



Identifying Intelligence Effective Factors in Gifted Education Students in Tehran

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ABSTRACT: This study aimed to identify intelligence effective factors in gifted students in Tehran. To perform this study researcher made questionnaire of 220 questions in four forms, each consisting of 55 questions drawn from factor theory of intelligence with phased random sampling method over 250 students, their parents and teachers was implemented by field case method. To analyze the data independent T- tests, ANOVA, Kolmogorov - Smirnov test and Friedman test (for types of intelligences ranking in the sample) is used. The obtained results show that the average intelligence of the gifted students studying in the city of Tehran is a significant distance from the normal curve. The difference between the mean scores obtained by ranking the intelligence of gifted students studying in the city of Tehran is significant. The most mean values of sample group's types intelligence is obtained respectively consisted of a moral intelligence, emotional intelligence, spiritual intelligence, mathematical intelligence, interpersonal intelligence, intrapersonal intelligence, physical intelligence, spatial intelligence, nature oriented intelligence, verbal intelligence and musical intelligence. Moreover, according to the data it can be concluded that gifted girls, are significantly higher than boys in the intelligences types of verbal, spatial, musical, physical, intrapersonal, interpersonal, nature-oriented, spiritual, moral and emotional intelligence. While there is no difference in math intelligence between boys and girls studying at gifted school in Tehran. ANOVA results indicate that there are significant differences in the views of all groups of pupils, teachers and parents of students in the assessment of intelligence, interpersonal intelligence, and nature oriented, spiritual, moral and emotional.

Key words: Intelligence, Multiple Intelligences, Giftedness.

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INTRODUCTION

Intelligence is one of the most precious blessings of God that over the years, there is still little agreement on how to define it, because intelligence is widely regarded as an abstract concept. Experts and scholars have been different approaches to the Intelligence, and have offered different definitions of intelligence, some of them are discussed below. Intelligence is an abstract quality that is identified through observation, reflection, reasoning, and other qualities as a sign of intelligence. From the other point of view intelligence is the most obvious mental activity which of human allows adaptation to his environment. Given that the definition of intelligence is not the same and different scholars have defined it in different ways so we cannot define intelligence that agreed by all psychologists are affiliated with various approaches however, most researchers agree that there are elements of the intelligence (Gage and Berliner, 1992). The elements are placed in three categories: Ability to engage in the abstract, Ability to solve problems and ability to learn (Gage and Berliner, 1992). In this regard, some scholars believe that the single intelligence and some believe multiple intelligences. Another theories, is Andersen's intelligence theory and cognitive development based on the assumption that individual

differences in intelligence and intelligence changes during growth can be explained by the different mechanisms. Unlike Anderson, Sternberg's theory of the triad, in addition to basic information processing mechanisms pays attention to the operating context and experience (Sternberg and Williams, 1996). Sternberg's theory is a theory of three parts or three retailers:

- Sub-components approach that focuses on thinking processes.
- Retail empirical theory that deals with the effects on intelligence experience.
- Retail contextual theory which deals with the effects of environment and culture.

According to Sternberg, intelligence is composed of a set of thinking skills and learning to solve problems that are used in academic and daily life. According to this theory, intelligence has three faces: Analytical, creative, morality and scientific (Sternberg and Reis 2004). Howard Gardner has put theory of multiple intelligences, is defined intelligence as: "The ability to develop a solution or a solution that is applicable in a particular culture or society." There are multiple intelligences that enable people to play different roles, such as medicine, agriculture, magicians, and dancers.

Gardner provides a method that can be used by its represent human ability to put them in eight different categories: verbal-linguistic Intelligence, logical - mathematical intelligence, visual-spatial intelligence, bodily - physical intelligence, musical- rhythmic Intelligence, interpersonal intelligence, intrapersonal intelligence, naturalistic intelligence. Recently he has referred to the possibility of two additional Intelligences: existential Intelligence and spiritual intelligence (Gardner, 1999; Gardner, 2003). The basis of his division is that when the brain injured person loses some of its ability while his other abilities are active. Gardner argued that our understanding of the intelligence comes from the study of a person's daily environment not from the size of IQ in the packet rooms (Sepehrian, 2007). Linguistic- verbal intelligence: the right to do something, either orally or in writing, the ability to apply intelligence professionally are included, the ability to do semantic and pragmatic aspects of language Gardner (1983).

Logical - mathematical intelligence: The ability to use the correct logic and correct numbers. It requires intelligence, pattern recognition and logical relations, propositions and theorems, functions and other matters related to the abstract (Gardner, 1993). Spatial intelligence: The ability to understand the world as a place - visual and a change in perception. The intelligence required identifying the color, line, shape, form, space, and there is a relation between these factors and the ability is included to visualize spatial-visual thinking and graphic representations (Gardner, 1999).

Bodily - physical Intelligence: Proficient in the use of the whole body to express ideas and feelings. The intelligence of specific is included physical skills such as balance, coordination, agility, strength, flexibility, speed and touch functionality (Gardner, 1999). Musical Intelligence: The diagnostic capabilities, and run a musical form, it requires intelligence to identify rhythm, melody and timbre or color, height or a great piece of music (Gardner, 1999). Intrapersonal Intelligence: Understand and distinguish the moods, intentions, motivations and feelings of others. It takes intelligence to recognize facial expressions, sounds, moving and gestures, the ability to distinguish between different types of individual signs and symptoms with the correct answer to a practical approach (Gardner, 2003).

Interpersonal Intelligence: The knowledge and ability to function properly on its own. This requires a clear picture of the capabilities and limitations of IQ personal knowledge of internal states, intentions, motivations, moods, desires, power, self-discipline, self-perception and self-esteem (Gardner, 2003). Naturalistic intelligence: The skills to identify and

classify species - plants and animals - and personal environment. Moral Intelligence: moral intelligence is as follows: The Sympathy: identify the feelings and interests of people. Consciousness: knowing correct ways and acting in the same way. Self-control: control and regulate thoughts and actions so that to resist the pressure inside and outside and act in the same way we feel is right. Respect: Valuing for others with considerate and polite behavior. Kindness: pay attention to needs and feelings of others. Patience: respect the dignity and rights of all people, even those whose beliefs and behavior are opposed to us. Fairness: Select rational and fair way to operate (Mokhtari pour, 2009). Gardner's multiple intelligences include three major areas: a) an analysis areas b) introspective areas c) interaction areas. Analytical intelligence: Includes analysis of mathematical intelligence, musical and naturalistic. These intelligences are learning to increase one's analytical knowledge.

In this context, Sternberg - Ace Sali say a person must have five criteria to become known for being gifted: 1 - Superior 2 - rarity 3 - productivity -4 provability -5 a valuable. The Ellen Weiner (1996) an expert on the creativity and acumen, more recently has determined, three criteria for children who are gifted: Ahead of others- Being different- Seeking perfection (Sternberg and Reis, 2006).

Chan (2003) studied the relationship between self-awareness of multiple intelligences and related activities over 592 gifted students in Hong Kong. In addition, showed that they have a deep understanding of interpersonal, intrapersonal and verbal - linguistic intelligence and underperforming the bodily - physical and naturalistic intelligence.

Chan (2001) in order to determine the characteristics of intelligence, according to the multiple intelligences was conducted study on 192 Chinese high school students. In this study it was found that participants found that almost seven intelligences are separate abilities.

In research (Ghanbari et al., 1999) did in order to compare the social skills and self-esteem the normal and gifted students in Shirvan junior schools, it was found that there is no significant difference among the normal and the gifted students between self-esteem and social skills.

Khalil Arjmandi et al. (2004) did study to investigate the emotional intelligence, social skills (of peers) and academic achievement in gifted and normal students the research results show that gifted students' variables of the social skills and academic achievement are superior to normal students.

Kehtari,2006 studied mental health and social adjustment in gifted female students in general,

private and talented schools in comparative research. The results showed that there is no significant difference among gifted students in mental health and social adjustment.

Karimi, 2008 compared alexithymia habits and emotional intelligence of gifted high school students the results showed that alexithymia gifted students is less than students in normal schools.

In another study, the Amraee, 2012 indicated students of higher intelligence, are more efficient, more regulated and will be better academic performance.

Aksu's results (2003) showed that students' multiple intelligences according to their grade show differences.

Research on Gardner's multiple intelligences generally has been approved the positive relationship between them. Including

Research hypothesis:

What is the characteristic of types of intelligence in the present study?

What are the types of intelligence level between male and female gifted students in Tehran?

What is the difference of the intelligence among students?

What is the difference between male and female students' types of intelligences?

Is there difference between the opinions of students, teachers and parents in gifted intelligence assessment?

MATERIALS AND METHODS

The research method for purposes is practical, the data is quantitative and nature of it is field case.

Population of this research is all of the teachers, managers, students and their families who were in gifted schools of Tehran. And the simple random sample (250 students, 125 girls and 125 boys) has been selected. The data were collected from a questionnaire that involves 220 questions in four forms, according to factor theory of intelligence.

RESULTS

The aim of this study was to evaluate the students intelligence of Tehran based on Howard Gardner's theory. Therefore, all of the questions in this regard that have been raised one by one have described.

The data were analyzed using factor analysis using varimax rotation. As a result of this rotation, 13 factors with eigenvalues were greater than one.

The results of data analysis in exploratory factor analysis shows that factor 1 (linguistic - verbal intelligence), which includes 21 questions, factor 2, (logical - mathematical intelligence) that includes 22 questions, factor 3 (visual - spatial intelligence) which consists of 19 questions, factor 4 (musical intelligence), which includes 20 questions, factor 5 (physical - mobility intelligence,) which includes 21 questions, factor 6 (interpersonal Intelligence), which includes 13 questions, factor 7 (interpersonal Intelligence) which includes 9 items, factor 8 (intelligence, interpersonal) consisting of 23 questions, the factor 9 (nature oriented intelligence), which contains 18 items, factor 10 (spiritual intelligence), which includes 21 questions, Agent 11 (moral intelligence) which consists of 19 questions of 12 (Emotional intelligence), which consists of 13 questions and 13 (Emotional intelligence), which consists of 6 questions, are measured.

Table1. Descriptive Indicators and Measures of intelligence in KS

Types of Intelligence	mean	Standard deviation	Curvature	Kurtosis	K-S level	Sig
linguistic Intelligence	4.82	1.05	-0.22	-0.44	0.78	0.56
logical - mathematical intelligence	5.27	1.01	-0.63	0.12	1.20	0.11
visual-spatial intelligence	4.93	1.16	-0.31	-0.37	0.92	0.35
musical Intelligence	3.9	1.67	0.03	-0.98	0.97	0.30
mobility - physical intelligence	5.01	1.16	-0.98	1.46	1.11	0.13
interpersonal intelligence	5.16	1.08	-.024	-0.57	0.97	0.29
intrapersonal intelligence	5.21	1.19	-.084	0.46	1.19	0.11
nature oriented Spiritual Intelligence	4.92	1.19	-.036	-0.65	1.07	0.2
Moral Intelligence	5.4	1.12	-0.8	0.22	1.04	0.24
Emotional intelligence	5.49	1.6	-.082	0.58	1.15	0.14
	5.45	1.03	-.084	0.5	1.2	0.1

Table 2. Friedman test to determine significant differences in multiple intelligences

Indices	Chi-square	Significance level	DF
Friedman test	144.72	10	0.0001

Table 3. Average significant differences in terms of gender

Fields	in depended variable	Mean	Mean difference	t-level	Significance level
Verbal Intelligence	Girl	5.04	0.41	3.15	0.002
	Boy	4.63			
Mathematical Intelligence	Girl	5.38	0.23	1.81	0.07
	Boy	5.15			
Musical Intelligence.	Girl	5.27	0.62	4.50	0.0001
	Boy	4.64			
Spatial Intelligence	Girl	4.29	0.77	3.72	0.0001
	Boy	3.51			
Bodily Intelligence	Girl	5.17	0.26	1.89	0.05
	Boy	4.90			
Interpersonal Intelligence	Girl	5.44	0.59	4.45	0.0001
	Boy	4.85			
Intrapersonal Intelligence	Girl	5.38	0.36	2.43	0.01
	Boy	5.02			
Naturalistic Intelligence	Girl	5.15	0.47	3.14	0.002
	Boy	4.68			
Spiritual Intelligence	Girl	5.66	0.55	3.99	0.0001
	Boy	5.11			
Moral Intelligence	Girl	5.72	0.48	3.71	0.0001
	Boy	5.23			
Emotional Intelligence	Girl	5.65	0.43	3.4	0.001
	Boy	5.22			

Table 4. Variance analysis of intelligence types of segregated groups

Types of intelligence	Square	Degrees of freedom	Mean square	F ratio	Significance level
Verbal Intelligence	84.94	2	42.47	42.47	0.21
Mathematical intelligence	66.94	2	33.47	33.47	0.27
Spatial Intelligence	9.44	2	4.72	4.72	0.87
Musical intelligence.	237.98	2	118.99	118.99	0.18
Bodily Intelligence	39.09	2	19.54	19.54	0.54
Interpersonal intelligence	121.1	2	60.55	60.55	0.12
Intrapersonal intelligence	105.74	2	102.87	102.87	0.05
Nature oriented intelligence	273.9	2	136.96	136.96	0.02
Spiritual intelligence	550.58	2	257.29	257.29	0.0001
Moral Intelligence	288.06	2	144.03	144.03	0.006
Emotional intelligence	262.42	2	131.21	131.21	0.007

Table 5. Scheffe test for comparison of groups

Types of intelligence	Groups		Mean	Mean Differences	Significance level
Verbal Intelligence	Parents Mean-5.53	Teacher Student	4.99	0.54	0.04
Mathematical intelligence			5.02	0.50	0.03
Spatial Intelligence	Parents Mean-5.29	Teacher Student	4.69	0.59	0.01
Musical intelligence	Parents Mean-4.70	Teacher Student	4.70	0.60	0.02
Bodily Intelligence			5.79	-0.73	0.003
Interpersonal intelligence	Parents Mean-4.96	Teacher Student	5.44	-1.08	0.0001
Intrapersonal intelligence			5.73	-0.59	0.01
Nature oriented intelligence	Parents Mean-5.79	Teacher Student	5.56	-0.77	0.052
Spiritual intelligence	Parents Mean-5.4	Teacher Student	5.06	0.72	0.002
Moral Intelligence	Parents Mean-5.49	Teacher Student	5.36	0.42	0.03

The above table, has to offer descriptive parameters as well as, the test results of normal distribution (Kolmogorov - Smirnov) KS. By dividing the range of possible scores on each of the variables at five levels of very low intelligence and high IQ, it can be said the level intelligence in all obtained mean are high. But the values of the Kolmogorov - Smirnov (KS) was not significant in any of the various intelligence and despite the negative curvature observed in all types of repeated intelligence and high scores in the sample, these differences are not significant and the curve distribution of scores in all sorts of intelligence is normal. . So, we can say that the mean of the intelligence of the students enrolled in the gifted natural curve of Tehran is not a significant gap.

The figures contained in the table above, the difference between the mean scores obtained by ranking the intelligence of gifted students studying in the city of Tehran is significant. . The most mean values of the intelligent group obtained in the case is moral intelligence, emotional intelligence, spiritual intelligence, mathematical intelligence, interpersonal intelligence, intrapersonal intelligence, physical intelligence, spatial intelligence, naturalistic intelligence, verbal intelligence and musical intelligence.

The figures contained in the table girls significantly have shown better performance than boys in all kinds of intelligence except mathematics intelligence. It can be concluded that gifted girls are higher than boys, in the intelligences of verbal, spatial, musical, physical, intrapersonal, interpersonal, naturalistic, spiritual, moral and emotional intelligence significantly. While

there is no the difference between boys and girls in mathematical intelligence in gifted student in Tehran.

Variance analysis results indicate that the views of three groups of students, teachers and parents of students has a significant difference in the assessment of interpersonal intelligence, naturalistic, spiritual, moral or emotional intelligence.

The figures contained in the above table, show parents between intrapersonal, naturalistic and emotional intelligence significantly have higher evaluation of their children's intelligence than teachers and students. Teachers significantly have lower assessment of moral and spiritual intelligence.

DISCUSSION

This study aimed to identify intelligence effective factors in gifted students in Tehran. The results indicate intelligence composed of multiple components in fact, is contrary to the theory of single intelligence can note Sternberg's triad theory that according to this theory, intelligence has three faces analytical, creative and scientific ethics (Sternberg, 2004), and also confirm Gardner's multifaceted intelligences theory. And also the results show that the mean levels of all kinds of intelligence are high. The findings are consistent with the research of foreign scholars In this regard.

However, despite repeated high scores in the sample, one can say that the obtained mean in a variety of intelligence have no significant interval from the natural curve among students in Tehran.

In this regard, Chan (2001) showed that in each case their overall assessment of multiple intelligences

did not predict the traditional values of (intelligence). The findings according figures contained in Table 4 showed that the difference is significant between the obtained mean scores and ranking the intelligence of gifted students in Tehran. The most obtained mean values in types of intelligence in the group are moral intelligence, emotional intelligence, spiritual intelligence, mathematical intelligence, interpersonal intelligence, intrapersonal intelligence, physical intelligence, spatial intelligence, naturalistic intelligence, verbal intelligence and musical intelligence. This study is consistent with the part of a study by Chan in 2004 about the high individual, interpersonal and verbal language intelligence. But in Chan's study, other various intelligence levels are low, which is not consistent with this research. That it can be as a result of different culture among two countries. Khalil Arjmandi et al. 2004 showed gifted students in social skills and academic achievement variables are better than regular students, so high social intelligence are consistent with this research. Amraee, 2012 also concluded that if students have higher intelligence will be more regulated more efficient and have better academic performance. So we can say the result of this study is in line with high emotional intelligence, interpersonal intelligence in gifted students. In this study, are in line with this research about high emotional intelligence, interpersonal intelligence intrapersonal in gifted. Khalil Arjmandi et al. 2004 compared to emotional intelligence, social skills between male and female students did not see any difference in any of the variables so the two variables in this study are not consistent with each other in explaining long time interval between two researches can influence the results of these studies. Comments on teachers, parents and students about assessment of students' intelligence in gifted schools indicated that there is a significant difference among three groups of students, teachers and parents of students in the assessment of interpersonal, naturalistic, spiritual, moral or emotional intelligence.

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