International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)

'A Bridge Between Laboratory and Reader'

www.ijbpas.com

THE RELATIONSHIP BETWEEN COGNITIVE INTELLIGENCE, SELF-ESTEEM, ACHIEVEMENT MOTIVATION AND ACADEMIC PERFORMANCE OF STUDENTS IN KERMAN UNIVERSITY OF MEDICAL

MAHDIEH GHANBARI GOHARI[1], FARSHID KHOSROPOUR[2]

1: Department of Psychology, Zarand Branch, Islamic Azad University, Zarand, Iran

2: Department of Psychology, Zarand Branch, Islamic Azad University, Zarand, Iran

ABSTRACT

The present study examined the relationship between cognitive intelligence, self-esteem, achievement motivation and academic performance of students of Kerman Medical University, 182 students were analyzed population-based Morgan and 125 were selected by simple random sampling. Data gathered using questionnaires and cognitive intelligence Raven (2000), Self-Esteem (1976) Hrmans development incentives (1970) and was measured to the academic performance of the students' final grade point average was used. The data were analyzed using Pearson correlation coefficient and multiple regression analysis showed between cognitive intelligence, self-esteem and achievement motivation and academic performance of students there. However, a significant achievement motivation and academic achievement found.

Keywords: achievement motivation, cognitive intelligence, academic performance, self-esteem.

INTRODUCTION

Training students in all courses, in order to change behavior, thoughts, attitudes and skills they have finally done and academic performance is measured. Factors affecting academic performance relative "is complex because of the concept, which is wider context of environmental factors and personal factors that affect it. One of the aspects of the development of higher education, academic achievement, which means knowledge or skills acquired in the public or private lesson, symptoms usually examined by either or both-

that-are measured masters student status (Shoari nezhad, 2006).Higher education has always been faced with difficulties in teaching and research limitations and achieve predetermined objectives largely depends directly on the success of students. Students, for some reason, the educational and research facilities are not alike, so that in most universities, students of all ages who are failing in school, they are faced with problems (Sherifian, 2003). Intelligence, cognitive psychology is one of the main arguments of the form. Many psychologists have worked on intelligence tests, but so far none have been accepted by all the researchers used a definition that offer. It is very difficult to define all aspects of intelligence in terms of quality, because intelligence and feeling not be visible it is an abstract concept but a hypothetical trait studied is how it works is not the intelligence itself. In addition, intelligence, talent is a talent but a precise memory, learning and other perceptions that influence (Milanifar, 2010). Another variable that can be associated with academic achievement, self-esteem is. Self-esteem is the understanding of oneself, but this perception is associated with value judgments Degree of dignity and self-esteem, and contains possible. Self-esteem is the most important determinant of personality and behavioral

characteristics of human flourishing (Sadralsadat, 2001). Wide acceptance of the importance of self-worth is helpful for the healthy growth has decreased in recent decades, and ways to strengthen and increase the self-esteem the focus of the counselors and psychotherapists. .(Hart, 1993, Bramly, 1978, Puraki, 1970; Rutter, 1987; Werner Vasmyt 1982, quoted Ghaniabadi, 2002). Personality theorists such as Adler, Ericsson, Rajrz·hmgy believe that having an essential role in the healthy development of the individual's sense of self-worth. These theorists in the field agree that mentally healthy life in the shadow of a positive sense of self-worth and a sense of self-worth strong growth form the human being to desired (Ghaniabadi, 2001).

Motivation is one of the most elusive individual needs and motives which was first proposed by Murray. Achievement Motivation is the tendency of a person to pass the dam, to achieve such a goal, maintain high standards and is one of the basic needs and determine human behavior is motivated people who want to complete their development to improve their functionality. They have self-respect, personal responsibility and friends prefer to be aware of any tangible results of their work good grades in their academic and social activities involved (Mac Kolandi, 1987).

The need for the development of the following: the desire to do good things with excellence criteria. This requires people to search "Success in competition with superior standards" are motivated (Mac Kllnd, Atkinson, Clark, and Lowell, 1953, quoted Mohammad Zadeh, 2003). Robins (1993) quoted Saif (2002) drives progress incentive to outdo the others, and strive to achieve progress in accordance with specific criteria for success is and who believes that progress is motivated by a desire to do it well and spontaneously to evaluate their performance pay.

This phenomenon not only effects for the family, school and community based but also threatens the health and mental health(Moghaddam, 1997).

education of their business (Mohammadi and Mojtahed zadeh, 2007). Precisely the aim of training, the use of verbal encouragement, motivation to take advantage of exams and grades, offering new and interesting stimuli, Provide an easy entry to the problem, avoid improper competition among students, using a variety of teaching methods can help teachers to motivate students to make effective (Bahrami, and Rezvan, 2008).

Cooper Smith's self-esteem is usually an individual evaluation "according to the self-preservation. He documents the four factors for

Factors inhibiting progress:The cause of this problem in terms of the psychology of fear of the exam, the exam anxiety, call arises, test anxiety is a common and important phenomenon of education is closely related to the performance and achievement. An additional stress imposed on the student and all factors that impede the accurate processing of information learned and remember what has been learned (Sobhani, 2005).

Reducing failures in education: Provide remedial help for students who are unable to cope on their own academic affairs in such a case, the first step is to allow students to experience success, although low levels. This makes it possible to increase their self-esteem and a more positive attitude towards the the development of self-expression. The first and foremost of all, respect, acceptance of cookies advantage that a person receives the second factor, the third step in the life of our successful experiences, values and expectations based on the experience, the practice of interpretation put forth a response to the loss of value is (according to the Meftah, 2003). Nikoiee (2014) in his study on the relationship between perfectionism and self-esteem and academic achievement, self-esteem and motivation to conclude that there is motivated the development of greater solidarity towards

perfectionism and self-esteem and academic performance had.

Homaee (2010) in his study on the relationship between emotional intelligence and cognitive intelligence and achievement motivation and academic performance found a significant relationship between achievement motivation and academic performance of cognitive does not exist.

Ashayeri (2010) in their study found that high self-esteem by providing incentives for better performance in various areas of influence.

Biabangard (2006) in their research came to the conclusion that self-esteem between academic progress, between achievement motivation and academic progress, there was no significant correlation.

Abdollahi (2000) in a study of 1335 students in 7 schools selected by stratified sampling. The results showed that there is a significant relationship between achievement motivation and academic performance of students.

Muyis, Franco, drives and Lucy (2010) in his study concluded that increased motivation depends on the student's academic performance of students with higher achievement motivation and academic performance was also exceeded.

Morris (2010) found that self-esteem was received with credit scores as a confirmatory test and the mean scores of students in the class

to receive credit by students with higher self-esteem scores are positively correlated. Chamorro-premuzic, Quiroga, colom(2009) research on intelligence and academic performance concluded the high intellectual ability of students to increase grades in particular, engineering and math courses. Sanders, Osborne Greene (2005) of research on cognitive intelligence, academic performance of the students came to the conclusion that there is a relationship between these two variables among students in urban areas ,while in rural areas such association was found for the relationship between the first and second year students of the university.

Gottfredson(2003) In his study on the relationship between cognitive intelligence, academic performance, there was a significant correlation found between cognitive intelligence and academic performance.

Brody(2000) The research concluded that there is a significant relationship between cognitive intelligence and academic performance.

Ross. Broh(2000)) Study to examine the relationship between self-esteem and academic performance of 64 students did a group of students to test their actual score and the other lower than their actual score was 10 points. The results of this study showed that the academic

performance and self-esteem have a direct relationship with each other.

Leonadari Et al (1998) The relationship between the image of their academic performance, motivation, self-esteem and insist on doing their investigation. They observed that the academic performance of students who took precedence over their images are clear and realistic, the testing that have higher self-esteem and motivation were more insist on more is better.

Shoonk (1991) in their research found that young people who have high achievement motivation than those who have less incentive to progress to higher education, achievement in the higher Non companies tend lesson.

Krnys, Brock nar, and Frankel (1989) to investigate the relationship between self-esteem and academic achievement Drpzhvhsh concluded that the increase in self-esteem, the value of a sense of empowerment and positive changes such as increased academic achievement comes at him.

Measuring   Tools
1-Riyoon scale cognitive intelligence:

This test consists of 60 questions and 45 minutes of video can be implemented in a test conducted, Riyoon 's progressive matrices Riyoon 's and general intelligence of the raw scores of all ages will have the indication is

that the range of 9 to 18 years old Raven general intelligence varies. General intelligence will grow until puberty. For people over 18 years, the equivalent of 18 years can be seen in the table were calculated. Riyoon questionnaire scoring key and questions with correct answers are scored from 1, they are questions with wrong answers are zero; Scores are then summarized in Table equivalent Scores are determined by (Abbas, 1384).

This test is widely used in clinical practice and research this means that the test of the desired level of reliability and validity have a test to measure IQ is widely Adult Riyoon Form 6 Questions images and 120 each of the five groups (A to E) is formed. (Baraheni quoted by Motamedi and Afrooz) coefficients of internal consistency test with 500 students / adults of all ages in the United States between 0/89 to 0/97 reported. Test the validity of the method, 0/89, 0/81, 0/87 reported. On 310 people in Tehran 0/89 to 0/95 reliability and validity range between 0/24 to 0/61 was reported.The test-retest reliability of the test is obtained 0/92 (Rahmani, 2004).

2-CooperSmith Self Esteem Inventory Cooper Smith (1976) based his appeal on the scale of self-esteem scale, "Rodgers and Daymond" in (1954) did, Coopersmith Self-Esteem Inventory consists of 58 articles, 8 of

which is the number of polygraph 26,32,36,41,45,50,53,58, The validity of the correlation between the score for the final exam with a score of 230 girls and boys were obtained, For boys and 96 for girls and %71 of test-retest reliability of the method was %90 for boys and %92 for females.

3- Hermans achievement motivation questionnaire   :
Achievement Motivation Test in 1970 was made by Hermans and has 29 questions and scoring , according to the characteristics of the questions has been prepared on the basis of done some positive and some negative questions are presented. Shall be subject to any question, one of the options (a-b-c-d) select and enter a reply, Norm practical issue of the reliability and validity of Achievement Motivation Test Hermans by Kamal Pur (2008) carried out and the results of the implementation of the two-way analysis of variance showed the age of students is ineffective in changing the distribution of observed values. Cronbach's alpha reliability coefficient was calculated using %79 of the test set.

4-   academic   performance
To measure the academic performance of the students' final grade point average was used.

METHODOGY

The sample was randomly sampling based on the number of students in the next phase of the project was presented to the students a general description and if consent were included in the study questionnaire self-esteem, achievement motivation given to students Students were individually cognitive intelligence test and questionnaire data was collected were analyzed in the final stage of the final report was presented. And to measure the academic performance of the students' final scores were used.

Hypothesis 1: The cognitive intelligence, self-esteem and academic performance are related.

Table 1 shows the results of the regression analysis on the variables of cognitive intelligence, academic performance; self-esteem shows the ratio of the observed F with 2/788 value is not significant. (0/065 significance level is greater than the minimum 0/05) Consequently, a linear combination of two variables and cognitive intelligence, self-esteem, both "can be a predictor of academic performance. As a result, the relationship between cognitive intelligence and self-esteem and academic performance there is genotypic.

Table 2. Regression coefficients of the variables predicted cognitive intelligence, self-esteem, displays, b coefficients to determine

the impact of these variables on the criterion variable and standardized Beta coefficients assess the contribution of each predictor variables and given values of t and their significance level (0/206 and 0/079 which are greater than 0/05) may indicate that none of the two variables, cognitive intelligence and self-esteem are predicting academic performance.

Hypothesis 2: between cognitive intelligence and achievement motivation and academic performance are related.

Table 3- Results of regression analysis on the variables of cognitive intelligence and achievement motivation and academic performance display, F ratio observed with the 4/664 is significant at less than 0/05, in conclusion we can say that the cognitive intelligence and achievement motivation variables are predictors of academic performance and through them to predict academic performance among students is possible. As a result, the second hypothesis that the cognitive intelligence and achievement motivation and academic performance of students, there, is confirmed. The R2 value of R and X are combined in varying states of cognitive intelligence and motivation to progress together, "1.7 percent of variance explained their academic performance.

Table 4- Regression coefficients for the variables of cognitive intelligence and motivation to show progress, b coefficients to determine the effect of the predictor variables is and standardized Beta coefficients represent the contribution of each predictor variables is assessed. Due to the significant t-values in the above table it can be said that in the linear combination can only motivate progress could be involved in the regression equation and cognitive intelligence, according to its meaning

(0/269 is less than the minimum 0/05) Contribution to the regression equation and can not be predicted academic performance.

Hypothesis 3: The relationship between self-esteem and achievement motivation and academic performance of students there.

Table 4. Results of regression analysis of 10 variables, academic performance, self-esteem and motivation to show progress, F ratio observed with a value of less than 0/01 and 5/302meaningful predictor variables thus can be said to have the power to predict academic performance as a result of the third research hypothesis that the self-esteem and achievement motivation and academic performance of students there will be confirmed the R2 value indicates that a linear

combination of these two variables account for 8% of the variance in academic performance. Table6-Regression coefficients of the predictor variables of motivation and self-improvement shows, the coefficient b is used to determine the effect of the predictor variables the standardized beta coefficients indicate the assessment of the contribution of each of the predictor variables. T values calculated according to the academic Performance and a significant level of achievement motivation in the table above, we can say only this linear combination can be involved in the regression equation but varies according to the level of self-esteem means (0/122 to 0/05 is greater than the minimum value) is not part of the equation to predict academic performance. Generally, the best predictor variables predictive of academic performance, achievement motivation variable r = 0/248 that this variable alone would be 6/15 percent the variance of academic performance to interpret. But 3 linear combination of cognitive, self-esteem and achievement motivation could be8/6 percent explaining the variance in academic performance. But the combination of the 2 variable cognitive intelligence, self-esteem, academic performance is not predictive power As well as a linear combination of cognitive intelligence and achievement motivation and R2 of 1.7percent and a linear combination of self-esteem and achievement motivation R2 equivalent to 8% of any of the variables of cognitive intelligence and self-esteem had a role in the regression equation.

Table 1 Regression analysis based on the variables of cognitive intelligence, academic performance, self-esteem

sources	SS	D.f	MS	F	Sig
regression	4/57	2	1/285		
remaining	100/007	122	0/82	2/788	0/065
total	104/577	124			

Table 2. Regression coefficients for the variables of cognitive intelligence and self-esteem in predicting academic performance

variables	Standardized coefficients do not vary		standardized coefficients	T	Sig
	B	Standard error	Beta		
Fix variables	14/618	1/304	-	11/213	0/000
cognitive intelligence	0/015	0/012	0/114	1/271	0/206
Self esteem	0/015	0/008	0/159	1/773	0/079

Table 3 - Regression analysis based on the variables of cognitive intelligence, academic performance and achievement motivation

Sources	SS	D.f	MS	F	sig	R	R²
Regression	7/429	2	3/714				
Remaining	97/148	122	0/796	4/664	0/011	0/267	0/071
Total	104/577	124					

Table4; Regression coefficients for the variables of cognitive intelligence and achievement motivation in predicting academic performance

variables	Standardized coefficients do not vary		standardized coefficients	T	Sig
	B	Standard error	Beta		
Fix variables	14/684	1/284	-	11/432	0/000
cognitive intelligence	0/013	0/011	0/098	1/111	0/269
Self esteem	0/009	0/004	0/231	1/613	0/01

Table 5: Regression analysis based on the variables of self-esteem, academic performance and achievement motivation

Sources	SS	D.f	MS	F	sig	R	R²
Regression	8/363	2	4/181				
Remaining	96/214	122	0/789	5/302	0/006	0/283	0/08
Total	104/577	124					

Table 6: Regression coefficients of the variables in the prediction of academic achievement and self-esteem

variables	Standardized coefficients do not vary		standardized coefficients	T	Sig
	B	Standard error	Beta		
Fix variables	15/787	0/3	-	52/607	0/000
cognitive intelligence	0/009	0/004	0/225	2/547	0/012
Self esteem	0/013	0/008	0/137	1/559	0/122

The results showed that: Between cognitive intelligence, self-esteem and achievement motivation and academic performance of students there the only motivation for progress in the regression equation, and the role of cognitive variables, intelligence, self-esteem on the part of the regression equation is not linear combination. Nikoiee (2014) in his study on the relationship between perfectionism and self-esteem and academic achievement, self-esteem and motivation to conclude that there is motivated the development of greater solidarity towards perfectionism and self-esteem and academic performance had. Homaee (2010) in his study on the relationship between emotional intelligence and cognitive intelligence and achievement motivation and academic performance found a significant relationship between achievement motivation and academic performance of cognitive Vhvsh does not exist.

Biabangard (2006) in their research came to the conclusion that self-esteem between academic progress, between achievement motivation and academic progress, there was no significant correlation.

Abdollahi (2000) in a study of 1335 students in 7 schools selected by stratified sampling. The results showed that there is a significant relationship between achievement motivation and academic performance of students.

Muyis, Franco, drives and Lucy (2010) in his study concluded that increased motivation depends on the student's academic performance of students with higher achievement motivation and academic performance were also exceeded. The findings of this study are consistent with the above research, the motivation is the most important factor in academic achievement. The motivation to increase energy and enhance students' ability to duplicate effort and success will follow.

Morris (2010) found that self-esteem was received with credit scores as a confirmatory test and the mean scores of students in the class to receive credit by students with higher self-esteem scores are positively correlated.

Chamorro-premuzic ,Quiroga, colom(2009) research on intelligence and academic performance concluded the high intellectual

ability of students to increase grades in particular, engineering and math courses .

Sanders, Osborne Greene (2005) of research on cognitive intelligence, academic performance of the students came to the conclusion that there is a relationship between these two variables among students in urban areas ,while in rural areas such association was found for the relationship between the first and second year students of the university.

Gottfredson (2003) In his study on the relationship between cognitive intelligence, academic performance, there was a significant correlation found between cognitive intelligence and academic performance.

Brody (2000) The research concluded that there is a significant relationship between cognitive intelligence and academic performance.

Ross. Broh (2000)) Study to examine the relationship between self-esteem and academic performance of 64 students did a group of students to test their actual score and the other lower than their actual score was 10 points. The results of this study showed that the academic performance and self-esteem have a direct relationship with each other

Ashayeri (1388) in their study found that high self-esteem by providing incentives for better performance in various areas of influence.

Our results are not consistent with the above findings, the motivation plays an important role also seems to have an important role to cognitive intelligence because students in the almost "the same intelligence and self-esteem on the other hand may overlap with variable motivation and thus the difference between the above variables is assessed.

Between cognitive intelligence, there is a significant relationship between self-esteem and academic performance. these findings are consistent with results from other researches, most of the variables mentioned in most studies of self-esteem and intelligence or other variables were independently evaluated the other hand, because the levels of education Students' self-esteem and intelligence within less equally between them.

Between cognitive intelligence and achievement motivation and academic performance of students, there will be progress. But only motivation the regression equation and cognitive intelligence can play a part in the regression equation to predict academic performance is. The research cited by the study is probably inconsistent, "the motivation is so high that it affects other variables in addition, students at the level of cognitive ability were able to enter the university and intellectual

differences are not great differences with each other.

REFERENCES

Abdullahi, O. E. (2000). Relationship Among Achievement Motivation, Self- Esteem, Locus of Control and Academic Performance of Nigerian University Student. The Nigerian Journal Of Guidance And Counseling Vol. 7 (1) 2000: pp. 130-141.

Arizona state university intergroup Relations center(Glossary).in Date 2005/4/28.

Bahrami, F., Rezvan. Sh. (2008) . Anxious thoughts and metacognitive beliefs among high school students with generalized anxiety disorder, psychiatry and clinical psychology, Vol. XIII, No. 3 successive 50.

Bandura,A.(1997).self-efficacy: the exercise of control.new York:freeman.

Brody, N.(2000). History of theories and measurements of intelligence.In R. J. Sternberg (Ed.), Handbook of intelligence (pp.16–33).New York: Cambridge University Press.

Branden, nathaneil(2000)the psychology of self-steem;Translated by Mahdi Gharachedaghi,Tehran:Nakhostion Emission(in persion).

Chamorro-Premuzic, T., Quiroga, M. A. & Colom, R.(2009). Intellectual competence and academic performance: A Spanish study.

Learning and Individual Differences. Vol: 19, PP. 486–491.

Cole,(2004),Achierement motivation and personality *Journal* of college Reding.&.and lerning, 34 spring 2004 www.Eric

campbel .J. D.8 f ehr B.(1990). Self-esteem and perceptions of conveyed impressions: is negative affectivity associated with greater realism?*Journal of Personality and SocialPsychology.*(1),122-133

Covington,M. (1989). Self-esteem and failure in school.US. Press, Berkeley, CA.

coopersmit ,s.(1976). The Antecedent of Self-esteem san francisico:W.H.freeman.

Ghaniabadi, Khadija al-Sadat (2002). Due to their sense of value in psychotherapy and counseling clients in the process.Quarterly Mshavr.thran message: Beyond Knowledge

Gottfredson, L. (2003). Dissecting practical intelligence theory: Its claims and evidence. Intelligence, 31, 343–397.

Hermans, H.J., (1970). A Questionnaire Measure of Achierement Motivation, *Journal of Applied Psychology*, Vol. 54, No 4, 353-363

Homaee, R., et al (2010).rabth motivation,cognitive intelligence and emotional intelligence and academic performance of students of Islamic Azad University of Ahvaz.New findings in psychology, No. 12, S63-49.

Hosseini Tabatabaei, Fuzieh and Malekmohamm Ghadimi Moghaddam(2007); "The Study Reseans of Girls, Academic Achievement Compare to Boys in Razavi, Northern and Southern Khorasan"; *Knowledge and Research In Educational Sciences*, Vol. 15, pp. 119-147 (in Persian).

Meftah , M. (2003). Low-to-face relationships and self-esteem and academic achievement of students in Tehran second master's theses.

Milanifar, B. (2010) Psychology of Exceptional Children Eighth Edition, Tehran: Ghomes.

Mohammadi. A, a priest born.(2007). Database of Medical Colleges rankings. Printing .thran: Ministry of Health and Medical Education.

Motamedi Sharek F, Afrooz GH. (2007) Attributional Styles and Mental Health in Gifted Vs. Normal Students.Iran JPsychiatry Clin Psychol; 13(2): 173-81.[In Persian].

leondari,A. syngollitov, E .& Kiosseoglou, G(1998). Academic achieve ment ,mot.vation and future selves.journal of Education studies .VOL,24(2):153-163.

McClelland, D.C (1987). Human motivation.cambridge university press.

McClelland, D.C. (1961). The Achieving Society, Princeton, N.J.: D. Van Nostrand.

Miller,T, Rothblu .D, brand.P, felicio. D (1995). Doobese women have poorersocial Relationships than Nonobewe women resport by self, friends,and coworks Journal, of Personality.63.1.

Motamedi Sharek F, Afrooz GH. (2007) Attributional Styles and Mental Health in Gifted Vs. Normal Students. Iran JPsychiatry Clin Psychol; 13(2): 173-81.[In Persian].

Morris, M, O lee.M,F(2010). Academics self-esteem and perceived validity grads a test of self-esteem.Theory   "The.Journalof contemporary of education Psychology P414-246.

Muis,K. R., Franco, G. M., Ranellucci, J, & Crippen, K. J. (2010). Increasing Academic Performance and Retention in Undergraduate Science Students:

Peterson, J (2002).A follow-up study of one group of achievers and under achievers four years after high school graduation.Journal of Roper Review.Vol 22 (4): P. 217.

Rahmani, J. (2004). Reyoon in the standardization Esfhan,Research Council of State Office of Education.

Reyoon J(2000). The Raven's progressive matrices: change and stability over culture and time. Cogn Psychol; 41(1): 1-48.

Robbins,S.P(1993).organizational behavior(6 thed).Englwood Cliffsnj:Prentic-hall.

Reynolds, C. R., & Kamphause, R.W.(2003). Handbook of Psychological & Educational Assessment of Children.The Guilford Press.

Ross C.E.and B.A.Broh (2000). Seconce of Oersonal Control in the Academic Achievement Process"; sociology of education; Vol. 73, No. 4, pp. 270 -284.

Sanders, W. B. , Osborne, R. T. ,and Greene, J. E. (2005). Intelligence and academic performance of college students of urban, rural, and mixed backgrounds. Journal of Educational Research, 49, 185–193.

Sherifian, A. (2003) Factors affecting students' progress in the control of Allameh Tabatabai University, Social Science Quarterly, No. 15 and 16.

Slavin, R. E. (1983). Cooperative Learning. New York: Longman

Silverstone.H.P(1991).low   Self-esteem   in different Psychology conditions .British Journal of clinical Psychology.Vol:30,183-188.

Sobhani .R.(2005). Check the hardiness of emotional intelligence and academic achievement. Master's thesis, Islamic Azad University,Science and Research.

Spearman, C.(1904). General intelligence objectively determined and measured. American Journal of Psychology 15, 201-293

Strenberg, R. J. (1985).*Beyond IQ: The triarchic theory of human intelligence*. New York:Cambridge University Press.

Strenberg, R. J.(1997).*Successful intelligence*. New York: Plume

Thurstone, L. L. (1935).*The vectors of mind: Multiple factor analysis for the isolation of primary traits.*Chicago Illinois: University of Chicago Press.