Research Article

THE CORRELATION BETWEEN THE ENNEAGRAM PERSONALITY TYPES AND THE RATE OF SENSATION SEEKING

*Mojgan Nickname and Sara Ilkhanizadeh
Department of Counseling, Roudehen Branch, Islamic Azad University, Roudehen, Iran
*Author for Correspondence

ABSTRACT

This research seeks to determine the correlation between the Enneagram personality types and the rate of sensation seeking. This research is non-experimental and correlative. The statistical population of this study consists of female students at Khayyam high school of Sari City during the scholastic year of 2014-15, and the sampling has convenience method, so that 116 out of 550 subjects are randomly selected as the samples according to Morgan table and they are entered in structure of research. Data is analyzed through descriptive indices and multivariate regression analysis as well as Pearson correlation test by SPSS software. The results of analyzing this research indicate that there is only the significant correlation between the reformer, artist, performer, observer, generalist and boss personality type with sensation seeking.

Keywords: Enneagram Personality Types, Sensation Seeking

INTRODUCTION

Sensation seeking is a personality trait which is important for understanding the regulation of motivation (Zuckerman, 1978; quoted by Mashhadi, Momeni, Teymouri, 2010).Sensation seeking may be related to the personality characteristics. Depending on the type of personality, the people make the type of their thinking and excitement. Furthermore, due to the complexity of personality, it is very difficult to determine its quality and quantity as a psychological structure. This difficulty is in determining its impact on the thoughts and feelings (Bakhshayesh, 2013). According to Zuckerman, the sensation seeking is a trait with the need for a variety of new and complex experience and emotion and the desire to psychological and physical risks because of these experiences. The person with high sensation seeking prefers the permanent outer stimulation of brain, and becomes bored with routines and constantly looks for ways to increase the motivation through exciting experiences. The person with low sensation seeking prefers lower brain stimulation and relatively well tolerates the ordinary tasks (Marshall, translated by Seyed-Mohammadi, 2001). According to Zuckerman, the sensation seeking means searching for exciting and diverse, new and complex experience, and desire to engage in physical, social and financial risks because of these experiences (Zuckerman *et al.,* 1999).

The personality type "B" disorders are determined with impulsivity and disorder (America Psychiatric Association, 2004) and the concepts such as risk taking and sensation seeking are raised along with the concept of impulsivity (Zuckerman *et al.,* 1993).The sensation seeking is associated with the antisocial and Narcissistic personality disorders (Egan *et al.,* 2001). The study by Aluja *et al.,* (2007) also indicates that the Impulsive-Unsocialized Sensation Seeking (ImpSS) (including the measures of sensation seeking and impulsivity) is associated with the antisocial, borderline and narcissistic personality disorders. Huang *et al.,* (2011) have also reported that the Impulsive-Unsocialized Sensation Seeking is associated with the antisocial, histrionic and borderline Personality Disorders. Reist *et al.,* (1990) have also reported the relationship between the Impulsive-Unsocialized Sensation Seeking with borderline personality disorder. Several studies have also shown the correlation between the sensation seeking with antisocial behavior (Jefferson & Johnson, 1991), and sensation seeking with histrionic personality and borderline disorders (Egan *et al.,* 2001).The personality disorders underlie most of the medical and psychiatric problems (Sadock and Sadock, 2007).

According to what is mentioned about nine cognitive types and sensation seeking level, this study aims at investigating the correlation between nine personality types with rate of sensation seeking in girls; and the

---

Research Article

main research question seeks to answer the question whether there is a significant correlation between nine Enneagram personality types and levels of sensation seeking in girls?

MATERIALS AND METHODS

This study has descriptive-correlative and survey type. The statistical population in this study consists of female students at Khayyam high school of Sari City.120 out of 550 subjects are randomly selected from the population and 116 subjects are entered in the research structure after removing the distortive questionnaires.

Research Tools

Enneagram personality questionnaire: Hoseinian *et al.,* (2012) have introduced the validity coefficient of this questionnaire for nine types equal to 0.81 by internal consistency and 0.98 by retest test.

Zuckerman Sensation Seeking Scale: MahviShirazi (2008) reported the reliability coefficient equal to 0.78by Cronbach's alpha in his study.

The multivariate regression analysis is utilized for data analysis in this study.

RESULTS AND DISCUSSION

Results

Descriptive data is presented in Table 1.

Table 1: Descriptive indices of personality types and sensation seeking

	Mean	Standard deviation
Reformer	13.85	2.628
Helper	13.81	2.644
Performer	13.91	2.721
Artist	13.97	2.760
Observer	13.94	2.707
Prudent	13.86	2.640
Generalist	13.99	2.707
Controller	13.91	2.633
Peace-seeking	13.94	2.668
Sensation seeking	12.24	2.201

Table (1) shows that the scores have positive moderate to high skewness. The quotient of dividing the amount of skewness by the standard error of skewness is higher than the critical value of normal distribution (1.96)and it can be concluded that the distribution of scores is not normal in terms of skewness and it is negative according to the kurtosis and from low to moderate. The distribution of scores is approximately normal in terms of kurtosis.

Investigation of Assumptions

Table 2: Tests for normality of personality types

Variable	Kolomogrov- Smirnov Statistics	Degrees of freedom	Significance level
Reformer	0.196	116	0.000
Helper	0.198	116	0.000
Performer	0.192	116	0.000
Artist	0.189	116	0.000
Observer	0.187	116	0.000
Prudent	0.197	116	0.000
Generalist	0.186	116	0.000
Controller	0.196	116	0.000
Peace-seeking	0.189	116	0.000

Research Article

According to the Table 2, the distribution of scores in types of personality is not normal. Despite the fact that these tests are sensitive to sample size, the results are almost consistent with previous method.
1. There is a significant correlation between the Enneagram personality types and rate of sensation seeking.

Table 3: Summary of regression model

Model	R	Squared correlation	Adjusted squared correlation	Standard error of approximation	Durbin-Watson
1	0.511	0.261	0.123	29.879781	1.558

Table 3 shows that the multiple-correlation between Enneagram personality types with rate of sensation seeking is equal to 0.511. The rate of adjusted multiple correlation suggests that the predictive variables predict only 12.3% of variance in sensation seeking. The value of Durbin-Watson test indicates that the errors are independent of each other. The normal amount is from 1.5 to 2.5.

Table 4: Analysis of variance for significant squared correlation

Model		Sum of squares	Degrees of freedom	Mean square	F	Significance level
1	Regression	25270.134	15	1684.676	1.887	0.037
	Error	71424.105	80	892.801		
	Total	96694.240	95			

Table 4 shows that the squared multiple-correlation is significant at the alpha level of 5%. Therefore, the main hypothesis is confirmed. The results of following table are considered to determine which variables predict the sensation seeking.

Table 5: Regression coefficients

Model		Non-standardized coefficients		Standardized coefficients	t	Significance level
		B	Standard error	Beta		
1	Constant value	79.344	18.107		4.382	0.000
	Reformer	0.235	0.430	0.243	0.546	0.586
	Helper	1.047	1.219	1.097	0.859	0.393
	Performer	-0.641	0.360	-0.667	-1.780	0.079
	Artist	0.115	0.117	0.122	0.990	0.325
	Observer	-0.099	0.123	-0.103	-0.806	0.422
	Prudent	-0.571	1.341	-0.602	-0.426	0.671
	Generalist	0.589	0.448	0.617	1.316	0.192
	Controller	-0.191	0.597	-0.201	-0.319	0.750
	Peace-seeking	-0.153	0.103	-0.166	-1.477	0.144
	Judicial thinking	-0.125	0.101	-0.130	-1.241	0.218

Table 6: Summary of reformer and sensation seeking correlation regression model

Model	R	R-squared	Adjusted R-squared	Standard error of approximation	Durbin-Watson	F	Significance level
1	0.069	0.005	-0.006	31.996480	1.399	0.449	0.505

α. Predictors of: (Constant), Reformer
β. Dependent variable: Sensation seeking

Research Article

Table 6 shows that the correlation coefficient between variables is equal to 0.069 and it is not significant at the alpha level of 5%. The amount of Durbin-Watson test indicates that the errors are independent. The normal amount is from 1.5 to 2.5, thus the first sub-hypothesis is not confirmed. The square of adjusted correlation indicates that -0.6% of variance for sensation seeking is explained by reformer personality type.

Table 7: Regression correlation coefficients of reformer and sensation seeking

Model		Non-standardized coefficients		Standardized coefficients	t	Significance level
		B	Standard error	Beta		
1	(Constant value)	49.055	17.562		2.793	0.006
	Reformer	0.824	1.230	0.069	0.670	0.505

α. Dependent variable: Sensation seeking

Table 7 shows that the reformer personality type cannot significantly predict the sensation seeking.

Table 8: Summary of regression correlation model for helper and sensation seeking

Model	R	R-squared	Adjusted R Squared	Standard error of approximation	Durbin-Watson	F	Significance level
1	0.167[a]	0.028	0.018	31.621215	1.373	2.704	0.103[a]

α. Predictors: (Constant), helper
β. Dependent variable : Sensation seeking

Table 8 shows that the correlation between variables is equal to 0.167 and insignificant at the alpha level of 5%. The value of Durbin-Watson test indicates that the errors are independent. The normal value is from 1.5 to 2.5. Thus, the second sub-hypothesis is not confirmed. The value of adjusted squared correlation indicates that 1.8% of variance in sensation seeking is explained by helper personality type.

Table 9: Regression coefficients of correlation for helper and sensation seeking

Model		Non-standardized coefficients		Standardized coefficients	t	Significance level
		B	Standard error	Beta		
1	(Constant value)	33.286	16.931		1.966	0.052
	Helper	1.967	1.196	0.167	1.644	0.103

Table 9 shows that the helper personality type cannot significantly predict the sensation seeking.

Table 10: Summary of regression correlation model for performer and sensation seeking

Model	R	R-squared	Adjusted R Squared	Standard error of approximation	Durbin-Watson	F	Significance level
1	0.042[a]	0.002	-0.009	32.044321	1.400	0.167	0.684[a]

α. Predictors: (Constant), Performer
β. Dependent variable : Sensation seeking

Table 10shows that the correlation between variables is equal to 0.042 and insignificant at the alpha level of 5%. The value of Durbin-Watson test indicates that the errors are independent. The normal value is

Research Article

from 1.5 to 2.5. Thus, the third sub-hypothesis is not confirmed. The value of adjusted squared correlation indicates that -0.9% of variance in sensation seeking is explained by performer personality type.

Table 11: Regression coefficients of correlation for performer and sensation seeking

Model		Non-standardized coefficients		Standardized coefficients	t	Significance level
		B	Standard error	Beta		
1	(Constant value)	53.736	17.151		3.133	0.002
	Performer	0.493	1.207	0.042	0.409	0.684

a. Dependent variable: Sensation seeking

Table 11 shows that the performer personality type cannot significantly predict the sensation seeking.

Table 12: Summary of regression correlation model for artist and sensation seeking

Model	R	R-squared	Adjusted Squared	Standard error of approximation	Durbin-Watson	F	Significance level
1	0.202[a]	0.041	0.031	31.410809	1.457	4.004	0.048[a]

α. Predictors: (Constant), Artist
β. Dependent variable : Sensation seeking

Table 12 shows that the correlation between variables is equal to 0.202 and insignificant at the alpha level of 5%. The value of Durbin-Watson test indicates that the errors are independent. The normal value is from 1.5 to 2.5. Thus, the fourth sub-hypothesis is confirmed. The value of adjusted squared correlation indicates that 3.1% of variance in sensation seeking is explained by artist personality type.

Table 13: Regression coefficients of correlation for artist and sensation seeking

Model		Non-standardized coefficients		Standardized coefficients	t	Significance level
		B	Standard error	Beta		
1	(Constant value)	27.773	16.723		1.661	0.100
	Artist	2.360	1.179	0.202	2.001	0.048

a. Dependent variable: Sensation seeking

Table 13 shows that the artist personality type can significantly predict the sensation seeking.

Table 14: Summary of regression correlation model for observer and sensation seeking

Model	R	R-squared	Adjusted Squared	Standard error of approximation	Durbin-Watson	F	Significance level
1	0.006[a]	0.000	-0.011	32.072111	1.414	0.004	0.951[a]

α. Predictors: (Constant), observer
β. Dependent variable : Sensation seeking

Table 14 shows that the correlation between variables is equal to 0.006 and insignificant at the alpha level of 5%. The value of Durbin-Watson test indicates that the errors are independent. The normal value is from 1.5 to 2.5. Thus, the fifth sub-hypothesis is not confirmed. The value of adjusted squared correlation indicates that -1.1% of variance in sensation seeking is explained by observer personality type.

Research Article

Table 15: Regression coefficients of correlation for observer and sensation seeking

Model		Non-standardized coefficients		Standardized coefficients	t	Significance level
		B	Standard error	Beta		
1	(Constant value)	61.668	17.358		3.553	0.001
	Observer	-0.075	1.215	-0.006	-0.062	0.951

a. Dependent variable: Sensation seeking

Table 15 shows that the observer personality type cannot significantly predict the sensation seeking.

Table 16: Summary of regression correlation model for prudent and sensation seeking

Model	R	R-squared	Adjusted R Squared	Standard error of approximation	Durbin-Watson	F	Significance level
1	0.163[a]	0.027	0.016	31.642515	1.370	2.574	0.112[a]

α. Predictors: (Constant), prudent
β. Dependent variable : Sensation seeking

Table 16 shows that the correlation between variables is equal to 0.163 and insignificant at the alpha level of 5%. The value of Durbin-Watson test indicates that the errors are independent. The normal value is from 1.5 to 2.5. Thus, the sixth sub-hypothesis is not confirmed. The value of adjusted squared correlation indicates that 1.6% of variance in sensation seeking is explained by prudent personality type.

Table 17: Regression coefficients of correlation for prudent and sensation seeking

Model		Non-standardized coefficients		Standardized coefficients	t	Significance level
		B	Standard error	Beta		
1	(Constant value)	33.901	16.962		1,999	0.049
	Prudent	1.920	1.197	0.163	1.604	0.112

a. Dependent variable: Sensation seeking

Table 17 shows that the prudent personality type cannot significantly predict the sensation seeking.

Table 18: Summary of regression correlation model for generalist and sensation seeking

Model	R	R-squared	Adjusted R Squared	Standard error of approximation	Durbin-Watson	F	Significance level
1	0.081[a]	0.007	-0.004	31.967272	1.397	0.621	0.433[a]

α. Predictors: (Constant), generalist
β. Dependent variable : Sensation seeking

Table 18 shows that the correlation between variables is equal to 0.081 and insignificant at the alpha level of 5%.
The value of Durbin-Watson test indicates that the errors are independent. The normal value is from 1.5 to 2.5. Thus, the seventh sub-hypothesis is not confirmed.
The value of adjusted squared correlation indicates that -0.4% of variance in sensation seeking is explained by generalist personality type.

Research Article

Table 19: Regression coefficients of correlation for generalist and sensation seeking

Model		Non-standardized coefficients		Standardized coefficients	t	Significance level
		B	Standard error	Beta		
1	(Constant value)	47.294	17.209		2.748	.00 7
	Generalist	0.948	1.202	0.081	0.788	0.433

a. Dependent variable: Sensation seeking

Table 19 shows that the generalist personality type cannot significantly predict the sensation seeking.

Table 20: Summary of regression correlation model for controller and sensation seeking

Model	R	R-squared	Adjusted R Squared	Standard error of approximation	Durbin-Watson	F	Significance level
1	0.148[a]	0.022	0.011	31.719724	1.373	2.104	0.150[a]

α. Predictors: (Constant), controller
β. Dependent variable : Sensation seeking

Table 20 shows that the correlation between variables is equal to 0.148 and insignificant at the alpha level of 5%. The value of Durbin-Watson test indicates that the errors are independent.
The normal value is from 1.5 to 2.5.
Thus, the eighth sub-hypothesis is not confirmed. The value of adjusted squared correlation indicates that 1.1% of variance in sensation seeking is explained by controller personality type.

Table 21: Regression coefficients of correlation for controller and sensation seeking

Model		Non-standardized coefficients		Standardized coefficients	t	Significance level
		B	Standard error	Beta		
1	(Constant value)	36.233	17.118		2.117	0.037
	Controller	1.747	1.204	0.148	1.451	0.150

a. Dependent variable: Sensation seeking

Table 21 shows that the controller personality type cannot significantly predict the sensation seeking.

Table 22: Summary of regression correlation model for peacemaker and sensation seeking

Model	R	R-squared	Adjusted R Squared	Standard error of approximation	Durbin-Watson	F	Significance level
1	0.155[a]	0.024	0.014	31.682998	1.420	2.327	0.131[a]

α. Predictors: (Constant), peacemaker
β. Dependent variable : Sensation seeking

Table 22 shows that the correlation between variables is equal to 0.155 and insignificant at the alpha level of 5%. The value of Durbin-Watson test indicates that the errors are independent. The normal value is from 1.5 to 2.5. Thus, the ninth sub-hypothesis is not confirmed. The value of adjusted squared correlation indicates that 1.4% of variance in sensation seeking is explained by peacemaker personality type.

Research Article

Table 23: Regression coefficients of correlation for peacemaker and sensation seeking

Model		Non-standardized coefficients		Standardized coefficients	t	Significance level
		B	**Standard error**	**Beta**		
1	(Constant value)	85.488	16.623		5.143	0.000
	Peacemaker	-1.789	1.173	-0.155	-1.525	0.131

a. Dependent variable: Sensation seeking

Table 23 shows that the peacemaker personality type cannot significantly predict the sensation seeking.

Discussion
This research aim at investigating the correlation between the Enneagram personality types with rate of sensation seeking. The results of data analysis and explanations of hypotheses are presented as follows: According to the results, the adjusted square of correlation indicates that -0.6% of variance in sensation seeking is explained by the reformer personality type. These findings are consistent with the results of research by Sumer *et al.,* (2005); Clarke and Robertson (2005); Hashemian *et al.,* (2010); Desrichard and Denarie (2005); Maxwell *et al.,* (2005); Iversen (2005); Cheng-qui and Parker (2006); and Sadock *et al.,* (2009). Furthermore, the value of adjusted squared correlation indicates that 1.8% of variance in sensation seeking is explained by the helper personality type. This finding is consistent with the results of research by Rezaeian and Naeiji (2009), Javani (2006) and Muñoz and Navas (2005). According to other findings, the value of adjusted squared correlation indicates that -0.9% of variance in sensation seeking can be explained by the performer personality type. This finding is consistent with the results by Sumer *et al.,* (2005), Clarke and Robertson (2005), Hashemian *et al.,* (2010). In fact, 3.1% of variance in sensation seeking can be explained by artist personality type.

These results are inconsistent with the findings by Sumer *et al.,* (2005), Clarke and Robertson (2005), Hashemian *et al.,* (2010) and other studies in this regard. According to the explanation of this finding, these people become tired of monotonous work and are spend thrift if possible. The value of squared correlation for results indicate that 0.20% of variance in sensation seeking can be explained by observer personality type, and this result is inconsistent with the research by Cheng-qui and Parker (2006), and Sadock *et al.,* (2009). The adjusted squared correlation indicates that 1.6% of variance in sensation seeking can be explained by prudent personality type, and this result is consistent with the research by Cheng-qui and Parker (2006), and Sadock *et al.,* (2009). The explanation of this finding indicates that these people have suspicion about everything. According to the other hypotheses, the squared correlation of results indicates that 25.2% of variance in sensation seeking is explained by controller personality type. Furthermore, the value of adjusted squared correlation indicates that 1.1% of variance in sensation seeking is explained by controller personality type. These results are inconsistent with the findings by Cheng-qui and Parker (2006) and Sadock *et al.,* (2009). Ultimately, the value of adjusted squared correction indicates that 1.4% of variance in sensation seeking can be explained by peacemaker personality type. These results are consistent with the findings by Sumer *et al.,* (2005), Clarke and Robertson (2005), Hashemian *et al.,* (2010).

REFERENCES
Ali Samad (2000). Journal of management- Creativity and innovation management in the organization. Tehran.
Atkinson S (1998). Cognitive styles in the context of design and technology project work. *Educational Psychology: An International Journal of Experimental Educational Psychology* **18**(2) 183-194.
Berk Laura E (2001). *Developmental Psychology,* translated by Seyed Mohammadi Yahya (Arasbaran Publication) Tehran.

Research Article

Brace Nicola; Kemp Richard and Snelgar Rosemary (2003). *A Guide to Data Analysis Using SPSS,* translated by Aliabadi Khadijeh and Samadi Ali (Douran publication) Tehran.

Bull KS (1999). *Aptitude Treatment Interaction & Cognitive Style*. Available: http://home .okstate.edu /homepages.nsf/toc/EPSY5463C12.

Chartrand J, Emery S, Hall R, Ishikawa H and Maketa J (2011). *Now You're Thinking! Upper Saddle River* (NJ: FT Press).

Cohen G (1977). *The Psychology of Cognition* (Academic Press) New York.

Debello TC (1990). Comparison of eleven major learning styles models: variables appropriate population, validity of instrumentation and the research behind them. *Journal or Reading, Writing and Learning Disabilities* **6** 203-222.

Dimond SJ, Farrington L and Johnson P (1976). Differing emotional response from right and left hemisphere.

Dunn R and Dunn K (1993). *Teaching Secondary Student through their Individual Learning Styles: Practical Approaches for Grades 7-12* (Boston: Allyn& Bacon).

Fakouri Ghaderi and Ghodratollah (1994). Investigating the relationship between the sensation seeking in female university students and their husbands, Master's thesis on general psychology. Islamic Azad University of Roudehen.

Garousi-Farshi and Mir-Taghi (2008). *New Approach in Personality Evaluation* (Tabriz: Danial publication).

Ghasemzadeh Habibollah (2006). *Cognitive Neuropsychology* (Arjmand publication) Tehran.

Grigorenko EL and Sternberg RJ (1995). Thinking styles. In: *International Handbook of Personality and Intelligence,* edited by Saklofske D and Zeidner (New York: Plenum) 205-229.

Grigorenko EL and Sternberg RJ (1997). Styles of thinking, abilities and academic performance. *Exceptional Children* **63**(3) 293-315.

Haeri Rohani and Seyed-Ali (2001). *Neurophysiology* (Tehran: SAMT).

Hainer EV, Fagan B, Bratt T, Baker L and Arnold N (1990). Integrating Learning styles and skills in the ESL classroom: An approach to lesson planning, CBE Program information Guide Series 2.

Heahey M and Jenkins A (2000). Kolb`s Experimental Learning Theory and Its Application in Geography in Higher Education. *Journal of Geography* **99** 185-195.

Hosseinian Simin, Azimipour Parisa, Karami Abolfazl, Yazdi Monavvareh and Keshavarz Ghasem (2012). Investigating the Psychometric characteristics of nine personality types (Enneagram). *Quarterly Journal of Job and Organizational Consulting* **4**(12) 125-144.

Holmes Robyn M (2011). Adult Attitudes and Beliefs Regarding Play in Lanai. *American Journal of Play* **3** 356–84.

Javani Masoumeh (2007). The relationship between dimensions of personality and sensation seeking among the male and female students, Master's thesis on General Psychology, Supervisor professor: Dr. Mina Mojtabaei, Advisor professor: Dr. Siamak Naghshbandi. Islamic Azad University of Roudehen.

Kadivar Parvin, Javadi Mohammad-Jafar and Sajedian Fatemeh (2010). The relationship between the thinking style and self-regulation with Achievement Motivation. *Psychological Research* **2**(6) 30-46.

Kalat James (2004). *Physiologic Psychology,* translated by Biabangard Esmaeil *et al.,* (Shahed University Press) Tehran.

Khodapanahi Karim (1995). *Motivation and Emotion* (Tehran: SAMT).

Lombardo M and Eichinger R (2009). *FYI For Your Improvement: A Guide for Development and Coaching* (Minneapolis, Mn: Lominger International).

Mahvi-Shirazi Majid (2008). Investigating the validity, reliability and normalization of sensation seeking in Zuckerman's scale with the culture-based changes. *Scientific-Research Monthly Journal of Shahed University* **15**(28) 35-49.

Madanipour Nadia (2001). Investigating the relationship between the motivation, creativity and sensation seeking with academic achievement in art students, Master's thesis on Educational Psychology, Islamic Azad University, Central Tehran Branch.

Research Article

Merrifield J (1996). Examining the language strategies used by French adult learners, M Sc degree in Teaching English for Specific Purposes. Language Studies Unit, Aston University.

Montgomery SM and Groat LN (1998). *Student Learning Styles and their Implications for Teaching,* Available: http//:www.crlt.umich.edu/occ10.htm.

Perci W (2000). *Understanding Student Difficulties in Reasoning.* Available: http://academic.pg.md.us./MCCCTR/deffpt2.htm.

Pham NP (2000). *Learning Styles.* Available: http://payson.tulan.edu/ppham/Learning/lstyles.html.

Riding R and Chema I (1997). Cognitive styles- An overview and integration. *Educational Psychology: An International Journal of Experimental Educational Psychology* **11**(3-4) 193-215.

Rio John Marshall (2001). *Motivation and Emotion,* fourth edition, translated by Yahya Seyed Mohammadi (Tehran: Virayesh publication).

Sarhandi Tahereh (1992). Comparison the sensation between girls and boys, Master's thesis on general psychology. Alzahra University.

Schultz Devon and Schultz Sydney (2001). *Theories of Personality*, translated by Yahya Seyed-Mohammadi (Tehran: Virayesh publications).

Seif Ali-Akbar (2010). *Modern Educational Psychology: Learning and Education Psychology* (Tehran: Douran Publication).

Seif Ali-Akbar (2004). *Educational Psychology* (Tehran: Agah Publication).

Sepehr Sepideh (2001). Investigating the relationship between the creativity and sensation seeking among the students at Islamic Azad University, Master's Thesis on Clinical Psychology, Supervisor professor: Dr. Hassan Ahadi. Advisor professor: Dr. Seyfollah Bahari, Islamic Azad University of Roudehen.

Simonton Dean Keith (1998). *Creativity: Cognitive, Personal and Social and Developmental Aspects,* translated by Hossein Shokrkon. *Psychological and Educational Journal,* Shahid Chamran University **3**(1 and 2) (Date of publication in original language: 2000).

Sternberg RJ (1988). Mental self government: A theory of intellectual styles and their development. *Human Development* **31** 197-224.

Sternberg RJ (1990). *Thinking Styles: Keys to Understanding Students' Performance*. Phi Delta Kappan **71**(5) 366-371.

Sternberg RJ (1994a). Thinking styles: Theory and assessment at the interface between intelligence and personality. In: *Intelligence and Personality,* Sternberg RJ and Ruzgis (New York: Cambridge University Press).

Sternberg RJ (1994b). Allowing for thinking styles. *Educational Leadership* **52**(3).

Sternberg RJ (1997). *Thinking Styles* (New York: Cambridge University Press).

Sternberg RJ and Grigorneko EL (1997). Are cognitive still in styles? *American Psychologist* **52**(7) 700-712.

Sternberg RJ, O Hara LA and Lubart TI (1997). Creativity as investment. *California Management Review* **40** 8-21.

Wayen W (1996). *Themes & Variations*, 4rd edition (Monterert, C.A: Brook /Cole).

Yunfeng H (2000). *The Nature of Thinking Styles*. Available: http//www.heynfeng.org/English/ thinking/ts-significance.htm.

Zhang Li-Fang and Robert J Sternberg (2006). *The Nature of Intellectual Styles*.

Zhang Li-Fang and Robert J Sternberg (2009). *Perspectives on the Nature of Intellectual Styles*.

Zhang Li-Fang, Robert J Sternberg and Stephen Rayner (2012). *Handbook of Intellectual Styles: Preferences in Cognition, Learning, and Thinking*.