A Study of Relationship between Big-Five Personality Factors and Use of Motivated Learning Strategies by Students Aspiring for Career in Civil Services

Prof. Shirish K. Shitole (Ph.D. student of Pune University),
Asst. Professor in Psychology, Mahavir Mahavidyalaya, Shivaji University, Maharashtra, India

Abstract

The aim of this research was to find out the relationship between Big Five Personality Factors (Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism) and Motivated Learning Strategies used by students aspiring for careers through civil services' competitive examinations. To find out whether there existed any gender difference was also studied. Two scales namely, Motivated Strategies for Learning Questionnaire developed by Pintrich, Smith, Garcia, & McKeachie (1991) and NEO-Five Factor Inventory:Short Form developed by Costa, Jr. and McCrae (1992), were used for this study. The total number of sample was 199 (135 Males and 64 Females) and was taken from civil services' competitive examination centers at Pune and Ichalkaranji. In case of male students, the motivational orientation was significantly correlated with conscientiousness (r=.2; p<.01) and extraversion (r=.2; p<.01) and non-significantly correlated with openness to experience (r=-.1), agreeableness (r=-.049) and neuroticism (r=.05). In case of female students, the motivational orientation was significantly correlated with conscientiousness (r=.39; p <.01) and extraversion (r=.2; p <.01) and non-significantly correlated with openness to experience (r=.014), agreeableness (r=-.09) and neuroticism (r=-.12). The relationship of learning strategies was non-significant with openness (r=-.13) and agreeableness (r=-.03) and was significant with conscientiousness (r=.5; p<.01), extraversion (r=.48; p<.01) and neuroticism (r=-.4; p<.01) in case of male students. In case of female students, the relationship of learning strategies was non-significant with openness (r=.04) but was found significant with conscientiousness (r=.62; p <.01) and extraversion (r=.37; p<.01), agreeableness (r=.43; p<.01) and neuroticism (r=-.46; p<.01). No significant difference was found among male and female students regarding motivational orientation (z=.59) towards civil services' competitive examinations but in case of learning strategies, a significant difference in favour of girls was found (z=2.16; p<.05). Regarding Big Five Factors, significant differences were found between males and females in case of conscientiousness (z=3.59; p<.01) and agreeableness (z=2.87; p<.01). For other factors, namely, openness (z=.57), extraversion (1.24) and neuroticism (.08), no significant gender differences between civil services' aspirants were found.

Key Words: *Motivational Orientation, Learning Strategies, Big Five Factors of Personality, Socio-Cognitive Theory*

I. INTRODUCTION

Association for Career and Technical Education (2006) has described the phenomenon of lack of motivation in millennial students as "the ambition gap". It is especially observed in Indian youth. To overcome it, the social cognitive theory of motivation (Albert Bandura, 1986), which believes in the capabilities of individuals to regulate and shape their career, is helpful.

Maharashtra Public Service Commission takes an examination every year to recommend government a list of qualified candidates for Class-I/II Non-Technical Civil Services. Nearly, one lakh and seventy-five thousand graduate students, particularly from rural areas, appear for this examination every year. The duration of this examination is generally one year and is taken through three stages: preliminary, mains and personality test. The students have to clear all three stages simultaneously through comparative merit in order to be qualified. The final result is generally .0025 percent. This multi-stage examination is highly ambiguous and has multi disciplinary syllabi with recently added civil service aptitude component. It measures many academic competencies of students simultaneously. Due to the cut-throat competition, the preparation for this examination demands proper direction, sustained efforts, self-discipline, higher achievement motivation, openness and self-corrective attitude, various combinations of learning strategies, stress management, emotional stability etc. The self-regulatory learning (SRL) skills, which focus both on motivational and cognitive aspects of learning, seem relevant here. SRL assumes learner as an active and

constructive agent rather than passive recipient of information (Pintrich, 2000). It believes in the potential of learner to monitor, control, and regulate various aspects of their own cognition, motivation, and behavior, as well as features of the learning environment (Pintrich, 2000). It captures the complexity of preparation for competitive examination.

Unfortunately, our current educational system does not focus much on developing Self-Regulatory Learning Skills which lead to better academic health and performance. Nowadays, to get an admission to better colleges or to a prosperous job, students have to self-regulate their study efforts. The SRL skills, if developed through understanding the learning context and environment, will prove effective for these purposes. Taking all this into consideration, researcher has decided to find out the relationship between motivational orientation and learning strategies adopted by the students appearing for civil service competitive examinations. He has also decided to explore the gender differences related to motivational orientation and learning strategies applied in competitive academic settings.

II. REVIEW OF LITERATURE
A. *Self-regulatory learning (SRL):*
The positive relationship of Self-regulatory learning (SRL) with academic achievement across education levels and subject areas has been found consistently (Lindner and Harris, 1992; Van Den Hurk, 2006). Dweck (1999) have reported that the students take efforts to become better learners and motivate themselves through SRL if they believe in incremental theory of intelligence. General models of self-regulated learning used with considering context have been fruitfully applied to different academic domains (Wolters, 1998). One of the important measures for SRL, the Motivated Strategies for Learning (MSLQ) which is used in current research has shown cross-cultural construct validity during the studies conducted with the Chinese, Malay, and Indian cultural groups in Singapore as well as the Australian and Japanese students (Purdie, Hattie, & Douglas, 1996).

B. *Motivational Orientation:*
Motivational beliefs have proved to be very important in case of SRL. A strong correlation was found in college students' self-efficacy and academic performance (Klomegah, 2007). Self regulation, self-efficacy and test anxiety have significantly predicted the performance of students (Pintrich and de Groot, 1990). Schunk (1989) has emphasized that self-efficacy judgments and task value beliefs were highly sensitive to the characteristics of a learning task. According to Bandura (1997) self-efficacy measures' are more useful in predicting what people will do under specific circumstances. Students who use self-

regulation set better learning goals, implement more effective learning strategies, and exert more effort and persistence (Schunk and Zimmerman, 1994).

Fryer and Elliot (2002) mentioned goals as being either mastery goals (aimed at meeting an absolute or intrapersonal standard) or performance goals (aimed at meeting a normative standard). Students with mastery-approach goals have shown can-do, or at least can-try attitude and are more likely to use self-regulated learning while students with performance-avoidance goals have shown fear of failure, avoidance of help-seeking, and self-handicapping attitude. Mastery goals orientations resulted in deeper processing of information and eventually higher academic achievement (Pintrich & De Groot, 1990).

C. *Meta-Cognitive and Cognitive Learning strategies:*
According to Hidi and Ainley (2008), self-regulation demands progression from triggered situational interest to well-developed individual interest. Highly self-regulated students have been observed as more motivated to use planning, organizational, and self-monitoring strategies than low self regulated students (Pintrich & De Groot, 1990). Task value beliefs have been correlated positively with the use of cognitive strategy (elaboration and organization) (Pintrich, 1999). While performance-approach goals have found to help students to greater use of cognitive strategies (Pintrich, 2000) and course achievement (Elliot, 1999), performance avoidance goals have shown negative outcomes (use of superficial learning strategies, lower performance, self-handicapping behavior, undermined intrinsic motivation). Positive relationships between academic achievement and environment management (Zimmerman and Martinez-Pons, 1986), time management (Britton and Tessor, 1991), cognitive and meta-cognitive strategies (Rebovich, Brooks and Peterson, 1998), help seeking (Rebovich, Brooks and Peterson, 1998) and effort regulation (Chen, 2002) have also been reported. Gandhi (2010) has shown that the perception of task-specific efficacy and meta-cognitive awareness tasks and strategies has played important role in using learning strategies and thereby improving task performance.

D. *Big-Five Factors of Personality:*
Many studies have indicated that measures of cognitive ability may not predict academic performance at higher levels of education (Ackerman, Bowen, Beier, & Kanfer, 2001; Furnham, Chamorro-Premuzic, & McDougall, 2003). The researches related to Big-Five Factor model have shown that cognitive ability is just a reflection of what a student can do but the personality traits may reflect what a student will do (Furnham & Chamorro-Premuzic,

2004). Kanfer (1990) has suggested that personality, a trait like characteristic similar to cognitive ability, might have a distal relationship to performance. It might have an influence through state-like individual characteristics (which are malleable) which are proximal to performance. Blickle (1996) observed that performance of students at university level was mediated by learning strategies (such as integrating new material into existing knowledge and applying direct effort to learning). Noftle and Robins (2007), in their multi-sample study of university undergraduate students, found that perceived academic ability and academic efforts have a mediating impact on the relationship between conscientiousness and grade point average. They argued that many factors like self-efficacy, attributional style and test taking skills are expected to simultaneously contribute to success in academics. Gellatly (1996) has linked Conscientiousness to motivation for setting the goal. Of the Big Five personality traits, only conscientiousness has consistently been associated with academic achievement (Noftle & Robins, 2007) both at high school level (e.g., Lounsbury, Sundstrom, Loveland, & Gibson, 2003) and at university level (e.g., Busato, Prins, Elshout, & Hamaker, 2000). Diseth (2003) has observed that students high in conscientiousness tend to engage more frequently in deeper approach to learning and have shown better academic performance than students applying surface approaches. Deeper learners focus on learning the underlying meaning, making associations between new and old ideas, synthesizing the material critically while surface learners are motivated extrinsically and rely more on rote memorization, learning only essentials to avoid failure. Conscientious students are high in academic self-efficacy and grades in examinations have shown positive relationship with academic self-efficacy. They have been also seen as having lower test anxiety, which in turn positively related to grades. In recent study by Chamorro-Premuzic and Furnham (2008), it was found that the Conscientiousness and Openness to Experience have mediated the relationship between measures of intelligence and academic performance. Malouff et al. (1990) have found that neurotic individuals are less likely to be goal-oriented and self-regulated. Anxiety (mainly trait) of neurotics leads to inability of the individual to control the emotions which are necessary to protect on-task attention (Kanfer, Ackerman, & Heggestad, 1996). Individuals high on the Neuroticism scale tended to experience negative emotions like guilt and pessimism and so are characterized by low self-esteem. It seems that Neuroticism primarily influences performance through motivation while Conscientiousness influences performance through orderliness and decisiveness (Saucier & Ostendorf, 1999). Positive affect—an indicator of Extraversion was found to be associated with distal and proximal measures of motivation (George & Brief, 1996).

Extraversion has shown positive correlation with self-efficacy and their by greater confidence in abilities to perform. But further study is needed to clarify the mediating process to shed the light on the complex relationship between personality and academic performance.

III. OBJECTIVES

1. To study the relationship between Big Five Personality Factors (Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism) and Motivated Learning Strategies (Motivational Orientation and Learning Strategies) used by civil services' career aspirants.
2. To study the gender difference between civil services' career aspirants regarding motivational orientation towards civil services' competitive examinations.
3. To study the gender difference between civil services' career aspirants regarding use of learning strategies for civil services' competitive examinations.
4. To study the gender difference between civil services' career aspirants regarding Big-Five personality factors.

IV. METHODOLOGY

A. Participants

The total number of sample was 199 (135 Males and 64 Females) and was taken from various civil services' competitive examination centers at Pune and Kolhapur districts in Maharashtra, India.

B. Tools

Following two tests were used.

1. Motivated Strategies for Learning Questionnaire:

It is developed by Pintrich, Smith, Garcia, & McKeachie (1991). It is a non-cognitive, paper-pencil test consisting of eighty one items. It measures Motivational Orientation and Learning Strategies by students of higher education for a specific course through fifteen sub-scales. The Motivational Orientation is measured through three components (value, expectancy and affect) and six sub-scales (Intrinsic Goal Orientation, Extrinsic Goal Orientation, Task Value, Control of Learning Beliefs, Self-Efficacy for Learning & Performance and Test Anxiety). The Learning Strategies section encompasses cognitive & meta-cognitive strategies and resource management strategies and includes nine sub-scales (Rehearsal, Elaboration, Organization, Critical Thinking, Meta-cognitive Self-Regulation, Time and Study Environment Management, Effort Regulation, Peer Learning and Help Seeking). It is a seven point rating scale varying

from 'Not at all true of me' to 'Very true of me'. The number of negatively worded items is eight. The range of internal consistency estimates of reliability (Cronbach Alpha) for all sub-scales is from .52 to .93.The majority of Cronbach's Alphas for the individual scales (9 out of 15) are greater than .70 and are robust. The predictive validity is significant and moderate (range .02 to .41) and is measured through correlating the scale scores with students' final course grades gathered from a sample of three hundred eighty students at a public, four-year university in the Midwest, U.S..

2. NEO-Five Factor Inventory - Short Form:

It is developed by Costa, Jr. and McCrae (1992). It is a paper pencil, self-report measure. It measures five personality factors namely, Openness to Experience, Conscientiousness, Extraversion, Agreeableness and Neuroticism. The total number of items is sixty and for each factor, there are twelve items. The average time required to complete the test is between ten to fifteen minutes. For reliability of NEO FFI-SF, the internal consistencies reported for the five factors in the manual were N= .79, E= .79, O= .80, A= .75, C= .83.

C. Procedure

The students were arranged in groups. Trained test administrators gave the instructions properly. After completing tests, the samples were collected. The incomplete samples were omitted.

TABLES

Table 1: Male and Female differences between Self-Regulated Learning Strategies (Motivational Orientation and Learning Strategies) among civil services' aspirants

Factors of Self-regulation	Sex	N	Mean	SD	Z
Motivational Orientation	M	135	35.3	2.55	.59
	F	64	35.54	2.78	*NS*
Learning Strategies	M	135	46.65	7.29	2.16
	F	64	48.66	6.32	*p<.05*

Table 2: Male and Female differences between Big Five Personality Factors among civil services' aspirants

Factors	Sex	N	Mean	SD	Z
Openness to Experience	M	135	28.87	4.67	.57
	F	64	28.47	4.57	*NS*
Conscientiousness	M	135	33.93	6.74	3.59
	F	64	36.98	4.97	*p<.01*
Extraversion	M	135	31.85	6.29	1.24
	F	64	33	5.92	*NS*
Agreeableness	M	135	29.42	5.17	2.87
	F	64	31.77	5.5	*p<.01*
Neuroticism	M	135	20.52	7.44	.08
	F	64	20.63	8.64	*NS*

Table 3: Correlation coefficient between Motivational Orientation and Big-Five Personality Factors among civil services' male aspirants.

Factors	N	r
Motivational Orientation-	135	-.1
Openness to Experience		*NS*
Motivational Orientation-Conscientiousness	135	**.2** *p<.01*
Motivational Orientation-Extraversion	135	**.2** *p<.01*
Motivational Orientation-Agreeableness	135	-.05 *NS*
Motivational Orientation-Neuroticism	135	.05 *NS*

Table 4: Correlation coefficient between Motivational Orientation and Big-Five Personality Factors among civil services' female aspirants.

Factors	N	r
Motivational Orientation-Openness to Experience	64	.01 *NS*
Motivational Orientation-Conscientiousness	64	**.39** **p<.01**
Motivational Orientation-Extraversion	64	**.2** **p<.01**
Motivational Orientation-Agreeableness	64	-.09 *NS*
Motivational Orientation-Neuroticism	64	-.12 *NS*

Table 5: Correlation coefficient between Learning Strategies and Big-Five personality Factors among civil services' male aspirants.

Factors	N	r
Learning Strategies-Openness to Experience	135	-.13 *NS*
Learning Strategies-Conscientiousness	135	**.51** **p<.01**
Learning Strategies-Extraversion	135	**.48** **p<.01**
Learning Strategies-Agreeableness	135	-.03 *NS*
Learning Strategies-Neuroticism	135	**-.41** **p<.01**

Table 6: Correlation coefficient between Learning Strategies and Big-Five personality Factors among civil services' female aspirants.

Factors	N	r
Learning Strategies-Openness to Experience	64	.04 NS
Learning Strategies-Conscientiousness	64	**.62** **p<.01**
Learning Strategies-Extraversion	64	**.37** **P<.01**
Learning Strategies-Agreeableness	64	**.43** **P<.01**
Learning Strategies-Neuroticism	64	**-.46** **P<.01**

V. RESULTS AND DISCUSSION

As shown in Table 1, no significant difference was found between male and female students regarding motivational orientation (z=.59) towards civil services' competitive examinations. In case of Big Five factors, as shown in Table 2, no significant differences between males and females regarding openness to experience (z=.57), extraversion (z=1.24) and neuroticism (z=.08) has been found. It is a good sign that females are also showing similar achievement motivation to succeed in competitive environment in recent times like males. The similarity is seen between male and

female students for readiness to accept new experiences, sharing thoughts with peers, behaving assertively and seeking various excitements. Regarding the impulsiveness, anxiety, self-consciousness etc. which are related to neuroticism, females and males have responded in more youth-like way than through stereotypical gender roles. It may be the reason for no gender difference between them related to neuroticism.

In case of learning strategies, the z- value is 2.16, which is significant at .05 level and this gender difference has found to be in favour of females (see Table 1). Regarding Big Five Factors (see Table 2), significant differences were found between male and female students in case of conscientiousness (z=3.59; p<.01) and agreeableness (z=2.87; p<.01) and these differences are also in favour of females. The affirmative policies like reservation for females in government jobs have helped to create positive environment for them. The sign of encouragement in educated families for competitive careers is growing. Females tend to catch this opportunity as early as possible. These factors might be responsible for more conscientious and agreeable behavior in female students. They seem to comply more with the group study norms, show more modesty in behavior which becomes instrumental in getting proper help from peers and experts when needed.

In case of male students, the motivational orientation is found to be significantly correlated with conscientiousness (r=.2; p<.01) and extraversion (r=.2; p<.01) (see Table 3). Similarly, in case of female students, it is significantly correlated with conscientiousness (r=.39; p <.01) and extraversion (r=.2; p <.01) (see Table 4). Here also, the correlation between motivational orientation and conscientiousness is higher for females than males. In both, males and females, motivational orientation is non-significantly correlated with openness to experience, agreeableness and neuroticism. For males, their values are -.1, -.05 and .05 respectively and for females the values are .01, -.09 and -.12 respectively (see Table 3 and 4).

The relationship of learning strategies is found to be significant with conscientiousness (r=.51; p<.01), extraversion (r=.48; p<.01) and neuroticism (r=-.41; p<.01) in case of male students (see Table 5) and conscientiousness (r=.62; p <.01), extraversion (r=.37; p<.01), agreeableness (r=.43; p<.01) and neuroticism (r=-.46; p<.01) in case of female students (see Table 6). The relationship of learning strategies is non-significant with openness to experience (r=-.13) and agreeableness (r=-.03) in case of males and only openness to experience (r=.04) in case of females (see Table 5 and 6). Among Big Five factors, the correlation of conscientiousness with learning strategies in case of both groups is highest. The preparation work for civil services' competitive

examinations is very demanding and requires six to seven hours study per day for one and half years. It requires orderliness, discipline, perseverance and dedication. In case of females, the additional burden of getting success in less number of attempts, though both groups have same number of examination attempts, due to social norms related to age of marriage for girls compel them to be more deliberative, orderly and self-disciplined. It may be a contributing factor for higher correlation related to conscientiousness in females than males. This burden may also contribute to more anxiety, vulnerability to stress if the management of resources and time is not happened properly. The higher and significant negative correlation between learning strategy and neuroticism in case of females than males may be indicative of this fact. The group study seems necessary for such examinations where the syllabi is very vast and covers many streams of study and current happenings. The sharing of thoughts, information and knowledge with peers, emotional and social support, reinforcing environment and surrounding which keeps one's level of excitation at the optimum are important during preparation. Extroverts may get this environment easily than introverts. The correlations between extraversion and motivational orientation and extraversion and learning strategies, for both males and females, have been significant and positive. For females, the agreeableness is positively and significantly correlated with learning strategies. They seem to be more cooperative and modest in their behavior. It tends to help them in learning better by getting reciprocal response from more knowledge-able peers and experts.

VI. CONCLUSION

1. Significant difference between male and female civil services' career aspirants is found in case of learning strategies and the difference is non-significant in case of motivational orientation.
2. Significant difference between male and female civil services' career aspirants is found in case of Conscientiousness and Agreeableness and the difference is non-significant in case of Openness to Experience, Extraversion and Neuroticism.
3. In case of male civil services' career aspirants, the correlations between motivational orientation and two factors of Big Five i.e. Conscientiousness and Extraversion are found to be significant and positive. With remaining three factors i.e. Openness to Experience, Agreeableness and Neuroticism, the correlations are non-significant.
4. In case of female civil services' career aspirants, the correlations between motivational orientation and two factors of Big Five i.e. Conscientiousness and Extraversion are found to be significant and positive. With remaining three factors i.e. Openness to Experience,

Agreeableness and Neuroticism, the correlations are found to be non-significant.

5. In case of male civil services' career aspirants, the correlations between learning strategies and two factors of Big Five i.e. Conscientiousness and Extraversion are found to be significant and positive while with Neuroticism, it is found to be significant and negative. With remaining two factors i.e. Openness to Experience and Agreeableness, the correlations are found to be non-significant.

6. In case of female civil services' career aspirants, the correlations between learning strategies and three factors of Big Five i.e. Conscientiousness, Extraversion and Agreeableness are found to be significant and positive while with Neuroticism, it is found to be significant and negative. With the remaining factor Openness to Experience, the correlation is found to be non-significant.

REFERENCES

[1] Bandura, A.(1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice-Hall.

[2] Bandura, A.(1997). Self-effi cacy: The exercise of control. New York: W.H.Freeman Co.

[3] Britton, B & Tessor, A. (1991). In Kosnin, A.M. (2007). Self-regulated learning and academic achievement in Malaysian undergraduates. International Education Journal, 8(1), 221-228..

[4] Chen, C. (2002). In Kosnin, A.M. (2007). Self-regulated learning and academic achievement in Malaysian undergraduates. International Education Journal, 8(1), 221-228..

[5] Conrad N. & Patry M. (2012), Conscientiousness and Academic Performance: A Mediational Analysis. International Journal for the Scholarship of Teaching and Learning, Vol. 6, No. 1

[6] Cross, R. C., and Steadman, M. H. (1996). Classroom Research: Implementing the Scholarship of Teaching. San Francisco: Jossey-Bass.

[7] Dweck, C.S. (1999). Citing Websites. In Human Intelligence. Retrieved May 13, 2005, from http://www.indiana.edu/~intell/dweck.shtml

[8] Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. Educational Psychologist, 34, 169-189.

[9] Fryer, J.and Elliot, A. (2002). In Yperen, N. W., Elliot, A. J. and Anseel, F. (2009). The influence of mastery-avoidance goals on performance improvement. European journal of social psychology, 39, 932-943.

[10] Garcia, T. (1995). The role of motivational strategies in self-regulated learning. New Directions for Teaching and Learning. Volume 1995, Issue 63, pages 29–42.

[11] Hidi and Ainley (2008). Handbook of Self-Regulation of Learning and Performance. Taylor & Francis.In Barry J. Zimmerman, Dale H. Schunk Ed. Handbook of Self-Regulation of Learning and Performance Taylor & Francis, 2011

[12] Hurter, K. (2009). Usefulness of the NEO-PI-R personality profiles in the selection of psychology master's applications. Thesis submitted for degree of magister atrium in counseling psychology, South Africa.

[13] John O. & Srivastava S. (1999). The Big-Five Trait Taxanomy: History, Measurement and Theoretical Perspectives. In L. Parvin and John O. (Eds). Handbook of Personality: Theory and Research (2nd Edition), Guilford Press, New York.

[14] Judge, T.A. & Ilies, R. (2002). Relationship of Personality to Performance Motivation: A Meta-Analytic Review. Journal of Applied Psychology, Vol. 87, No. 4, 797–807

[15] Klomegah, R. (2007). In Khatib, S. (2010). Meta-cognitive self-regulated learning and motivational beliefs as predictors of college students' performance. International Journal for Research in Education, NO. 27.

[16] Lindner, R. and Harris, B. (1992). In Kosnin, A. (2007). Self-regulated learning and academic achievement in Malaysian undergraduates. International Education Journal, 8(1), 221-228.

[17] Martinez-Pons, M. (1990). In Hardie, J. (2009). New Opportunities or Difficult Challenges?: Self-regulation of Learning of Chinese Students in a Western University Setting .Unpublished doctoral thesis. University of Canterbury.

[18] Pintrich, P. R. (1999). The role of motivation in promoting and sustaining self-regulated learning. International Journal ofEducational Research, 31 (6), 459-470. Retrieved January 15,2007, from ScienceDirect.

[19] Pintrich, P.R. (2000) The role of goal orientation in self-regulated learning. In M. Boekaerts, P.R. Pintrich, and M. Zeidner (Eds.), Handbook of self-regulation. San Diego, CA: Academic Press

[20] Pintrich, P. R., & De Groot, E. V. (1990). Motivational self-regulated learning components of classroom academic performance. Journal of Educational Psychology, 82, 33-40.

[21] Pintrich, De Groot. (1990). Citing Website. In Sahin Kesici Predicting college students' mathematics anxiety by motivational beliefs and self-regulated learning strategies. College Student Journal. Retrieved from http://findarticles.com/p/articles.

[22] Purdie, N., Hattie, J, & Douglas, G. (1996). In Rotgans, I. J. (2009). Motivation, Achievement-Related Behaviours, and Educational Outcomes. (Unpublished doctoral thesis). Erasmus University Rotterdam, Germany.

[23] Rebovich, J., Brooks, G. & Peterson, E.. (1998). In Kosnin, A.M. (2007). Self-regulated learning and academic achievement in Malaysian undergraduates. International Education Journal, 8(1), 221-228..

[24] Schunk, D. H. & Zimmerman, B. J. (Eds.). (1994). Self-Regulation of Learning and Performance: Issues and Educational Applications. Hillsdale, NJ: Lawrence Erlbaum Associates.

[25] Schunk, D., & Zimmerman B. (2007) (Ed.).Motivation and Self-Regulated Learning: Theory, Research, and Applications. New York: Routledge.

[26] Van Den Hurk, M. (2006). The relation between self-regulated strategies and individual study time, prepared participation and achievement in a problem-based curriculum.Active Learning in Higher Education , Vol. 7, No. 2, 155-169.

[27] Wolters, C. A. (1998). Self–regulated learning and college students' regulation of motivation. Journal of Educational Psychology, 90(2), 224–235.

[28] Zimmerman, B. (1990). Self-Regulated Learning and Academic Achievement: An Overview. Educational Psychologist, 25(1),3-17.

[29] Zimmerman, B. J. (Ed.). (1990). Self-regulated learning and academic achievement [Special issue]. Educational Psychologist , 25, 3–17.

[30] Zimmerman, B.J. (2000). Attaining self-regulation: a social-cognitive perspective. In M. Boekaerts, P.R. Pintrich and M. Zeidner (Eds.), Handbook of Self - Regulation (pp.245- 262), San Diego: Academic Press.