

Evaluation the Relationship between Personality Types and Learning Skills of the Students

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Abstract

The aim of this research is to investigate the relationship between personality types and learning skill of the student. The statistic community of this research is high school students of district 17 of Tehran city between 315 person (consist of 150 girls and 165 boys) who were selected by multistage cluster sampling method) in the year 2014-2015. Predictive variable was individuals characteristics and criteria variable of students learning styles. For collecting of the data, we used descriptive co relational research method. For collecting information two tests were used: Neo personality inventory (Costa & McCrae, 1992), (big five factors) and kolb learning inventory (Kolb, D., 1985). For data analysis .logistic regression and t test for indigent dent groups were used. The results showed that extravert personality characteristic has negative correlation with convergent learning style. Also adaptive personality characteristic has a significant and negative correlation with divergent learning style. Conscientious personality characteristic has a significant and positive relationship with grade variable

Key words: *extraversion . neuroticism . openness to experience . adaptive . conscientious, learning styles.*

Introduction

Benefit from the principles of psychology to enhance the quality of teaching is a scientific approach, because correct and high quality education, regardless of individual differences and understands the conditions and characteristics of the students and teachers will not be possible. The concepts of "personality" and "learning" are widely used in psychology and the study of relationship between them can be achieved more understanding of individual differences (Mir Kamali 1999). An effective education system in regard to individual differences of students should provide the necessary conditions for the development of their talents (Ebadi 2005). Individual differences between humans have been considered by psychologists for long times, so that this matter was begun by studying physical body shape (measurement of height, weight, etc.) and progressed when personality traits were attributed to appearance (body shape). Then senses, the senses to perception, the perception to the understanding, the understanding to the components and the process of cognition (attention, perception, processing, memory, etc.) were studied and finally, learning styles and preferences were taken into account (Ali Abadi 2003). One of the other issues that must be considered in the context of individual differences is learning styles for each of the students. The findings of the research scientists in the field of education and learning psychology have opened new horizons for human. These findings have resulted to be considered the teaching and learning rather than as a random activity, but as a regular scientific process. Recognition of the learning styles of students not only helps in teaching and learning to them, but can lead each person toward an appropriate field of education and employment (Ebadi, 2005). On the other hand, there is a long and intense debate about the relationship between person engaged in learning process (eg top students), learning strategies and personality traits, and has intensified especially after the publication of two controversial studies on learning strategies and personality (Costa & McCrae 1992). The extent of adoption of the five main factors of five factor personality theory, which claims five main dimensions of personality (neuroticism, extraversion, openness to experience, agreement, conscientiousness) are necessary and sufficient to judge the compatibility and stability of behavioral, emotional and cognitive in non-clinical samples, has mentioned that other basic and person-based structures such as learning strategies may simply reflect the significant individual traits in five factor model (Chamorro & Furnham, 2008). Interest in learning strategies (learning styles) is result of change in orientation of (behaviorism) to (cognitive) theories respectively. Cognitive theories of learning are seek to explain the complex cognitive activities such as comprehension, recalling and learning strategies. Recent research has demonstrated the importance of learning strategies to facilitate the learning process, the retention and recall. The results of this

study suggest that the cognitive strategies play the most powerful influence on student learning (Fathi Ashtiani and Hosni 2000). Are the individual differences in preference of learning strategies and the processing depth related to the personality? Many researchers have studied the relationship between personality traits and learning styles, including Eysenck (1987, quoting Zhang 2001) indicated that there is relationship between personality traits and learning styles. Drummond & Stoddard (1992 quoting Jackson and Jones 1996) reported that learning styles and cognitive characteristics are related together. Messick (1996) stated that learning style is a structure that can be served as a bridge between cognition and personality in education. Jackson & Lawty-jone (1996) on the relationship between personality characteristics and learning styles concluded that each of the elements of learning styles are associated at least one of the personality traits. Furnham and Jackson (1999) found the correlation between personality traits and learning styles, and have clearly stated that learning styles are sub set of personality. Their research concluded that there is a relationship between learning styles and personality traits, and stated that Holland personality triates will explain their career preferences, and Kolb learning styles can predict the individual preferences and academic career. Chamorro & Furnham (2008) concluded the only personality triate which has significant relation to learning strategies, is openness to experience, that has positive relation to strategy and deep learning motivation and also negative relation to the superficial learning motivation and strategy. Komarajo et al (2011) have done a study titled "Big Five personality triate, learning styles and academic achievement of students". Two of the five major personality traits (conscientious and agreement) were positively associated with all four learning styles. The neuroticism trait was negatively correlated with all four learning styles. Mansouri (2000) and Mohammad Zadeh Admalaei (2005) were examined in their study, people with different learning styles in terms of personality and academic achievement and found the significant relations between the learning style, personality triates and academic performance, respectively. In contrast, the researchers such as Highhouse et al. (1987) didn't find significant results between above mentioned variables (quoted Ebadi, 2005). It is expected that there is relation relationship between personality characteristics and learning styles. The study of these researches indicated most researches about the relation between personality characteristics and learning styles have done in university students, so it is necessary to be done among students. Also most studies have been done in areas other than the Big Five personality traits and Kolb learning styles. In addition, very little research has been done on the subject in the country, and these few studies have given the conflicting results. This study can improve our vision so that we can help student in learning process and academic guidance. The main objective of the study was to determine the relationship between personality types and learning styles of high school students in district 17 of Tehran.

Secondary purposes

- Determination the multiple relationships between personality types and convergent learning style
- Determination the multiple relationships between personality types and assimilator learning styles
- Determination the multiple relationships between personality types and coordinator learning styles
- Determination the multiple relationships between personality types and divergent learning styles
- Determination the relationships between personality types and gender
- Determination the relationships between learning style and gender

Method

This survey is fundamental research and it has done in descriptive method. According to the study, predictive variable is personality types and criteria variable is individual learning styles, so to collecting data, the descriptive-correlation method is used. The study population consisted of male and female students in the first, second and third grades of theoretical high school (fields of humanities, science and mathematics - physics) who had been studying in the high schools of district 17 of Tehran in 2014-2015. Among them, the number of 315 people (including 150 girls and 165 boys) were selected using multi-stage cluster sampling. In the first stage a list of all schools in the district 17 of Tehran were prepared and four schools (two high schools and two schools for boys) were selected randomly. Then three classes of each school were determined randomly. Research tools: tools used in this study include Neo personality inventory and Kolb learning styles test. NEO Personality inventory: to measure five personality characteristics, NEO-FFI questionnaire was used. This is a short questionnaire of 240-items with 60 questions to evaluate five personality traits (neuroticism, extraversion, openness to experience, agreement, conscientious) which was built by Costa & McCrae (1992) and scored based on five-point Likert scale from strongly disagree to strongly agree. In this study, the cronbach Alpha was computed 2 times through a questionnaire on 60 students (30 boys and 30

girls) with one-week intervals and was achieved 0.74 for a total personality questions. Kolb learning styles inventory: to determine the students' learning styles, Kolb learning styles questionnaire (1985) was used. This questionnaire determined the individual learning styles. This inventory consists of four sections and each section measures a kind of ability.it has 12 questions and each question has four statements which a subject must answer to it in 15 minutes. After reading a question, the subject must rank a statement with more agreement to his learning style as 4 score and other four parts of each question must determine with numbers 1-4 respectively. Four statements of each question can measure concepts such as concrete experience, reflective observation, abstract conceptualization and active experimentation. In this study, the Croanbach Alpha was computed 2 times through a questionnaire on 60 students (30 boys and 30 girls) with one-week intervals and was achieved 0.74 for total questions of kolb learning styles inventory. Data analysis methods: the findings were analyzed by using SPSS 18 software. In inferential level, logistic regression and independent t test were used to examine the hypotheses

Results

findings of Table 1 shows the mean of personality types of neuroticism, openness to experience , agreement and conscientiousness is higher among boys than girls, but girls have higher mean only in extraversion personality trait than boys. In the study of learning style variable, descriptive findings show that convergent learning styles with 50.9 per cent has the highest rate among the students. While the lowest frequency, with 13.3 percent is the divergent learning styles. Also, 21 percent of students have assimilator learning styles, as well as 14.8 percent of adaptive learning style. According to Table 2, %59.9 of the total sample of research is convergent learning style. 21 percent of students' assimilator learning styles and14.8 percent have adaptive learning styles and finally 13.3 percent of them are divergent learning styles. The overall study of boys and girls subjects showed the highest frequency is convergent learning styles in both genders, and divergent learning styles is the lowest frequencies.

Table 1 : Mean and standard deviation of variables

conscientiousness	agreement	openness to experience	extraversion	neuroticism	Personality triat gender
15/78	17/84	18/79	19/4	24/36	M
7/3034	6/1612	5/6143	5/2199	7/6301	SD
16/56	19/1	20/40	18/89	25/6	M
6/8220	5/7062	5/1144	4/9164	7/1821	SD
16/19	18/50	19/63	19/13	25	M
7/0549	5/9517	5/4101	5/0615	7/4129	SD

Table 2 : frequency distribution of learning styles due to gender

Sum	convergent	adaptive	Assimilator	convergent	Learning style gender
150	22	23	27	78	girl
100	14/7	15/3	18	52	percent
165	20	24	39	82	boy
100	12	14/3	24	49/7	percent
100	13/3	14/8	21	50/9	Total

Table 3 shows the results of logistic regression to examine the relationship between personality types and convergent learning styles of students. Based on the findings, among Big Five personality of this research, only extraversion personality trait is a good factor for predicting the criterion variable, that means the convergent learning style and other four personality traits have no significant role in predicting the criterion variable. Therefore, only extraversion personality trait has significant and negative relationship with

convergent learning style, in the sense that an increase of extraversion will reduce the students' tendency to convergent learning style.

Table 3 : significance level of extraversion in convergent learning style

Beta factor	P	Df	Wald	S.E	β	variables	
0/938	0/006	1	7/609	0/023	-0/064	extraversion	First phase
3/511	0/006	1	7/531	0/458	1/256	Constant factor	

The results of logistic regression to examine the relationship between personality types and divergent learning styles in Table 4, which shows among the predictor variables of this research (five personality traits), only agreement variable is a good factor to predict the criterion variable that means divergent learning styles and other four personality traits have no significant role in predicting the criterion variable. These findings suggest that the agreement personality trait has negative relationship with the criterion variable. This means that the less score of agreement triat in students will increase their tendency to have divergent learning styles.

Table 4: significantly level of agreement

Beta factor	P	Df	Wald	S.E	β	variables	
0/940	0/035	1	4/450	0/030	-0/062	agreement	First phase
0/464	0/146	1	2/112	0/528	-0/768	Constatnt factor	

To investigate the relationship between personality type and gender, independent t-test was used. Results of table 5 show only oppennes personality triat has significant difference between two genger but in favor of boys, so that mean of oppennes is 20/40 in boys and 18/79 in girls . Significant level t is meaningful between boys and girls and equal to 0/008. But mean of other personality characteristics has not significantly different between both genders.

Table 5 : t-test to compare personality triates in both gender

Mean difference	test t		test level			variable	
	sig t	Df	statistic t	P	F		
-1/61273	0/008	313	-2/668	-2/668	2/168	With hypothesis the equality of variance	Openness to experience
-1/61273	0/008	302/301	-2/656	-2/656		Without hypothesis the equality of variance	

In the relationship between learning styles and gender, since this question is investigated the mean of two independent community of girls and boys, so the "t test is used for independent samples". Table 6 shows the results of this test. The independent t-test showed that the difference in the learning styles of boys and girls is statistically significant. Therefore, one can say with 95% confidence that abstract conceptualization in boys is higher than girls. Active experimentation learning styles of girls is more than boys. In other cases, there was no significant relationship.

Table 6 : the relationship between learning styles and gender

T	Freedom degree	Mean difference	mean	groups ¹	styles
2/6	127	5/3	32 37	girl boy	abstract conceptualization
0/39	127	0/44	29 28	girl boy	reflective observation
0/75	127	0/80	30 31	girl boy	concrete experience
3/8	127	3/4	30 27	girl boy	active experimentation

Conclusion

Descriptive findings indicate that mean of personality types of neuroticism, openness to experience, agreement and conscientiousness in boys are higher than girls, but girls has higher mean of extraversion personality than boys. With learning styles variable, descriptive findings indicate that convergent learning style has the most frequent among students. The lowest frequency is related to the divergent learning styles. These findings are in agreement with the results of the Valizadeh (2005) and Naseri (2008) and Khorshid (2011), but in contrary with the results of Azizi (2001) and Ghasemi (2009). Divergent learning style is in line with the strong imagination and high creativity. Due to above results, low percent of people in society enjoy these abilities in compared to other styles. Given the importance of creativity and innovation in teaching and learning, it is essential that the education authorities in the design of educational content, more and more attention to the creativity of students. The results of analytical research indicate multiple relationships between personality types and convergent learning styles using logistic regression. The results show that extraversion personality trait has significant negative relationship with convergent learning style. So it can be said people with lower extraversion will be more willing to use the convergent learning style, and whatever their extroversion increases their tendency to convergent learning style will decrease. People with convergent learning styles are non-emotional and prefer to work with objects not humans. They have limited interests and prefer to gain expertise in the physical sciences (Seif 2006). This property is exactly in contrast with the characteristics that are considered for the extroverted people. The extroverted people, unlike converged people have traits such as socialization, socialization, domination, sensation seeking, being active, being talkative, energetic and assertive (Costa & McCrae, 1992). So, it seems clear that increasing extraversion will decrease convergent learning style. Next, the study of multiple relationships between personality types and divergent learning styles showed that among the five major personality traits, only agreement factor is a suitable factor for predicting the criterion variable that means the divergent learning style. These findings suggest that agreement personality traits is negative criterion variable, so that we can say that the lower agreement will lead to use more divergent learning styles. Divergent people see objective situations from different perspectives. Their approach is to observe the situation rather than act. Some of personality traits of these people are: unconventional, informal and fulfilling his own desire personality, influence on others, assertiveness and self-sufficiency, low interest to social relations and high sensitivity to social issues and... (Seif 2006). In contrast, agreement personality traits should be determined with features such as confidence, cooperation, sympathy and agreed with others. People with high score in this factor, they have trust in others and high sense of cooperation (Costa & McCrae, 1992). It is concluded that there are differences among people with divergent and agreement traits so that some of their traits are incompatible with each other. Conscientiousness personality trait was not associated with any other learning styles. Also, none of the personality types were not correlated to the learning styles to assimilator learning style and adaptive learning style. In general, it is concluded there is not significant relationship between personality types and learning styles or if exists, it is so weak to participate one variable from other one. The results are in line with researches including Lat vikken (1984), Mary and Mavand (1985), Hygus et al., (1987), quoted Ebadi (2005),

Furnham and Jackson (1999), Jackson (2002), Premuzic et al. (2008), Komarajo et al. (2011) Talebi et al (2000) and Khorshid (2011), but in contrary with the results of Jackson and Jones (1996), Natalyanys (2010) , Ebadi (2005) and Lotfi (2008). The difference between male and female students' learning styles, the study findings suggest that the mean differences between the learning styles of boys and girls is statistically significant. Therefore, one can say with 95% confidence that the abstract conceptualization in boys is higher than girls. Active experimentation learning style of girls is more than boys. In other cases, there was no significant relationship. The findings are in line with the researches of Fritz (1992), Mateos (1994), Simpson (1995), Farhadi(1994), Yarmohammadi Vasel (2000) and showed a significant relationship between learning styles and gender of the subjects (the quotes Ebadi, 2005). This is not in line with findings of Schmeck et al (1977), Miller (1987), Kozminsky & Cofman (1992, quoted Ebadi, 2005), Vermunt (1994) , Klamp & Ascogsberg (2003) and khorshid (2011) which concluded that there is no significant differences between learning styles of both gender. The general results of this study show that there is not a definite stable relationship between personality types and learning styles of students. But some researches in the country and abroad indicate some results in contrary with this study which some reasons such as using different tools, different age of subjects, cultural differences and etc are involved. According to this study, it seems that it is necessary to more attention to students' creativity and divergent thinking. It is also necessary that in matters such as the choice of field of study, in addition to the use of various questionnaires, a number of factors such as personal interests, cultural backgrounds, family issues, career and etc should be considered. Given the limitations of this study, it seems that doing research in the future and considering factors such as cultural diversity, age on learning styles, the relationship between learning styles of parents and teachers with students and comparison the university students' learning styles with the school students, can also help to resolve some of the uncertainties, and also will increase our vision about student learning and academic guidance.

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