Relationship between Different Types of Intelligence and Student Achievement

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Abstract: The purpose of this study is to investigate the relationship between different types of the intelligence and student achievement in University of Isfahan. In other words, this study seeks to investigate the relationship among emotional intelligence and spiritual intelligence with student achievement. The statistical population of this study includes all students at University of Isfahan who studied in this university in 2011-2012 years. A sample of 250 members was selected from this population by Multi-stage random cluster sampling method. Data-collection instruments were Trait Emotional Intelligence Questionnaire – Short Form (TEIque-SF) and The Spiritual Intelligence Self-Report Inventory (SISRI-24) questionnaires. In order to analyze the data, SPSS 15 and AMOS 18 were used. The results of this study indicate that it is possible to introduce a model that explaining student's achievement based on the emotional and spiritual intelligences.

Keywords: Emotional Intelligence, Spiritual Intelligence, Achievement, Students

Introduction

The extent of the student's achievement is considered as the successfulness criteria of scientific and academic activities in every academic system. Achievement is a multi-dimensional issue that refers to student's physical, social, cognitive, emotional, and spiritual growths. The construct of intelligence is one of the most important factors in determining the achievement that is measured by intelligence test (Dehshiri, 2008).

Many researchers and authors have concentrated on the effects of cognitive intelligence abilities on achievement for several decades. After some time, it was cleared that although intelligence quotient can predicts educational performance and somehow personal and professional achievement significantly, but there are several imprecise issues (Salovey and Mayer, 2000). Despite, some peoples had high intelligence quotient scores, but they hadn't good life and loss their potentiality of achievement because of incorrect thought, behavior, and transmission. Other levels of intelligence are the imprecise sections in this balance of achievement (Emmons, 2001).

Wiggles Worth (2004) introduced four different types of intelligences as physical, cognitive, emotional, and spiritual intelligences based on their growth order in the pyramidal form. His model is shown in the figure 1.
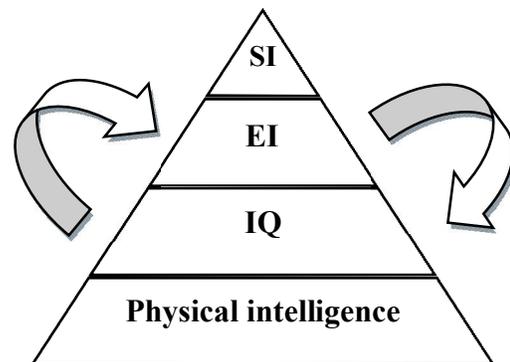

Fig 1: the communicational model of intelligences types

This model is based on the perspective that children first have control on their their body. In other words, the first focus pivos of human is physical intelligence and then cognitive and percpetual language skills are developed. Intelligence qoutient refers to the analysis power that is used in many educational activities (Wiggles Worth, 2004). According to some of educational psychologists, intelligence is a quality that leads to achievement and hereby is considered as an educational competency (Nazel, 2004). Based on the conducted researches, intelligence is related to the minimum standards and it is cleared that when individual is able to pass more

complex processes that approach achievement (King, 2006).

When individuals like to develop their relations with others, emotional intelligence will be bring up. Attending emotions and their proper application in human relations, perception of your and other's conditions, continence and domination on immediate demands, empathy with others, positive usage of emotions in thought and cognition refer to the subject of emotional intelligence (Kooker et al., 2007).

According to Vaughan (2003), emotional intelligence refers to the precise perception of one's emotions and also precise interpretation of other's emotional status. Hiein (2007) believed that emotional intelligence evaluates individual in terms of emotional issues so that he/she has awareness from his/her emotions and senses and know how to control and manage them. In addition, it should be noted about emotional intelligence that emotional intelligence abilities aren't genetic and can be learned (Emmons, 2001).

When individuals strive to discover the meaning of the problems, spiritual intelligence hang out and then they ask themselves is this all that there is? This is the question that exists from child period and individuals strive to find out its answer (Wiggles worth, 2004).

Spiritual intelligence goes beyond the physical and cognitive relations with surrounding environment and enters to intuitive and transcendent realm of individual's perspective to life. This perspective includes individual's entire phenomenon and experiences that is influenced by the overall perspective (Zohra and Marshall, 2000). Amram (2007) believed that spiritual intelligence includes the meaningful sense and having mission in the life, having sanctity sense in the life, transcendental understanding of the material, and believing in better world.

It is should be remember that spiritual intelligence is necessary for applying the other levels of intelligence in the effective manner, because intelligence quotient and separate spiritual intelligence aren't sufficient for explaining human being intelligence complexities or latitude of spirit and imagination competencies. Perfect perception of the human intelligence will be possible through describing spiritual intelligence (Zohra and Marshall, 2000).

With respect to the different levels of intelligence, it is perceived that these levels have especial interaction with each other. For example, one needs important and fundamental sections of spiritual intelligence to starts his/her spiritual growth successfully. Emotional constructs of self-awareness and empathy are the sturdiest bases for entering spiritual intelligence. Regardless of this, when

emotional growth starts, its positive feedback reinforces emotional intelligence abilities and then this leads to reinforcing the spiritual intelligence (Samadi, 2006).

There are different studies that examined the relationship between intelligence quotient and student's achievement and so it is should be noted that the significant relationships between them were approved. Therefore, this study seeks to study the relationship between high levels of intelligence construct (including emotional and spiritual intelligences) with achievement based on the model of Wiggles worth (2004). The purpose of this study is to investigate the relationship between different types of intelligence and student achievement in the University of Isfahan.

Methodology

This is a descriptive-correlation study. The statistical population of this study includes all of students who studied in the University of Isfahan in 2011-2012 years. Multi-stage random cluster sampling method was used for selecting the respondents. In order to select sample members, four faculties were selected randomly that including faculty of educational sciences and psychology, faculty of literature, faculty of engineering, and faculty of sciences. In the next stage, 250 students were selected from these faculties randomly that studied in the different levels. From these 250 respondents, 118 students were male and others were female.

The data of this study was analyzed in SPSS 15 and Amos 18. In order to analyze the data, descriptive and inferential statistics were used that include statistical measures such as average, standard deviation and Structural Equation Modeling (SEM).

Structural Equation Modeling (SEM) was used to investigate the relationship between emotional and spiritual intelligences with achievement. The SEM is a method that analyzes the relationships among variables based on the hypotheses about the relationships among latent constructs and the measured variables (MacCallam, 2000).

Data-collection instrument

1: Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-S): this questionnaire was developed by Petrides and Furnham in 2002. This includes four components as optimism, emotion perception, emotion regulation, and social competence. This consists of 30 questions in five-point Likert scale. They reported internal consistency of the questionnaire 86% based on a primary sample with 102 respondents. Also they examined this scale with Eisenberg personality profiles simultaneously in order to investigating the discriminant validity and also examined construct validity of the questionnaire

by confirmatory factor analysis (Petrides and Furnham, 2002).

Marnani and Nouri (2004) investigated the validity of the questionnaire in their study with 300 respondents (150 students from high school students and other 150 students from University of Isfahan). They reported Cronbach's coefficient 83%. Reliability of the questionnaire in the present study is 89%.

2: The Spiritual Intelligence Self-Report Inventory (SISRI-24): this scale was developed by King in 2007 based on the four components of spiritual intelligence. These include:

"Critical Existential Thinking (CET): The first component of spiritual intelligence is referred to as critical existential thinking, defined here as the capacity to critically contemplate the nature of existence, reality, the universe, space, time, death, and other existential or metaphysical issues.

Personal Meaning Production (PMP): The second factor in this model is personal meaning production, which is defined as the ability to derive personal meaning and purpose from all physical and mental experiences, including the capacity to create and master a life purpose.

Transcendental Awareness (TA): The third factor, transcendental awareness, is defined as the capacity to identify transcendent dimensions of the self (e.g., a transpersonal or transcendent self), of others, and of the physical world (e.g., non-materialism, holism) during the normal, waking state of consciousness, accompanied by the capacity to identify their relationship to one's self and to the physical.

Conscious State Expansion (CSE): The final factor of spiritual intelligence is referred to as conscious state expansion, defined as the ability to enter and exit higher/spiritual states of consciousness (e.g. pure consciousness, cosmic consciousness, unity, and oneness) at one's own discretion (as in deep contemplation, meditation, prayer, etc.). It is first critical to understand what is meant by the terms consciousness and state of consciousness."(King, 2007)

This scale has 24 questions that each of sub-measures has respectively 7, 5, 7, and 5 questions. The respondents indicated their answers on a five-point continuum. Therefore, the score of this scale could be from 0 to 96. High score in this scale refers to the high extent of individual's spiritual intelligence.

King (2007) compared this scale with other scales such as the Metapersonal Self-Construal Scale (MSC; DeCicco and Stroink, 2003), the Mysticism Scale-Research Form D (MSD; Hood, 2000), and the Age Universal Intrinsic-Extrinsic Religiosity Scale (AUIE; Gorsuch and Venable, 1999) in order to

examining its validity. They reported their correlation coefficients 67%, 63%, and 58%. Also they reported the reliability of the scale 95% based on the study that conducted on the 619 students in 2007. Also reliability of the sub-measures was reported 88% for Critical Existential Thinking, 87% for Personal Meaning Production, 89% for Transcendental Awareness, and 94% for Conscious State Expansion.

Validity of this scale was examined by Raghib et al. (2010) in Iran and its Cronbach's alpha was reported 87% in the study which was conducted among 250 students in the University of Isfahan. Also the correlation coefficient of this scale with the spiritual spirit scale of Ghobaribonab et al. (2008) was reported 77%.

In order to measure achievement with respect to different fields and educational levels, three scores were selected as measurement scales for student's achievement including foreign language and statistics and also another expertise lesson based on the student's field.

The findings

Descriptive statistics of the respondents about emotional intelligence, spiritual intelligence, and achievement were indicated in table 1.

Table 1: Descriptive statistics of the respondents about research variables

The results of correlation coefficient for investigating the relationships between emotional and spiritual intelligences with achievement were indicated in the table 2.

Table 2: The results of correlation coefficient for research variables

As indicated in the table 2, there are significant positive correlations among research variables (p<0.01). The maximum correlation coefficient was observed between perception of emotions and optimism (r= 0.83, p<0.01). Also the minimum correlation coefficient was observed between perception of emotions and critical existential thinking (r= 0.39, p<0.01).

The results of SEM for investigating the relationship between different types of intelligence and achievement were indicated in the table 2. The extent of correlation coefficient was reported between latent variables of study. Also good fitness indices were indicated in the table 3.

Fig 2: factor loading of the model
Table 3 Fitness indices

The results of SEM were indicated for the structure of three factors. The results of SEM confirmed the interrelationships between different types of intelligence and achievement. The extent of χ^2 was calculated 112.24 (p<0/00).

Table 1: Descriptive statistics of the respondents about research variables

Components	Minimum	Maximum	Range	Average	Standard deviation
Emotional intelligence	78	200	122	142.47	23.95
Spiritual intelligence	25	89	64	61.41	13.34
Achievement	10	20	10	16.82	2.6

Table 2: The results of correlation coefficient for research variables

	1	2	3	4	5	6	7	8	9	10	11
1-CET	1										
2-PMP	.69**	1									
3-TA	.52**	.50**	1								
4-CSE	.51**	.46**	.64**	1							
5-optimism	.39**	.54**	.65**	.62**	1						
6-EP	.46**	.58**	.66**	.60**	.83**	1					
7-RE	.45**	.57**	.74**	.59**	.78**	.77**	1				
8-SC	.42**	.53**	.70**	.64**	.76**	.81**	.76**	1			
9-C1	.66**	.59**	.71**	.70**	.63**	.78**	.74**	.77**	1		
10-C2	.55**	.61**	.61**	.59**	.65**	.72**	.70**	.73**	.80**	1	
11-C3	.45**	.40**	.54**	.42**	.42**	.41**	.47**	.44**	.62**	.56**	1

**. Correlation is significant at the 0.01 level (2-tailed).
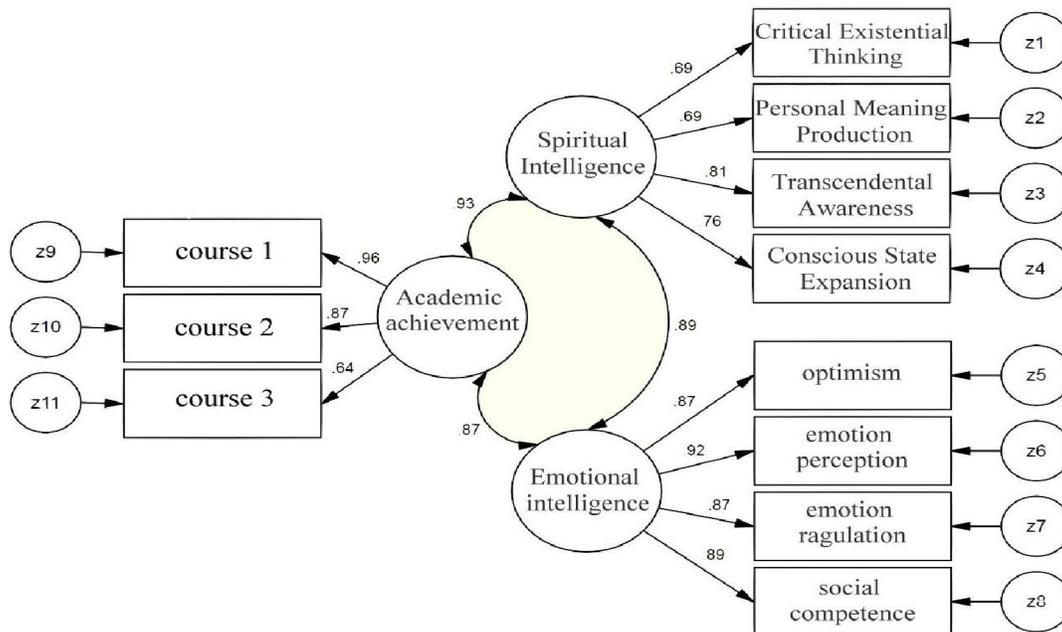
Fig 2: factor loading of the model

Table 3 Fitness indices

Acceptable value	Observed value	Measures	Types of measures
More than 0.90 More than 0.80	0/95	Goodness-of-Fit Index (GFI)	Absolute Fit Indices
	0/92	Adjusted Goodness-of-Fit Index (AGFI)	
More than 0.90	0/92	Normed Fit Index (NFI)	Parsimonious Fit Indices
	0/94	Incremental Fit Index (IFI)	
	0/95	Comparative Fit Index (CFI)	
Less than 0.08	0/068	Root Mean Squared Error of Approximation (RMSEA)	Parsimonious Fit Indices

Discussion and conclusion

As indicated previously, the relationship between different types of intelligence and achievement were investigated in this study among students of university of Isfahan. This subject has been studied by the authors and professionals of education and psychology fields for many years. Also emotional intelligence is one of the concepts that were attended by the authors and researchers. Salovey and Mayer (2000) found in their study that the higher levels of emotional intelligence lead to self-efficacy and receiving social acceptance that moderate different aspects of successfulness in the life and also leads to increasing the use of problem-oriented strategies. Experts and professionals consider emotional intelligence as a most important predictor of achievement (Salovey and Mayer, 2000), (Kooker, 2007), (Hiein, 2000).

In the present study, significant positive relationship was observed between emotional intelligence and achievement (r= 0.87). Therefore, it can be said that emotional intelligence has explained 75% of achievement variance. While these findings show high effect of emotional intelligence on the achievement, but spiritual intelligence has more effect on achievement (r= 0.93) and also has explain 86% of achievement variance among the students.

Wiggles worth (2004) concluded resulted that the growth of spiritual intelligence is one of the most important factors improving educational performance. He believes that spiritual intelligence is one that human being can develop his/her performance through it and has happier, more meaningful, and more successful education. Zohra and Marshall (2000) found that peoples with high levels of spiritual intelligence can adopt a different method in educational environment. They identified important characteristics of the spiritual intelligence that including individual confidence, influencing, contacting, interpersonal perception, managing the changes, and passing the difficult paths. Also they believed that it is necessary to utilize spiritual intelligence, rationality, and analysis for making important decisions and also applying emotional intelligence in order to perceiving and controlling personal emotions and other's emotions.

Finally, it can be said based on the above-mentioned descriptions that the results of SEM indicate that it is possible to develop a model for explaining student achievement based on the emotional and spiritual intelligences. Also the best method for predicting student's achievement based on their intelligence levels is considering the different levels of intelligence as effective factor on achievement and then design educational performance based on their relationships. The results of emotional and spiritual intelligence components indicated that transcendental consciousness has important role in spiritual intelligence with factor loading 81% and perception of emotions in emotional intelligence with factor loading 92%. These findings are supported by Emmons (2000). He pointed out that transcendental consciousness or capacity of transcendent is the most important ability of achievement that he defined as ability of promotion from material and physical aspects through understanding god's presence. Also Salovey et al. (2000) believed that perceiving emotions will be effective with social relations and is considered as the critical factor of achievement.

The past studies used emotional and spiritual intelligences as the separated variables for predicting educational performance, but the results of our study demonstrated that the best model is one that has different types of intelligences simultaneously. It can be said that emotional and spiritual growth includes personal growth and also goes beyond it. This starts with promotion of self-awareness and develops with the challenge about humans. Therefore, it is possible to achieve through conducting an effective educational system based on the spirituality and its preconditions and emotional characteristics in nourishing different abilities of human beings in coordinated manner.

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