

*Original Article*

## The relationship between self-regulating strategies and academic performance of Hormozgan University undergraduate students

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### ABSTRACT

The main purpose of this study has been investigated the relationship between Self - regulating strategies and academic performance of Hormozgan University undergraduate students. The total numbers of participants in this study were 420 students (247 female and 173 male) which selected by stratified random sampling method. Using the data was gathered through the Pintrich et al questionnaire along with the first semester average of 2010-2011. These data were analyzed by statistics methods such as multiple regression and multivariate variance. The results showed that there is a significant and positive relation between the cognitive, metacognitive, motivational and resource management strategies with academic performance. But only the resource management strategy has a positive and significant relationship with academic performance in multiple regression analysis. The results of this study also showed that there is a significant difference between male and female students in resource management.

**Keywords:** Self - regulating strategies, Academic performance

### INTRODUCTION

Academic life is one of the most important dimensions of the people's life which has a significant effect on the other matters of life. In this regard, the subject of academic failure and the students' low level of academic activity in school and university is a basic problem of educational system in any country (Zahrakar, 2006).

The problems of educational systems, especially, higher education centers and universities about continual and effective teaching and learning are so important. The results of different researches show that many of learners in universities have not effective and continual learning, so, the academic failure and its resulted social-psychological problems are a threat for each society (Mayo, 1993). On the other hand, those who graduated with academic failure don't have the required scientific ability (Lazin, 1991).

Academic failure in university is a worrying matter (Mesri, 2008). And is one of the important problems in higher education centers, which not only can cause students have mentally problems, but also can cause them to be in the risk of inhibition of education, and it may be impossible for student to compensate it. And also it can make obstacles in desirable exploiting scientific principles for training human force and financial and human resource and can cause social unsatisfactory (Alikhani et al., 2005).

There are many factors that affect the academic performance. One of them is cognitive matters. Cognitive matters have a significant effect on human behavior, especially on the learning. Increasingly, this idea is reinforced by psychologists that learning is not a constant matter and however, the innate talent and intelligence are the determinants of quality and quantity of human learning, there are other factors that along these innate and non-acquirable prerequisites are effective and important in learning. One of the effective factors in learning is the self-regulated learning strategies (Jain & Dowson, 2009).

Self-regulation or self-regulated learning is an active or constructive process by which the learners form their learning aims and then they observe, control and evaluate their cognitive and motivational and behavioral processes according to pre-determined aims and resulted characteristics from learning environment (Pintrich, 2000 quoted by Schunk, 2005).

Many connoisseurs represent different kinds of self-regulation. In this research, Pintrich et al.'s model is used. In this model, self-regulation in learning is applied to using cognitive, ultra-cognitive and motivational strategies and resource management.

1. Cognitive strategy: this strategy is used for memorizing, remembering and understanding the subject. These strategies are used for both simple and complicated assignments (Pintrich, 1986).

2. Meta-cognitive strategy: meta-cognition point to thinking when we are doing an assignment. Ultra-cognition includes activities like controlling, planning, self-observing, aim selecting, inspecting and reviewing (Hong & Vanil, 2002 quoted by Mostafaei, 2008).

3. Motivational strategy: motivation is important in learning, and is a driving force that works beyond successful performance of three other strategies in self-regulated learning (Heo, 2000, quoted by Dasta, 2009).

4. Resource managing strategy: learners use this strategy for managing and controlling their environment. This strategy includes managing and controlling the time, effort, studying environment and getting help from teachers and coequals. These strategies help learners to be consistence with their environment and change it for meeting their aims and requirements.

In recent years, different research and studies present the role of self-regulated strategies in academic activity and advancement. Schunk and Zimmerman (1994, quoted by Wolters, 1998) report that it is more likely that self-regulated learners have more adapted cognition, stronger motivational consequences, and better academic activity than their unsuccessful classmates. Bidjerano & Dai (2007) found that one of the obvious and prominent anticipators of academic activity is learning strategies. Those who use these strategies in their learning, know that how each of the learning situations need these strategies. In Iran, researchers like Motavalli (1997), Salehi (1998), Avanesyan (1998), Bashavard (200), Salehi (2001), Hamidi (2001) and Shafaqi (2003) have done researches about the effect of teaching cognitive and meta-cognitive strategies on improving learning (reading comprehension, mathematics, and second language), the results show that teaching these strategies is effective in learning (quoted by Ababaf, 2008).

Regarding the importance of studying the students' academic performance and its affecting factors, and also the available evidences about the decreased academic activity in recent years, this research attempts to study the relation between self-regulation strategies and academic performance among the students of university of Hormozgan. So, the basic aim of this research is studying the relationship between self-regulation strategies and academic performance.

## MATERIAL AND METHODS

Research plan is correlation and the information is collected in a survey. Multiple regression analyses were used to explain and predict criterion variable by the use of predictor variables. For assessing significance of model in regression model we used F test, and statistical T test was used to determine significance of Beta coefficient. Statistical society of the research includes all the undergraduate students of the University of Hormozgan in 2010-2011. For selecting the sample we used stratified random sampling method. Based on this method 420, undergraduate students selected which 247 of them were female and 172 of them were male. The information gathering tool was Pintrich et al.'s self-regulation strategy questionnaire, which evaluates the motivational, meta-cognitive and cognitive strategies and resource management. The validity of questionnaire was measured using the ideas of assistant professor, consultant and the available scientific resources in an appropriate level and its reliability was calculated 0.85 by cronbach's alpha method. For data analyzing, the standard deviation and average indices were calculated in descriptive static section, and the Pearson interrelationship, multi-regression analyze and multi-variation variance analyze were used in deductive section.

## RESULTS

Question 1: is there any relationship between the components of self-regulation strategies and academic performance among the studied students?

In order to answer this question, at first the standard deviation and average of research variables are shown in table 1, and then the interrelationship matrix of variables for the studied group is represented in table 2.

**Table 1.** Average and standard deviation of academic performance and self-regulation strategies

Gender	Number	Cognitive		Metacognitive		Motivation		Resource management		Academic performance	
		$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S
Female	247	84.15	14.95	63.66	11.36	30.1	6.2	90.98	14.61	15.73	1.46
Male	173	84.38	14.90	61.86	11.07	30.45	6.15	87.59	14.23	15.14	1.78
Total	420	84.24	14.74	62.92	11.26	30.77	6.18	89.59	14.53	15.48	1.62

**Table 2.** Correlation of the components of self-regulation strategy and academic performance

Variables	Academic performance		
	R	Sig.	N
<b>cognitive</b>	0.18	0.000	420
<b>Metacognitive</b>	0.17	0.000	420
<b>Motivation</b>	0.17	0.000	420
<b>Resource management</b>	0.21	0.000	420

As it can be seen from table 2, there a positive and meaningful relationship between motivational, metacognitive and cognitive strategies and resource management with academic performance ( $p < 0.01$ ).

Question 2: which of the components of self-regulation has a meaningful contribution in predicting the studied students' academic performance?

In order to answer this question, the multiple-regression is used and its results are shown in table 3.

**Table 3.** Multiple-regression of components of self-regulation on the academic performance

Variables	Academic performance					
	R	R <sup>2</sup>	B	$\beta$	T	Sig.
<b>Cognitive</b>	0.24	0.058	0.008	0.08	1.11	0.26
<b>Metacognitive</b>			-0.001	-0.01	-0.13	0.9
<b>Motivation</b>			0.019	0.07	1.24	0.22
<b>Resource management</b>			0.016	0.15	2.3	0.02*

The results shown in table 3, indicate that 0.058 of academic performance variance is explained by the components of self-regulation strategy in the studied group. For determining that which of the components of self-regulation strategy has the most contribution in explaining the academic performance, the beta regression coefficient is used. By calculating beta coefficient it can be seen that it is only the resource management strategy that with 0.15 beta, positively, has a meaningful contribution in anticipating the academic performance in the studied group. The other strategies have not a meaningful contribution in predicting the academic performance.

Question 3: is there a meaningful difference between the components of the studied students' self-regulation strategy?

In order to answer this question the MANOVA (multi-variable variance analyze) test was used.

**Table 4.** Comparing resource management, motivational, ultra-cognitive and cognitive strategies regarding sexuality

	Factors	Sum of squares	Mean squares	F	Sig.	Partial Eta squared
<b>Gender</b>	Cognitive	5.19	5.19	0.24	0.88	0.000
	Metacognitive	329.14	329.14	2.61	0.11	0.006
	Motivation	30.23	30.23	0.79	0.27	0.002
	Resource management	1172.12	1172.12	5.61	0.018*	0.013

The results showed in table 4, indicate that the difference between girl and boy students in university of Hormozgan is just in the field of resource management strategy and it can be seen in table 1 that the average of girls is more than boys, in other words, the girl students use resource management strategy more than the boys ( $p < 0.05$ ).

## Discussion

Upon the findings, there is a positive and meaningful relationship between all of the components of self-regulation strategy and the students' academic performance, but the results of multiple-regression analyzing indicate that it was only the resource management strategy which had positive and meaningful contribution in predicting the academic performance in the studied group. Because of having meaningful relationship with academic performance, the findings of this research have conformity with the results of researches (Archer, 1998, Zimmerman, 1981, Pintrich

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& Kachiv, 2000, Bandura, 1994, Williams & Helman, 1996, quoted by Pintrich, 1999). But it has not any conformity with the results of other researches Zimmerman, MartinaZ & Ponz, 1988, Wolterz, 2004, Pintrich, 2004). It seems that the reasons of non-conformity about resource management strategies are conform to the results of researches done by (Zimmerman, MartinaZ & Ponz, 1988, Pintrich, 2004, Mostafae, 2008) Application of these strategies by students, make them be active in learning, observe their advancement and be better than the other in planning, learning organizing and evaluating their advancement. And also they can control their environment and receive help from the others in required time. They don't suppose getting help is an indication of being dependence to others, but suppose it as an opportunity for their advancement and successfulness. So, it is expected that the students who use these strategies, are successful in their education. And also, the results of the research about the difference of resource management strategy between girl and boy students are conforming to the results of researches done by Zimmerman, Martinaz & Ponz, 1990, Pajars et al., 2001, Pokay & Blomfield 1991, Zimmerman, 1996, Pajars, 2003, quoted by Ahangar, 2011).

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