated learning is significant for lack of academic achievement motivation.

Discussion

Regarding the main hypothesis of the research, there was a positive and significant relationship between self-concept, self-regulated learning and academic achievement motivation. Also, the results of regression analysis showed that self-concept and self-regulation variables predict respectively 0.19 and 0.16 of academic achievement motivation of the second-grade high school students. The results of the analysis of the fourth hypothesis of the research were consistent with the result of Zimmerman & Ponz, 2017[16], Pintrich (2016) [25], Jing (2017) [30]. Regarding the first hypothesis, there was a positive and significant relationship between self-concept and the intrinsic motivation of academic achievement among the second-grade high school students. Also, the results of regression analysis showed that self-concept predicted 0.28 of the intrinsic motivation of academic achievement of the second-grade high school students. The results of the first hypothesis of the research are consistent with results of Pintrich (2016) [25]. Regarding the second hypothesis, there was a positive and significant relationship between self-concept and the extrinsic motivation of academic achievement among the second-grade high school students. Also, the results of regression analysis showed that self-concept predicted 0.010 of the extrinsic motivation of academic achievement of the second-grade high school students. The results of the second hypothesis of the research are consistent with research results of Pintrich (2016) [25] and Hansford & Hattie (2017)[1]. Regarding the third hypothesis of the research, there is a negative and significant relationship between self-concept and lack of academic achievement motivation. Also, the results of regression analysis showed that self-concept predicted 0.077 of lack of academic achievement motivation of the second-grade high school students. Regarding the fourth hypothesis, there was a positive and significant relationship between self-regulated learning and the intrinsic motivation

Regarding the main hypothesis of the research, there was a positive and significant relationship between self-concept, self-regulated learning and academic achievement motivation. Also, the results of regression analysis showed that self-concept and self-regulation variables predict respectively 0.19 and 0.16 of academic achievement motivation of the second-grade high school students. The results of the analysis of the fourth hypothesis of the research were consistent with the result of Zimmerman & Ponz, 2017[16], Pintrich (2016) [25], Jing (2017) [30]. Regarding the first hypothesis, there was a positive and significant relationship between self-concept and the intrinsic motivation of academic achievement among the second-grade high school students. Also, the results of regression analysis showed that self-concept predicted 0.28 of the intrinsic motivation of academic achievement of the second-grade high school students. The results of the first hypothesis of the research are consistent with results of Pintrich (2016) [25]. Regarding the second hypothesis, there was a positive and significant relationship between self-concept and the extrinsic motivation of academic achievement among the second-grade high school students. Also, the results of regression analysis showed that self-concept predicted 0.010 of the extrinsic motivation of academic achievement of the second-grade high school students. The results of the second hypothesis of the research are consistent with research results of Pintrich (2016) [25] and Hansford & Hattie (2017)[1]. Regarding the third hypothesis of the research, there is a negative and significant relationship between self-concept and lack of academic achievement motivation. Also, the results of regression analysis showed that self-concept predicted 0.077 of lack of academic achievement motivation of the second-grade high school students. Regarding the fourth hypothesis, there was a positive and significant relationship between self-regulated learning and the intrinsic motivation of academic achievement among the second-grade high school students. Also, the results of regression analysis showed that self-regulated learning predicted 0.086 of the intrinsic motivation of academic achievement of the second-grade high school students.

Regarding the fifth hypothesis, there was a negative, reverse and significant relationship between self-regulated learning and the extrinsic motivation of academic achievement among the second-grade high school students. Also, the results of regression analysis showed that self-regulated learning predicted 0.065 of the extrinsic motivation of academic achievement of the second-grade high school students. The results of the fifth hypothesis of the research are consistent with result of Hansford & Hattie (2017) [1]. Regarding the sixth hypothesis, there was a negative, reverse and significant relationship between self-regulated learning and lack of academic achievement motivation among the second-grade high school students. Also, the results of regression analysis showed that self-regulated learning predicted 0.032 of lack of academic achievement motivation of the second-grade high school students.

Conclusion

According to the results of the research, in educational system, the academic self-concept and self-regulated learning can be improved by counseling and clinical psychology programs in schools in order to develop academic achievement of students.

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