

## The effectiveness of self-regulation skills training on motivational orientation and academic achievement of students

Hosseini Ashlaghi, Seyyed Mahmud<sup>1</sup>, HeidariGorji, Ali Morad<sup>2\*</sup>, Darabinia, Morteza<sup>3</sup>, MahfooziJooybari, Mojtaba<sup>4</sup>, Ranjbar, Mansour<sup>5</sup>

<sup>1</sup>M A student of educational management, Faculty of Paramedical, Mazandaran University of Medical Sciences, Sari, Iran, , <sup>2</sup>Faculty member, EDC Assist professor, Mazandaran University of Medical Sciences, Sari, Iran

<sup>3</sup>Faculty member, Assist professor in faculty of medical, Mazandaran University of Medical Sciences, Sari, Iran

<sup>4</sup>Mazandaran University of Medical Sciences, Sari, Iran, <sup>5</sup>Faculty member, EDC Assist professor, Mazandaran University of Medical Sciences, Sari, Iran

**Received: 10<sup>th</sup> Jan 2017, Accepted: 23<sup>rd</sup> Jan 2017, Published: 15<sup>th</sup> March 2017**

### Abstract

This study aimed to examine the effectiveness of self-regulation skills training on motivational orientation and academic achievement of students. This is an quasi-experimental research. The population consisted of all students who were studying in the school of paramedical in academic year of 2015-16 in Sari, Iran and 40 of them were selected as samples by systematic sampling method. Data collection tool was Harter's academic motivation scale. Data was analyzed by applying independent t-test. The results show that self-regulation skills training affect the motivational orientation and academic achievement and there is significant difference between them. Accordingly, it can be concluded that self-regulation skills training affect the students' academic achievement and paying attention to teach these skills is essential for self-regulation and self-awareness.

**Key Words:** self-regulation, motivational orientation, academic achievement

### Introduction

One of the criteria for the effectiveness of the education system is students' academic achievement and underachievement. So exploring and studying the different variables affecting these variables will lead to better understanding and prediction of effective variables. One type of the factors affecting the academic achievement is motivational and cognitive factors (Baghani and Dehghani, 2011). Academic achievement in courses and factors affecting it as one of the key variables in higher education have been always of interest to researchers and educational psychologists. One of the most important factors recognized in this context is self-regulation skills. Self-regulated learning, in which the role of individual in learning process is concerned, has been of interest to many researchers in academic achievement (Pintrich and Paul, 1997; Zimmerman, & Cleary, 2004). This structure can affect academic achievement and its related factors such as cognitive engagement and motivational factors (GholamaliLavassani et al, 2008). In recent years, educators and psychologists have performed

much research in the field of learning issues and variables related to them and offered several theories on improving the teaching-learning process. One of these theories is self-regulated learning theory. Self-regulated theories provide the opportunities for learner in which he can improve his learning using motivational and learning approaches (Afrouz, 2007). In self-regulated learning, the role of individual in learning process is concerned. Since 1980s, some studies have been done on how motivational factors and cognitive engagement interact with each other and jointly affect students' learning and academic achievement. On the other hand, much research have attributed the students' academic problems to motivational and cognitive factors and tried to identify the factors affecting these variables and to strengthen them. Self-regulation approaches have been known as cognitive engagement and motivational (GholamaliLavassani et al, 2008). Self-regulation produces and directs the thoughts, emotions and behavior by self in order to reach the goal (Seif, 2010). Green and Azerdo (2007) say that although there is disagreement between experts on the theoretical definition of self-regulation, but, all of them believe that self-regulated learners are active and organize their learning effectively by monitoring and using strategy. On reciprocal determinism, personal factors such as beliefs, expectations, attitudes, knowledge, approaches, and so on, environmental events such as physical and social events and behaviors, both practical and verbal behaviors have mutual impact on each other and none of these three components can be considered as a determinant of human behavior. He called this trilateral interaction "reciprocal determinism" (Seif, 2010). Zimmerman and Rizemberg (1997) have identified six factors of self-regulation affecting academic function to optimize their studies and different processes are done through this. Motivation is classified into two groups of intrinsic and extrinsic motivation according their origins. Intrinsic motivation is an inclination to address the desires and to apply abilities in the work, to search optimized challenges and to master them. Extrinsic motivation arises from

consequences such as reward and encouragement (Hassanzadeh and MahdinezhadGorgi, 2012). Given the importance of self-regulation in academic achievement, many studies have been performed. Yusefi and Firouznia (2009), in their study on motivation and academic achievement of medical students in Isfahan, reported that there is a significant relationship between the components of motivation and academic achievement of students. Samadi (2012), in her study entitled "the relationship between motivational orientation and learning approaches in explaining the academic achievement", stated that there is a positive relationship between academic achievement and learning approaches and also motivational orientation. Zimmerman and Cleary (2004), in their study, found that one of the most important factors for the lack of academic achievement is not applying the self-regulation skills. Failure at doing homework and solving problems results in their low self-efficacy and therefore, they rely on their skills less and will have more academic problems. Leper, Courporis and Ayengar (2005) suggested that having a combination of intrinsic and extrinsic motivation for student is more adaptive. Overall, all viewpoints on motivation have confirmed the idea that the students are aroused through both autonomous and controlled motivation. Pintrich (2003) believed that the result or outcome such as academic achievement is a result of a combination of different motivations. So, instead of trying to reject or confirm one motivation to predict academic consequences, it is better to adopt an approach to examine the combination of different motivational orientations. For this, he suggested person-centered approach. In this approach, the characteristics, competencies and behaviors as well as how to combine these variables with each other are focused (Hassanzadeh and MahdinezhadGorgi, 2012). Fouladchang (2003), in her study entitled "the effects of self-regulation skills and increase in self-efficacy beliefs on the academic performance of high school students", showed that the experimental group which did self-regulation skills training for 6 sessions, had better performance than control group. About students, cognitive skills – self regulation- and academic motivation are very important, because the students find the necessary incentives to achieve an educational purpose or a certain degree of competence in their work to succeed in learning and achieve academic achievement. The main subject of this paper is to evaluate the effectiveness of self-regulation skills training on motivational orientation and academic achievement of the students studying in the school of paramedical in Sari, Iran. In this study, three hypotheses were examined and discussed.

Self-regulation skills training increase the students' intrinsic motivation.

Self-regulation skills training increase the students' extrinsic motivation.

Self-regulation skills training affect the students' academic achievement.

### **Methodology**

The method of this study was quasi-experimental with two control and experimental groups and also with the use of pre-test and post-test. The population consisted of all students who were studying in the school of paramedical in academic year of 2015-16 in Sari, Iran and 40 of them were selected as samples. Firstly, a list of students was selected and then, they were divided into two control and experimental groups randomly. In this study, Harter's standard academic motivation questionnaire including 33 items was used to examine the academic motivation among students. This is a modified Harter's scale as a tool for examination of academic motivation. As said, original Harter's scale examines the academic motivation with bipolar questions, one of them is intrinsic motivation and another one is extrinsic motivation and the answer of each question can have only intrinsic or extrinsic reasons. In Harter's scale, each question considers only one of intrinsic and extrinsic reasons. This questionnaire is based on Likert scale (never, 1; rarely, 2; sometimes, 3; often, 4; almost always, 5). Its reliability was confirmed by Bohrani (2005). The reliability of subscales was confirmed by Badri et al. (2012). Cronbach's alpha for the subscales of motivation, external regulation, followed regulation, identified regulation and intrinsic motivation were 0.73, 0.61, 0.61, 0.69 and 0.69, respectively. In this study, with performing primary design, 30 questions were asked and Cronbach's alpha coefficient was estimated 0.92. To examine the academic achievement, grade point average was used, the points of previous term were considered as pre-test and the points of new term were considered as post-test.

After sampling, the class was divided into two parts, the pre-test was presented and the protocol of self-regulation skills (Table1), including following contents, was offered to experimental group in 10 sessions used by the study of Dembo&Ation (2000), based on the theory provided by Zimmerman and Rizemborg (1997), quoted by Afrouz (2007).

**Table1. The sessions of self-regulation skills**

<b>First session (communication)</b>	Communicating with students and introducing
--	---

	ourselves as researchers and explaining about the study briefly that was conducted with pre-test and by coordinating with officials.	(place management training)	a suitable place, suitable light and air for studying and some suggestions such as having a fixed place, being in a comfortable and proper situation and etc. were discussed.
<b>Second session (creation of motivation)</b>	In this session, the importance of motivation in life and creating an interest in learning were reminded to students and they were taught to give impetus themselves for academic achievement after learning the contents by intrinsic motivation such as saying excellent to themselves and/or extrinsic motivation such as being with friends, going out with classmates, going to clubs and etc.	<b>Eighth session (training of help-seeking skills)</b>	How to ask for help from others and forming the communities of consultation and studying and how to ask questions of others and seek help from others politely and asking without a sign of weakness were discussed.
<b>Third session (training cognitive learning techniques)</b>	In this session, the methods of studying, how to review the contents in mind, how to say the contents in their own languages, how to ask questions, underlining the important content and etc. were expressed.	<b>Ninth session (motivational beliefs training)</b>	Including intrinsic motivation, extrinsic motivation and motiveless.
<b>Forth session (training of meta-cognitive learning techniques)</b>	In this session, how to explain, summarize, organize the contents, planning and control, monitoring and regulation approaches, the methods of participatory study and etc. were expressed.	<b>Tenth session</b>	Summarizing the contents, performing post-test and thanking students for their cooperation.
<b>Fifth session (training of self-monitoring skills)</b>	In this session, review of readiness and the status of motivation, the place of studying, review of studying method, review of studying time, asking himself about the understanding of reading, repeating in the case of understanding, changing the method of studying and etc. were expressed and investigated.	The data was analyzed by using the Statistical Package software for Social Sciences- SPSS V.20. In order to describe the data, the statistical indicators of mean and standard deviation were used in pre- and post-test. In order to compare the mean scores of experimental and control groups, the independent t-test was used.	
<b>Sixth session (time management training)</b>	In this session, determining the priorities, listing the fixed and variable activities, how to use schedule and making a plan were expressed.	<b>Results and Discussion</b> According to table 2, the mean score of intrinsic motivation of experimental group has increased from 28.60 (pre-test) to 30.35 (post-test), while in control group, it has changed from 27.05 (pre-test) to 26.7 (post-test). The mean score of extrinsic motivation of experimental group has increased from 48.85 (pre-test) to 52.8 (post-test), while in control group, it has changed from 48.8 (pre-test) to 49 (post-test). The mean score of academic achievement of experimental group has increased from 13 (pre-test) to 14.80 (post-test), while in control group, it has changed from 12.80 (pre-test) to 12.90 (post-test).	
<b>Seventh session</b>	In this session, the effect of the place of studying on the learning and how to choose	<b>Table2.</b> Indices of Central Tendency and Dispersion of the scores of intrinsic and extrinsic motivation and academic achievement	

Statistical index Group		Test	Mean	Standard deviation
<b>Intrinsic motivation</b>	Experimental	Pre - test	28., 6	6,124

		Pos t-test	30,35	5,687
<b>Extrinsic motivation</b>	Control	Pre - test	27,05	5,104
		Pos t-test	26,7	4,462
	Experimental	Pre - test	48,85	6,612
<b>Academic achievement</b>	Control	Pos t-test	52,8	6,023
		Pre - test	48,8	4,936
	Experimental	Pos t-test	49	3,893
		Pre - test	13	1,456
	Control	Pos t-test	14,80	1,576
		Pre - test	12,80	1,567
		Pos t-test	12,90	1,944

Table 3 shows the comparison between the intrinsic motivation of control group and the one of experimental group. Calculated  $t$  ( $t=2.285$ ) is greater than critical  $t$  ( $t=2.021$ ) at the probability level of 95% ( $\alpha=5\%$ ) with  $df=38$ . Therefore, the null hypothesis is rejected and the research hypothesis is confirmed. Accordingly, the difference between the means of these two groups in terms of intrinsic motivation is statistically significant. Also, comparing the extrinsic motivations of the groups (Table3) shows that calculated  $t$  ( $t=2.370$ ) is greater than critical  $t$  ( $t=2.021$ ) at the probability level of 95% ( $\alpha=5\%$ ) with  $df=38$ . Therefore, the null hypothesis is rejected and the research hypothesis is confirmed. Accordingly, the difference between the means of these two groups in terms of extrinsic motivation is statistically significant. Comparing the academic achievements of the groups (Table3) shows that calculated  $t$  ( $t=3.395$ ) is greater than critical  $t$  ( $t=2.021$ ) at the probability level of 95% ( $\alpha=5\%$ ) with  $df=38$ . Therefore, the null hypothesis is rejected and the research hypothesis is confirmed. Accordingly, the difference between the means of

these two groups in the course of biology is statistically significant.

**Table3.** Independent t-test results of intrinsic and extrinsic motivations and academic achievement in post-test

Variable	Group	Mean	Standard deviation	Calculated t-statistic	Critical t-statistic	df	Sig
<b>Intrinsic motivation</b>	Experimental	30,35	5,678	2,285	2,021	38	0,030
	Control	26,7	4,462				
<b>Extrinsic motivation</b>	Experimental	52,80	6,023	2,370	2,021	38	0,023
	Control	49	3,893				
<b>Academic achievement</b>	Experimental	14,80	1,576	3,395	2,021	38	0,002
	Control	12,90	1,944				

### Results and Discussion

The results show that self-regulation training increases the intrinsic motivations of the students. So, the result of this study is consistent with the results of the studies by Latifian (2003), Sharifi (2006), Yusefi et al. (2009), Hassanzadeh (2002), Fouladchang (2003), Rattelle et al. (2007), Meece and BlumenFeld (1998), Bodro and Ramsted (2005) and Samadi (2012). According to Deci and Ryan (2000), when people understand themselves competent and autonomous, they tend to have intrinsic motivation. The behavior of these people are driven from within, these people will not simply allow others or outside events to influence them. Behavior motivated by intrinsic motivation, regardless of the results of activities, is along with pleasure and satisfaction (Hassanzadeh and Mehdinejad, 2012). Wenzel and Wigfield (2011) noted that intrinsic motivation is a key feature that successful people have in the academic background and progress-oriented people especially people whose their motivational orientation is innate, are self-motivated in learning. Zimmerman and Cleary (2004) reported that the learners who have intrinsic motivation, more likely have adapted cognition, stronger motivational consequences and also higher academic achievement than their classmates. Meece and BlumenFeld (1998) with use of self-regulation approaches and regression analysis examined the relationship between motivational variables in the high school students. The results show that intrinsic motivation has effect indirectly through the goals of achievement and the use of self-regulation approaches.

The results show that self-regulation training increases the extrinsic motivations of the students. So, the result of this study is consistent with the results of the studies by Seif (2010) and Mousavinejad (2000). Extrinsic motivation arises from environmental incentives and implications

such as food or money. Extrinsic motivations arise from implications which are separate from that activity. When it is tried to get a high score, win a prize, influence peers and so on, the behaviors are motivated from out. Extrinsic motivation arises from the motivation of "do it to achieve it". So, extrinsic motivation is an environmental reason to start or continue an action (Hassanzadeh, Mehdinejad, 2012). Yusefi et al. (2009) in their study on the relationship between motivation and academic achievement of medical students in Isfahan stated that there are significant relationships between the components of motivation and academic achievement of students. According to the study by Wang and Guthrie (2004), extrinsic motivational orientation or external rewards reduce an individual control on self-determination perception (Samadi, 2012). Self-regulation skills' training has an impact on students' academic achievement. The result is consistent with the results of the studies by Latifian (2003), Afrouz. (2007), Sharifi (2006), Yusefi et al. (2009), GholamaliLavasani et al. (2008), Hassanzadeh (2002), Mousavinejad (2000), Zimmerman and Cleary (2004), Rattelle et al. (2007), Boudreau and Ramsted (2005), Baghani and Dehghani (2011) and Samadi (2012). GholamaliLavasani et al. (2008) in their study entitled "the effects of self-regulation skills' training on learning approaches, self-efficacy and academic achievement of students", concluded that self-regulation skills' training has significant effect on the academic achievement. Also, experimental group significantly showed self-efficacy and learning approaches compared to control group after training. Mousavinejad (2000) studied on the relationship between motivational beliefs and self-regulation learning approaches and academic achievement of third grade high school male and female students. The results showed positive and significant relationship between some self-regulation approaches and self-efficacy. Generally, many studies have been performed on the relationship between the use of self-regulation approaches and academic achievement, including Zimmerman and Risemberg (1997), Pintrich and Groote (1990), Swalfedr and Karin (2006). The results of most mentioned research showed that self-regulation has directly and indirectly affect the students' academic performance or academic achievement (GholamaliLavasani et al., 2008). Also results showed that self-regulation programs such as organizational participation lead managers and staff to exchange their ideas with each other and this creates friendly environment along with trust and mutual confidence in the organization (Hosseini Ashlaghi et al., 2016). Self-regulation programs can encourage the students for more academic achievement by creating motivation and they can help them to be interest in learning and

they learn to motivate themselves for academic achievement by strengthening intrinsic and extrinsic motivations and also, these programs familiarize the students with mental learning methods, the method of asking, dealing with problems and organizing the contents, planning and control, monitoring and self-regulation approaches and method of participatory studying, so they take an important step towards academic achievement(HeidariGorji AM et al., 2017). They could have significant impact on students' learning and intellectual enrichment by creating the skills of self-motivation preparation, reviewing studying method, reviewing studying time, repeating, changing the method of studying and determining the priorities, listing fixed and variable activities, how to use the schedule, creating flexible programs, methods of how to ask other for help politely, forming consultation group and how to ask question. given the obtained results, by including the curricula entitled self-help skills, self-regulation, self-management and so on the undergraduate and graduate students can be helped to strengthen their intrinsic and extrinsic motivations for more academic achievement in their courses and by increasing seminars and distance education, it can have significant impact on students' academic enrichment.

## **References**

- Afrouz, Gh. (2007). Effectiveness of self-regulation skills training on the academic performance of blind students: Journal of research in the field of exceptional children, 24, 169-186.
- Badri, R., Fathi Azar, E., Vahedi, Sh. (2012). Learning motivation types of high school students in Tabriz Town, person-centered Analysis: Journal of Educational innovations, 41, 51-70.
- Baghani, M., &DehghaniNeishabouri, M. (2011). The effects of academic motivation, self-efficacy and approaches of study on students' academic achievement: 1st national conference on the findings of cognitive science in education, November, Ferdowsi University of Mashhad.
- Bohrani, M. (2005). Academic motivations of high school students in Fars Province and the factors associated with it: Journal of Humanities and Social Sciences, 4, 104-115.
- Boudreau J. W & Ramstad P. M. (2005). Talentship and the Evolution of Human Resource Management: From 'Professional Practices' To 'Strategic Talent Decision Science': Human Resource Planning, 8, 17-26.

- Deci, E. L. & Ryan, R. M. (2000). Human needs and the self-determination of behavior: psychological inquiry, 11, 227 – 268.
- Dembo , M . H. & Eaton, M . J. (2000). self-regulation of academic Learning in middle-level school: The Elementary school Journal, loocis, I, 451-473.
- Fouladchang, M. (2003). The effectiveness of self-regulation skills and increase in self-efficacy beliefs on academic performance of high school students: Journal of Psychology, 7, 120-127.
- GholamaliLavasani, M., Hejazi, E., MalekZadeh, A. (2008). The effect of self-regulation approaches on learning approaches, self-efficacy and goals of progress of second grade female students failed in mathematics: Journal of Psychology and Educational Sciences, 4, 45-65.
- Green, J. A. &Azevedo, R. (2007). A theoretical review of Winne and Hadwin's model of self-regulated learning: New perspectives and directions: Review of Educational Reseach,77, 334-372.
- Hassanzadeh, R. (2002). The relationship between motivation, source of control and academic achievement of students: Journal of Educational innovations, 81, 107-120.
- Hassanzadeh, R., MahdinejadGorgi, G. (2012). Theories of motivation in education: Tehran, RavanPress.
- HeidariGorji AM, Darabinia M, Ranjbar M. (2017). Relationship Between Emotional Intelligence and Job Motivation Among Faculty Staff in Mazandaran University of Medical Sciences, Iran. Iranian Journal of Psychiatry and Behavioral Sciences. (In Press).
- Hosseini Ashlaghi M., HeidariGorji, AM., Darabinia, M., Ranjbar, M. (2016). Impact of suggestions system on the employee performance in Mazandaran University of Medical Sciences: International Journal of Humanities and Cultural Studies (IJHCS), 1, 1370-1383.
- Latifian, M.(2003). Opportunities reducing motivation, self-regulation approaches and academic achievement: Journal of Social Sciences and Humanities, Shiraz University, Special Issue of Educational science, 20, 47 -57.
- Lepper, M. R., Corpus, J. H &Iyengar, S. S. (2005). Intrinsic and extrinsic motivational orientations in the classroom, Age differences and academic correlates: Journal of Educational Psychology, 97, 184–196.
- Meece, J &Blumen Feld, p. c. (1998). Student goal orientation and cognitive engagement in class room activities: journal of psychology, 80, 514-523.
- Mousavinejad, Z. (2000). The effect of self-regulation and self-concept on the academic achievement of 3rd grade high school students with mathematics discipline, Schools of Shahryar Town, Master thesis: University of teacher training.
- Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts: Journal of Educational Psychology, 95, 667–686.
- Pintrich, Paul, Rosser,W& De Groote .(1997). Classroom and Individual Differences in Early Adolescents, Motivation and Self-Regulated Learning: Journal of Early Adolescence, 14, 139-161.
- Rattelle, F, Gnay, F & Vallerand, larose, J. (2007). Autonomous, controlled and amotivated Types of Academic motivation: Journal of Educational psychology , 99, 734 – 746.
- Samadi, M. (2012). The relationship between motivational orientation and learning approaches in explaining the academic achievement of students: Journal of Educational Approaches, 2, 105-111.
- Seif, A. (2010). Modern educational psychology: Tehran, Doran Press.
- Sharifi, H. (2006). Assessment of intrinsic and extrinsic motivations and academic achievement of the students of different academic levels in terms of educational problems and the share of these variables in explaining their academic achievement: Journal of Educational Innovations, 5, 171-200.
- Swalender, L. & Karin, T. (2006). Influence of family based prerequisites, reading attitude and self-regulation on reading ability contemporary: educational psychology, 25, 13-19 .
- Wang HY, Guthrie JT. (2004). Modeling the effects of intrinsic motivation, extrinsic motivation, amount of reading and past reading achievement on text comprehension between U.S and Chinese students: Read Res Q, 39, 162-8.
- Wentzel, K. R., & Watkins, D. E. (2011). Peer relationships and learning: Implications for instruction. In R. Mayer and P. Alexander (Eds.), Handbook of Research on Learning and Instruction .New York, NY: Routledge, 322- 343.

Yusefi, A., Qasemi, Gh. and Firouznia, S. (2009). The relationship between motivation and academic achievement of medical students of Isfahan University: Journal of Education in Medical Sciences, 9, 79-85.

Zimmerman , B. J & Cleary, J. C .(2004). Self-regulation Empowerment program: A school bused program to enhance self-regulated and self-motivation. Cycles of student learning. Psychology in the schools, 41, 527-550.

Zimmerman, B. J. &Risemberg, R. (1997). Self-regulatory dimensions of Academic Learning and motivation: Journal of psychology . 81, 105– 125.