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**Predicting Academic Procrastination during Self-Regulated Learning in Iranian first Grade High School Students**Hooria Motie<sup>a\*</sup>, Mahmood Heidari<sup>a</sup>, Mansooreh Alsadat Sadeghi<sup>c</sup><sup>a</sup>Shahid Beheshti University, Psychology and Educational Sciences, Iran<sup>b</sup>Shahid Beheshti university, Family Research Institute, Iran

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**Abstract**

**Problem Statement:** Procrastination is a common phenomenon, that is mainly observed in school settings. Recognized as a self regulatory failure; procrastination is believed to adversely affect students' academic achievements. Research exploring the relationship between self-regulated learning and procrastination is lacking.

**Purpose of Study:** In the current study, the role of self-regulated learning strategies as a predictors of academic procrastination was assessed. Furthermore the relationship between gender differences in academic procrastination and self-regulated learning was examined.

**Research Methods:** Two hundred and fifty (121 females, 129 males) Iranian first grade high school students completed "The Motivated Strategies For Learning questionnaire" and "Procrastination Assessment Scale-Student".

**Findings:** Multiple regression results indicated that academic procrastination was negatively correlated with Intrinsic Goal Orientation, Extrinsic Goal Orientation, Metacognitive Self-Regulation, Time/ Study Environmental Management and Effort Regulation. Furthermore Organization was the positive predictor of academic procrastination. Finally independent t-test revealed no significant differences across genders in academic procrastination. Manova test showed that female students used rehearsal, effort regulation and peer learning Strategies significantly more than male students.

**Conclusions:** Findings are discussed with regard to prior research on self-regulated learning and procrastination and to future research. Finally strategies to overcome procrastination through self-regulated learning are suggested.

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keywords: Academic procrastination, Self-regulated learning strategies

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## **Introduction**

Procrastination is referred to for describing the situation of taking action to do something which has unnecessarily been delayed; finally the incline toward completing the delayed task happens in the person when s/he excitedly feels sad (Solomon and Rothblum, 1994). Rosario, Costa, Nunez, Gonzalez-Pienda, Solano, and Valle (2009) believe that although procrastination might happen in all daily activities, but procrastination in doing school assignment is more frequent. Solomon and Rothblum (1984) define academic procrastination in postponing academic tasks including preparation for taking exams, preparing paper during the semester, official tasks related to school and continuous presence in classes. Procrastination leads to high degree of anxiety and depression in the student and reduces its self- esteem (Lay, 1992; Lay and Schouwenburg, 1993; Lay and Silverman, 1996). Consequently, the reports of students of their procrastination indicate negative meaningful difference with their academic performance (Beswick, Rothblum & Mann, 1998). Generally the researches done in this filed indicate that procrastinators have less motivation to become successful (Lum, 1960; quoting from Steel, 2007). Burka and Yuen (1982, p. 32) noted that those who have serious problems with procrastination generally tend to attribute their difficulties to personality flaws, such as being lazy, undisciplined, or not knowing how to organize their time (Citing in Senecal, Koestner and Vallerand, 1995). However, according to them, procrastination is a way for expressing inner controversies and preserving self- esteem against susceptibility. Solomon and Rothblum (1984) assert that although students consider different reasons for their negligence, most of them relate it to fear of failure (including anxiety in performance, perfectionism and lack of self- esteem). Recent researches speak of other motivational factors which are related to academic negligence. These studies offer some ways to regulate individual behaviour which is effective on academic achievements and results, among them are the feeling of curiosity, persistence, learning, performance, affect and self-esteem (Vallerand and Bissonette, 1992; Vallerand et.al. 1992 quoting from Senecal et.al. 1995). The most comprehensive theory about regulation the behavior of people is self-regulation theory mentioned by Deci and Ryan (2000, 1991, 1987, 1985) Steel (2007) considers procrastination a common and frequent form of failure in self- regulation. However self- regulation includes different items and elements. As an example researches done about self- efficacy and academic procrastination are to a great extent ambiguous. Most researchers (Bandora, 1997; Borca and Yoen, 1987; Steel, 2007) believe that low level of self- efficacy lead to procrastination. However, Van Eerde (2000) believes that increase of self- efficacy reduces the possibility of avoidance; however, it is not always efficient. According to his researches, an individual despite having high level of self-efficacy might procrastinate. Van Eerde (2000) proved that the factor which relates self-regulation to procrastination is time management. Furthermore, Wolters (2003) has demonstrated that those students who had more procrastination in doing their assignment made use of cognitive and metacognitive strategies less than others. Other researches show that those learners who make use of self-regulation strategies rarely commit procrastination (Milgram, Srolof, Rosenbawm, 2003). However, each research finds different elements of self- regulation having meaningful difference with procrastination. The researches done about the difference between academic procrastination in girls and boys are to a great extent ambiguous, while other researches indicate that men are more susceptible to high risk of procrastination (Ferari et.al. 1995). As for self-regulation strategies, when teaching materials are more difficult, girls use self- regulation strategies more often than boys (Taheri Khorasani, 1999, quoting from Chari and Dehghani, 2008). Furthermore, Zimmerman (1998) demonstrates that girls make use of self- regulation strategies more than boys when dealing with difficult assignment.

The present study aims at clarifying the relation between self- regulation variables and academic procrastination in senior high school students, who are in a transient stage of entering a new section of education. Entering a new academic system and grade might bring with itself some consequences for students. For most students this process and transition is indicative of the emergence of general decadence in academic efficacy, motivation, self- perception of the abilities and relation with peers and teachers. The future of the adolescent is prone to hurt and loss, unless

academic system provides the necessary and required revisions with the aim of helping for promotion of motivation level and academic achievement (Eccles, Midgley, Adler, 1984). It seems that today the revisions of academic system focus mostly on organization the curriculum, changing the content, increase or decrease of teaching hours and things like these. However what concerns more is that to what extent these reconstructions and revisions directly affect student's learning. The present survey will show the self- regulation strategies which predict the academic procrastination in Iranian students and help teachers to design academic programs based on what Iranian students use rather than the criteria obtained from researchers done in western culture. So the following questions have been mentioned:

- Which self- regulation elements is a valid predictor of academic procrastination in students?
- In which sex self-regulation and academic procrastination variables are used more?

## Methodology

The present study is correlative.

## Population, Sample and Sampling method

The population of the present study includes all senior high school students of Tehran city. In the first stage of study, in order to investigate the relation of self- regulation elements with procrastination and determine the self- regulation elements in students, a sample including 250 subjects have been selected through cluster sampling. The procedure is that from 19 areas of Tehran 5 areas have been selected randomly, from each area one girl and one boy school and from each school one class have been selected randomly.

## Data Collection

### a. The questionnaire of motivational guidelines for learning

In order to investigate the cognitive and emotional self- regulation guidelines, the questionnaire of emotional guideline for learning has been used. This questionnaire includes two scale of "motivational beliefs" (31 article) and "Self-Regulated Learning Strategies" (50 articles) which is totally 80 articles. The raw material of this questionnaire is close end questions with 7 options in which the subjects respond to based on 7-extreme Likert scale based on their academic function (1- Never is true for me, to 7- Completely true). Alpha Cronbach coefficients related to 15-items micro tests of motivational strategies of learning in Pintrich et.al. (1991) have been 0.7 in most items. This study has been done on 380 subjects which is indicative of high validity of this questionnaire. For their self-regulation scale, Khademi and Noshadi (2006) have reported internal consistency of 0.65 to 0.81. In the present study, the results of calculation for estimation of self- regulation questionnaire validity indicates that Alpha coefficient is in an acceptable level (Alpha= 0.91).

### b. Academic Procrastination Scale

This scale has been constructed by Solomon and Rothblum. The evaluation scale for Persian version of academic procrastination contains 27 items which investigate three elements: elements include preparation for examinations, preparation for doing assignments, preparation for final papers. In Dehghan study (2009), the reliability of test is 0.79 through Alpha Cronbach. Solomon (1998) has reported the coefficient of 0.84 for validity of test through internal consistency validity. Dehghan (2008) has reported 0.78 for the internal consistency validity of preparation for paper. In Ali Madad (2009) study, for determining the validity, the correlation of the final number has been used considering all questions whose correlation coefficients have been meaningful in  $p < 0.01$ . In present study the calculation of Alpha Cronbach has been estimated 0.86 which is acceptable.

## Findings

The number of items, means and standard deviations for each of the 15 subscales of the MSLQ and academic procrastination are presented in Table 1.

Table (1) the mean and standard deviations of subjects' scores in research variables according to sex

Variable	Gender			
	Boy (=129)		Girl (=121)	
	M	SD	M	SD
Intrinsic Goal Orientation	19.85	0.63	21.26	0.63
Extrinsic Goal Orientation	24.1	0.69	25.15	0.49
Task value	31.21	0.97	32.34	1.04
Control beliefs about learning	20.4	0.56	21.00	0.71
self- efficacy	40.43	1.39	42.43	1.24
Test Anxiety	22.12	0.81	22.86	0.93
Rehearsal	16.71	0.7	19.11	0.67
Elaboration	27.63	0.76	29.78	0.76
Organization	15.96	0.66	17.07	0.84
Critical thinking	22.45	0.84	24.11	0.86
Metacognitive self-regulation	54.73	1.57	58.21	1.35
Time and study environment management	33.49	1.07	35.46	0.99
Effort regulation	15.42	0.72	17.00	0.65
Peer learning	11.59	0.65	14.03	0.61
Help Seeking	17.35	0.57	17.55	0.67
Academic procrastination	60.96	1.91	58.88	1.76

In order to investigate the first research question, multi- variable regression has been used. In this analysis step by step method has been used. Introducing variables in the equation is done based on the correlation of each self-regulation element with procrastination. Regression is done in ten steps; the correlation in the last step is 0.759 and determination coefficient equals to 0.576. The results of variance analysis for validity of regression equation showed that F equals to 23.337 and meaningful level of 0.001 for regression equation is valid. The results of the last step are shown in table (2).

Table 2- the results of last (10<sup>th</sup>) step of regression analysis for prediction of academic procrastination based on self-regulation factors

Meaningful lever	T	Standard coefficient	Non- standard coefficient		Model
		Beta	B	Standard error	
<0.001	19.07		121.31	6.36	Constant value
0.04	-1.97	-0.16	-0.46	0.23	Intrinsic Goal Orientation
0.01	-2.52	-0.17	-0.52	0.21	Extrinsic Goal Orientation
0.01	2.59	0.2	0.5	0.19	Organization
0.004	-2.93	-0.27	-0.34	0.11	Metacognitive self-regulation
0.01	-2.56	-0.19	-0.33	0.13	Time and study environmental management
<0.001	-5.69	-0.41	-1.05	0.18	Effort regulation

As can be seen from table (2), the results indicate that internal valuation toward goal affects meaningfully procrastination. Based on the standard coefficients of regression, internal valuation toward goal ( $p < 0.05$ ), external valuation toward goal ( $p < 0.05$ ), meta-cognitive self-regulation ( $p < 0.05$ ), time and place management ( $p < 0.05$ ) and effort regulation ( $p < 0.001$ ) are negative predictor of academic procrastination, organization is meaningfully positive predictor of academic procrastination ( $p < 0.5$ ).

In order to respond to second question, t-test statistical method for independent groups and multi- variance analysis has been used. The results have been presented in table (3) and (4).

Table (3) The comparison of girl and boy students based on the mean score of academic procrastination

Meaningful level	T	SD	Mean	Variables
0.25	-0.28	2.29	- 0.65	Academic procrastination

Table (4) The comparison of girl and boy based on mean score of self- regulation elements

<b>Variables</b>	<b>Partial <math>\eta^2</math></b>	<b>F</b>	<b>Mean</b>	<b>Meaningfulness level</b>
Intrinsic Goal Orientation	<b>0,14</b>	<b>0.71</b>	<b>2.49</b>	<b>0.37</b>
Extrinsic Goal Orientation	<b>0.008</b>	<b>0.64</b>	<b>22.34</b>	<b>0.73</b>
Task value	<b>0.006</b>	<b>0.99</b>	<b>22.24</b>	<b>0.47</b>
Control beliefs about learning	<b>0,026</b>	<b>0,57</b>	<b>13.15</b>	<b>0.82</b>
Self- efficacy	<b>1.17</b>	<b>1.4</b>	<b>165.37</b>	<b>0.24</b>
Test anxiety	<b>0.93</b>	<b>1.22</b>	<b>51.53</b>	<b>0.35</b>
Rehearsal	<b>0,57</b>	<b>4,16</b>	<b>99.09</b>	<b>0.017</b>
Elaboration	<b>2.02</b>	<b>0.84</b>	<b>25.27</b>	<b>0.44</b>
Organization	<b>1.56</b>	<b>0.79</b>	<b>46.47</b>	<b>0.11</b>
Critical thinking	<b>0.009</b>	<b>0,631</b>	<b>24.22</b>	<b>0.13</b>
Metacognitive self- regulation	<b>0.32</b>	<b>1.71</b>	<b>272.45</b>	<b>0.1</b>
Time and study environmental management	<b>0.19</b>	<b>1,32</b>	<b>72.02</b>	<b>0.48</b>
Effort regulation	<b>0,058</b>	<b>4,24</b>	<b>107.81</b>	<b>0.016*</b>
Peers of learning	<b>0.068</b>	<b>5.01</b>	<b>110.07</b>	<b>0.008*</b>
Help seeking	<b>0.33</b>	<b>2.33</b>	<b>49.51</b>	<b>0.57</b>

The results mentioned in table (3) indicate that there is no meaningful relation between gender and the amount of academic procrastination usage. However, considering the results obtained from table (1) and (4), the mean score of mental review, regulation effort and learning from peers is meaningfully higher in girls than boys ( $p < 0.05$ ).

## Discussion

Based on the findings obtained from the present study, some of the self-regulation strategies are meaningful predictor of academic procrastination. That is, those students who have internal valuation toward goal rarely procrastinate. This is in line with the results of previous studies. Zimmerman (2000, 2004) believes that self-regulated learners who rarely procrastinate; in the first stage of their activities do valuation and strategic planning. Wolters (2003) demonstrates that those who have mastery- approach goals don't postpone their tasks. Those who have this aim are interested in learning for its sake. The interesting result obtained from the present study is the simultaneity of the relation between intrinsic and extrinsic goal orientation with reduce of academic procrastination. The results obtained from the studies done in other cultures and societies (e.g. Rakes & dunn, 2010; Seneacal et.al. 1995); consider internal motivation against external motivation effective on academic procrastination. However, it seems that Iranian students have high external motivation to reduce procrastination. The presence of entrance exam for university, parent's expectation, competitive environment of schools can be considered as hypothesis. Parents' expectation has been considered as one of the high external motivation among these students. Possibly, such external motivations for Iranian students reduce their procrastination to the same extrinsic as intrinsic goal orientation. Deci and Ryan (1991) believe that in order a society to have a good function and performance, the people living in it should do some activities for which they have not internal motivation and it is not interesting for them. First, they need an external regulation of behaviour; however it is hoped that it will turn to internal regulation through the time. Internalization is defined as a process in which people actively turn external valuation to internal valuation. So it seems necessary to consider some training for Iranian students which turn this extrinsic goal orientation to intrinsic goal orientation. The other finding of this study is the positive and meaningful relation between organization and academic procrastination. In previous researchers this is not predicted but since in perfectionist people the incline toward organization can be seen (Forst, 1990, quoting from Stoeber and Joormann, 2001) and there is high correlation between procrastination and perfectionism (Flett, Blankstein, Hewitt and Koledin, 1992; Steel, 2007, Lipincott, 2010) this conclusion can be determined. However, if organization is done with true education to students a reverse conclusion might be seen. It seems that regardless of true education, perfectionist student spend much time for organization the materials. As an example, s/he might spend many hours preparing the plan and ignores the main issue. It might be the case that if student finds the ability to obtain some skills such as time management, s/he might face fewer problems when organization academic matters, in this case organization can be changed to negative predictor of procrastination. Introducing challenging tasks through different ways regardless of time pressure can be beneficial. The negative and meaningful relation of time and study environmental management with academic procrastination is in line with Van Eerde (2000) and other studies (Solomon and rothblum, 1984; Lay & Schouwenburg, 1993). Planning can reduce procrastination to a great extent. Considering the significance of time management, Smith (1994) states: "You control your life by controlling your time"(p. 19).", this sentence explains in the best way why time management is a main part of self-regulation. Developing the skills for time management has strong correlation with academic achievement (Fulgini and Stevenson, 1995), enhanced self- esteem (Ferrari and Emon, 1994), lower level of learned disability (Kleijn, Van der Ploeg, Topman, 1994), more appreciating feeling (Higbee & Dwinell, 1992), and internal controlling (Ferrari and Emmons, 1994). The results of present study show that metacognitive strategies use the predictors of academic procrastination. It seems that those students, who supervise their function through metacognitive skills and controlling of learning condition, rarely postpone their academic matters. Students who are not procrastinator have control over their learning through metacognitive strategies (self- evaluation, self- control and self- questioning) while procrastinators rarely use these strategies. This finding is also consistent with previous ones. Students who have metacognitive self- regulation have higher academic motivation and they are more successful than their peers (Pintrich, 2003). Wolters (2003) indicates that not using metacognitive strategies lead to higher level of procrastination in students. Furthermore, Howell and Watson (2007) believe that the use of learning and metacognitive strategies reduces procrastination. Based on the present study, in addition to the significance of supervision in self- learning by student, control over their effortts help reducing their procrastination. Regulation of effortt has negative and meaningful relation with academic procrastination, it helps student to continue their effortts



for the use of learning strategies continuously (Garci and McCachi, 1991 quoting from Rakes and Dunn, 2010). The previous studies confirm these findings (Wolters, 2003; Rakes and Dunn, 2010).

Considering the difference between academic procrastination in girls and boys, the researchers are ambiguous. Some of them indicate lack of meaningful difference between gender and academic procrastination (Solomon and Rothblum, 1984); and some other considers men procrastination more (Ferrari, 1995). In the present study, no meaningful difference has been seen between two genders in terms of academic procrastination; however, in some of self-regulation elements this difference was seen. Girls make use of Rehearsal strategy more than boys and they had more effort regulation. The previous studies confirm this finding. Bidjerano (2005) shows girls meaningfully use Rehearsal strategies more often than boys. He believes that girls are more flexible and they face what learning environment offers them with open mind. Generally some of researchers (Zimmerman, Martins- Ponuz, 1990; Wolters, 2003; Niemievirta, 1997) believe that girls make use of learning strategies more and they have control over their learning. Furthermore Taheriz Khorasani (2008) shows that in Iranian society, educational system, society and parents expect more from their girls to have self-regulated behavior (Chari and Dehghani, 2008). So it seems that this meaningful difference in these self-regulation elements is more justifiable in girls. The other interesting result in this research is that learning is more in girls. Eccles (1994) believes that the traditional view of parents on the gender role of their children is effective. They encourage their boys to do sport and do computational and mathematical activities and their girls to play with their peers and studying (Gallagher and Kaufman, 2005). According to him one can justify the meaningfulness of difference between Rehearsal and peers of learning in girls. Furthermore Zeldin and Pajares (2000) explain why in adolescence the self-esteem of girls reduces and they seek supportive friendship, especially with those friends who collaborate with them in academic matters. Alikhani and Mehr Mohammadi survey (2004) confirm these findings. They show that individual learning activities is more in Iranian boy schools than girls'.

In conclusion it should be remembered that the present study is correlative one and care should be taken when interpreting data and to investigate the causal relation with variables in future researches. Also it is suggested that a research to be done for training of such strategies in reducing academic procrastination of student.

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