



## Construction and Standardization of Passion Quotient Test in Elementary Students

Mahtab Salari<sup>1</sup>, Aboutaleb Seadatee Shamir<sup>\*2</sup>

1. MA Student of Educational Psychology, Department of Psychology, Sciences and Researches Branch, Islamic Azad University, Tehran, Iran.
2. Assistant Professor, Department of Psychology, Sciences and Researches Branch, Islamic Azad University, Tehran, Iran.

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### Abstract

**Purpose:** Considering the role and importance of passion in elementary students, the present study was conducted with the aim of constructing and standardizing passion quotient test in elementary students.

**Methodology:** This study was a descriptive from type of correlation. The population of this research was elementary students in District 5 of Tehran city in the academic year of 2019-20, which number of 500 people of them was selected as a sample by multi-step cluster sampling method. For passion quotient was prepared a researcher-made test (20 items) and its psychometric indices were examined. For this purpose, the content validity of the instrument was calculated by opinion experts, its structural validity was calculated by exploratory factor analysis by principal components method and its reliability was calculated by Cronbach's alpha and combined methods. For analyze data were used from SPSS-25 and LISREL-8.8 statistical software.

**Findings:** The results showed that the content validity of the instrument was confirmed by opinion experts and its construct validity by factor analysis method indicated the existence of four factors of interest, sensation seeking, focus and intimacy in relationships. The reliability of total and factors of interest, sensation seeking, focus and intimacy in relationships with Cronbach's alpha method were calculated 0.94, 0.88, 0.70, 0.90 and 0.71, respectively and with combined method were calculated 0.96, 0.90, 0.88, 0.91 and 0.83, respectively.

**Conclusion:** Passion quotient test with four factors of interest, sensation seeking, focus and intimacy in relationships had good validity and reliability. Therefore, it can be used to investigate and measure the passion quotient of elementary students to plan to improve their passion and motivation.

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\* Corresponding Author: [seadatee@srbiau.ac.ir](mailto:seadatee@srbiau.ac.ir)

## 1. Introduction

Psychometric approach, measurement theories and related models attach special importance to the practice of measurement and provide a framework for various topics and issues (Akubuilu, et al, 2020). Specialists in the education system, especially specialists in the field of educational sciences and psychology, are very interested in the discussion of intelligence testing as one of the most controversial educational issues (Pan, et al, 2018). One of the main traits in all people that affect other traits is intelligence (Jacob, et al, 2020). Intelligence tests are one of the most widely used tools among psychologists and counselors and are used as one of the components of students' psychological evaluation to determine educational needs (Varella & Moss, 2015). Intelligence is an abstract ability for which there is no single, comprehensive definition or obstacle, and different theories have defined it as general ability, abstract thinking, problem solving, learning ability, academic aptitude, reasoning ability, adaptability, or a combination of them (Velasco, 2017). Intelligence consists of the mental abilities necessary to adapt, select and shape to any kind of environment and flexibility in challenging situations (Francisco, et al, 2020). Intelligence as a kind of ability enables a person to think logically, to act purposefully and to interact effectively with the environment (Nazidizaji, Tome & Regateiro, 2015).

In general, there are three categories of theories about intelligence, including educational, analytical, and applied theories. In recent decades, analytical theory about intelligence has led to a better understanding of the types of intelligence (Alan, et al, 2021). Although at first only the cognitive aspect of intelligence was considered, but in recent years other aspects have been given special attention and one of the less studied aspects is the intelligence of passion (Salim & Shridar, 2016). Passion intelligence is one of the dimensions of emotional intelligence and emotional intelligence means the ability to understand the emotions and feelings of others to achieve and establish appropriate emotional communication with others (Marwaha, 2018). Emotional intelligence is also defined as the ability to receive emotions, perceive emotions, manage emotions, and apply emotions (Encinas & Chauca, 2020). Emotional intelligence theories believe that cognitive abilities and talents are not only successful predictors of adaptation and success in various fields, but also emotional components play an effective role in predicting them (Stiglic, et al, 2018). Passion intelligence is one of the dimensions of emotional intelligence that passion means the interaction of energy, inner interest and time or time that people devote to a particular activity (Kapoor, 2007), and desire intelligence means a set of abilities and processes that play an effective role in motivating, Have behavioral orientations and a desire to change and move (Jain & Chadha, 2015). Increases students' awareness of school, enhances their learning effort and energy, and improves the management of academic and non-academic activities (Kalpana, Roy & Babu, 2019). Eager students participate in class discussions, are active in classroom activities, and show interest and motivation in learning; Conversely, aspiring students do not achieve high levels of educational achievement, score lower, often drop out of school, and often feel anxious and tired (Gebregergis, Huang & Hong, 2020).

Although many studies have constructed and standardized tests on various dimensions of intelligence, research on passion intelligence is very limited and no research on passion intelligence has been found in the country. For example, the results of Barghi Irani, et al (2020) research on the factor structure and psychometric properties of the Multidimensional Student Passion Questionnaire showed that this structure has six factors: psychological desire, social and psychological desire, cognitive desire, relationship with desire peers. Emotional, faculty relationship was emotional passion and behavioral passion. Rasoli Khorshidi, Arab Ameri & Bahrami (2019) in a study entitled "Scaling the five components of student enthusiasm in school" concluded that this structure had five behavioral, dynamic, self-regulatory, emotional and cognitive factors whose convergent validity and reliability were confirmed. . In another study, Salim & Shridar (2016) concluded that passion intelligence played an effective role in pursuing and achieving professional, entrepreneurial and social life goals. Also, Jian & Chadha (2015) while developing a tool for passion intelligence concluded that this structure had four factors of emotional intelligence, motivation,

interest and ability, whose psychometric indices were confirmed. The results of Beyrami, Herfedost, Karami & Farnodian (2012) research on the factor structure of emotional intelligence test showed that this structure includes three common factors (faces, images, facilitation and emotions), perception (combinations and changes) and management (emotional management and management). Social) was. In another study, Kapoor (2007) reported that passion intelligence is different from mental intelligence, and that passion intelligence helps identify hidden emotions, talents, and creativity, and brings people to the pinnacle of success. In addition, Sepehrian, Delavar & Akbarzadeh (2007) while researching the construction and standardization of emotional intelligence test based on existing theories and indigenous culture concluded that emotional intelligence test has 9 factors: self-awareness, self-expression, impulse control, stress tolerance Empathy, interpersonal relationships, having positive emotions, optimism and problem solving were confirmed by factor analysis and reliability by Cronbach's alpha. In another study, Vallerand, et al (2003) reported that desire had two factors: concerted desire and obsessive desire.

Today, the role of intelligence tests in schools and educational situations is of particular importance for obtaining information about the abilities of children and adolescents, especially students. Intelligence tests can be used to design different programs for students according to their differences and guide them to the growth and excellence of different characteristics. Another important point is that after reducing the role of mental intelligence in predicting academic and non-academic characteristics, the role of other intelligences became more prominent and more importantly, these intelligences have the ability to learn and improve. Among the intelligences, the role of emotional intelligence was more prominent and a lot of research was done on it and various tools were made for it. One of the dimensions of emotional intelligence that has been less researched and no research has been found in Iran is the intelligence of passion. Based on the theoretical foundations, this structure has an effective role in identifying and achieving various goals, both academic and non-educational, and since no standard tools were found in the country, the authors of this article became interested in building such a tool. As a result, the present study was conducted with the aim of constructing and standardizing the IQ test in elementary students.

## 2. Methodology

This study was a descriptive correlational study. The population of this study was elementary school students in District 5 of Tehran in the academic year 2019-20, of which 500 were selected as a sample by multi-stage cluster sampling. In this sampling method, a list of primary schools in District 5 is prepared and then a number of schools are randomly selected and three classes are selected from each school in the fourth to sixth grades and all their students, if they have the conditions to enter the study and want to participate in the study as Samples were selected. Inclusion criteria included living with parents, not being rejected in the past, not receiving psychological interventions in the past year, not having a history of delinquent behaviors, and not having family problems, including marital incompatibility.

The process of conducting the research was that after reviewing the texts related to intelligence, passion and passion intelligence, with the help of the tutor, a number of items (26 items) were designed for the test of passion intelligence. Then, the content validity of this tool was examined by 15 experts in the field of educational sciences and psychology who were at least assistant professors in the fields of educational sciences and psychology. Based on their reviews, one of the items was removed due to disagreement or low agreement, and its 25-item form was approved by experts. In the next stage, to conduct the exam, first coordinate with the officials of Tehran's District 5 Education Department and prepare a list of schools, and after sampling, for the samples (fourth to sixth grade elementary students) in the presence of school staff, observe ethical points, importance and necessity of research. Those who wished to participate in the research were asked to submit a consent form to participate in the research to be signed by at least one of their parents. Passion intelligence test was collected on the samples after collection by the school executive staff and examined for analysis.

The instrument of the present study was a researcher-made test of passion intelligence with 25 items, which were scored from one to five using the Likert scale of five options. The instrument score was calculated with the total score of the items and the higher score indicated greater passion intelligence. In order to review and analyze the data obtained from the IQ test, in addition to examining the content validity based on experts' opinions, the validity of the instrument structure was calculated by exploratory factor analysis by principal component method and its reliability by Cronbach's alpha and combined methods. SPSS-25 and LISREL-8.8 statistical software were used to analyze the data.

### 3. Findings

The samples of the present study were 500 elementary students with a mean and standard deviation of  $11.49 \pm 0.89$  years; So that most of them were girls (54.60%) and were studying in the fourth grade (37.40%) and their father (46.40%) and mother (52.40%) were more educated (Table 1).

**Table1.** Frequency and frequency of demographic information of the samples

Variables	Levels	Abundance	Frequency
Gender	Girl	273	54/60
	Boy	227	45/40
Grade	Fourth	187	37/40
	Fifth	165	33/00
	sixth	148	29/60
Father's education	High school	75	15/00
	Diploma	29	5/80
	associate degree	68	13/60
	bachelor's	232	46/40
	Higher than bachelor	96	19/20
Mother's education	High school	29	5/80
	Diploma	45	9/00
	associate degree	80	16/00
	bachelor's	262	52/40
	Higher than bachelor	84	16/80

The study of the relationships between the factors and the whole test of passion intelligence showed a positive and significant relationship between all factors and the total passion of passion at a significance level of less than 0.01, which indicated the convergent validity of the instrument (Table 2).

**Table2.** Mean standard deviation and correlation coefficient of factors and total passion of passion

Factors	Average	Standard deviation	interest	Sensation Seeking	Focus	Intimacy in relationships	The whole intelligence of passion
interest	13/68	2/85	1				
Sensation Seeking	15/41	3/11	0/60**	1			
Focus	12/29	2/90	0/39**	0/56**	1		
Intimacy in relationships	9/75	1/96	0/33**	0/41**	0/56**	1	
The whole intelligence of passion	51/13	7/24	0/85**	0/79**	0/81**	0/74**	1

\*\*P < 0.05

The content validity of the Passion Intelligence Test was confirmed by 15 experts in the field of educational sciences and psychology who were at least assistant professors in the fields of educational sciences and psychology. Before analysing the data by exploratory factor analysis, its assumptions were checked that the KMO sample adequacy index with a statistic of 0.91 and Bartlett test with a statistic of

348.25 and significance at a level less than 0.001 indicated that the conditions for factor analysis were appropriate. . In other words, the data had the necessary adequacy and correlation to perform factor analysis.

The results of heuristic factor analysis showed that 5 items were removed from the IQ test due to inappropriate factor load and the final form of this test had 20 items in four factors of interest, excitement, concentration and intimacy in relationships (5 items each). Also, the factor load of all four components due to being higher than 0.40 indicates the existence of four factors of interest, excitement, concentration and intimacy in relationships whose convergent validity was confirmed due to higher than 0.50. In addition, the reliability of the IQ test and its factors were confirmed by Cronbach's alpha and combined methods because it was not less than 0.70 (Table 3).

**Table3.** Results of heuristic factor analysis, convergent validity and reliability of passion intelligence test

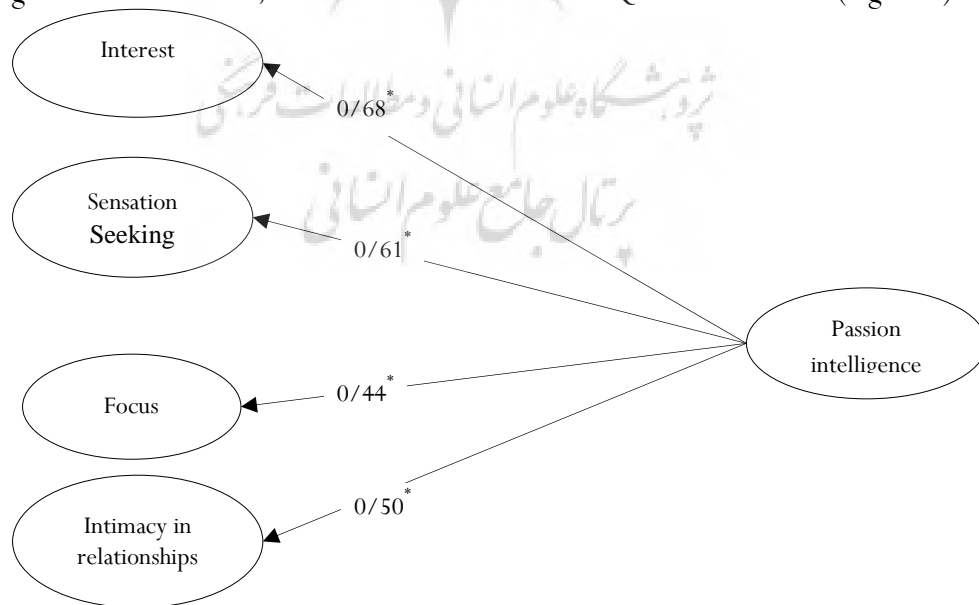
Factors	Number of items	Factor load	Convergent validity (AVE)	Reliability (Cronbach's alpha)	Reliability (combined)
interest	5	0/68	0/85	0/88	0/90
Sensation Seeking	5	0/61	0/82	0/70	0/88
Focus	5	0/44	0/62	0/90	0/91
Intimacy in relationships	5	0/50	0/73	0/71	0/83
Passion intelligence	20	-----	-----	0/94	0/96

The four-factor model fit indices of the Passion Intelligence Test (after correction) indicated the appropriate fit of the model (Table 4).

**Table4.** Fits of the four-factor model of the IQ test (after correction)

Factors	X <sup>2</sup> /df	GFI	AGFI	NFI	CFI	RMSEA
interest	2/82	0/95	0/91	0/94	0/92	0/06
Sensation Seeking	2/45	0/96	0/92	0/94	0/92	0/06
Focus	2/10	0/98	0/94	0/98	0/95	0/05
Intimacy in relationships	2/95	0/97	0/93	0/91	0/91	0/07
Acceptance limit	3<	0/90>	0/90>	0/90>	0/90>	0/08<

According to the above results, the four-factor model of the IQ test is as follows (Figure 1).



**Figure1.** Four-factor model of passion intelligence test

#### 4. Discussion

One of the types of intelligence that has received a lot of attention today is emotional intelligence, one of the important dimensions and components of which is passion intelligence. Passion intelligence has an important and effective role in performance and due to the lack of a standardized test for it; the present study was conducted with the aim of constructing and standardizing the passive intelligence test in elementary students. Based on the results of the present study, the IQ test in elementary students with 20 items and four factors of interest, excitement, focus and intimacy in relationships (5 items each) was extracted. Content validity, convergence and confirmation tool structure and its reliability by Cronbach's alpha methods and the combination was approved. Although there are many tools for measuring emotional intelligence such as the Emotional Intelligence Test (Beyrami & et al, 2012) and the Indigenous Emotional Intelligence Test (Sepehrian & et al, 2007), There is a five-component scale of student motivation in school (Rasoli Khorshidi & et al, 2019) and a scale of enthusiasm (Vallerand & et al, 2003), but only one external instrument on passion intelligence was found, according to which the structure has four The factor of emotional intelligence was motivation, interest and ability (Jian & Chadha, 2015).

The findings of this study on the test of passion intelligence and its factors were in line with the findings of Jian & Chadha (2015), which explains that passion intelligence is one of the new types of intelligence that has entered the science of psychology today and this intelligence indicates abilities and processes. Is that they play an effective role in motivating and directing human behavior. In other words, passion is one of the behavioral motivators of individuals that give people the passion for change, movement and dynamism. Also, intelligence is a stimulus in which there are sufficient motivations to drive behavior in a certain direction. When people are passionate enough to do something, they are more successful, which can be due to passion intelligence. This intelligence is a sign that part of the organism's behavior depends on its nature and internal structure, and intelligence motivates people to move and perform certain behaviors. In addition, intelligence is an inner stimulus that comes from within people, but external factors can affect it, and this inner desire can be weakened or strengthened by external factors; provide the ground for action, and sufficient motivation and strength to do so. Have purposeful behaviors. Passion intelligence indicates that it can be improved with the help of special training and training methods, and if people with low passive intelligence undergo special training, their level of passive intelligence will increase.

Due to the small theoretical and research background about the IQ test, it was difficult to make this tool and another limitation was that it was not possible to compare the results of this study with other studies. Restriction of the research community to primary school students in Tehran and failure to review the results by gender were other limitations of this study. Therefore, conducting more research on passion intelligence and even building a tool to measure it in students and even staff and comparing the results with the results of this research can lead to interesting results. Another suggestion is to conduct this research on primary school students by gender and to conduct it on students of other educational levels.

Passion intelligence test with good factors of excitement, concentration and intimacy in relationships had good validity and reliability. Therefore, it can be used to assess and measure the intelligence of elementary students to plan to improve their motivation and motivation. The construction and standardization of the Passion Intelligence test can create new avenues for the development and further research in the field of positive psychology and other fields of psychology and educational sciences. Using this tool to identify and determine the level of intelligence of passion and try to improve it in elementary students and even students in other levels can be helpful.

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