

# Explaining Model of Questioning Spirit Prediction Based on Emotional Intelligence and Cognitive and Emotional Indicators

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## Abstract:

Educational institutions are considered as one of the most important and infrastructural institutions in the society due to their serious role in educating the future generation, therefore, paying attention to the Questioning Spirit in the employees of these institutions is special importance. The aim of this study was to explain the model of predicting the spirit of questioning based on emotional intelligence and cognitive and emotional indicators. The statistical population included all staff and faculty members of Mashhad universities that 240 people were studied by cluster sampling. The instruments used in this study were Baron Emotional Intelligence Questionnaire, Heydari Questioning Spirit Questionnaire, Stroop Test and Comprehensive audiovisual test. The questionnaires were administered in accordance ethical principles and were statistically analyzed using path analysis and Pearson correlation coefficient. Findings indicated a good fit of the Questioning Spirit explanation model based on emotional intelligence and cognitive and emotional indicators. Also, the relationship between research variables and the spirit of Questioning was significant. These findings indicate the need for multidimensional attention to the factors affecting the spirit of questioning, in order to improve the level of this component in individuals.

**Keywords:** Questioning Spirit, Cognitive Factors, Emotional Factors, Emotional Intelligence, Personality

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## Introduction

Many behavioral scientists believe that organizations form the undeniable aspect of the modern world today, the nature of communities is shaped by organizations, and that in turn they are shaped by the world around them and the relationships that exist within them. Although organizations are established and organized in different ways and based on different goals, but without a doubt, all of them are managed and guided based on the psychological and physical efforts of human resources, which are its main pillars (Rezvani, 2015). In this regard, it can be said that educational and research institutions are derived from the context of society and at the same time are constructive and evolving. These institutions enhance the capability and capacity of human resources and play an effective role in

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developing individuals' talents to advance organizational affairs (Cavalro, Jr., & Lopez, 2008).

Questioning is start point of any scientific and research activity and it can be considered as the beginning of thinking and awareness. An examination of the conditions in educational environments shows that these environments are mainly based on providing raw information one-sidedly without stimulating the critical power and creativity of learners. In addition, it can be said that the lack of Questioning Spirit of the learners allows the professors to check the learners' understanding of the lesson. this action has Fundamental importance Because of providing professors information which needed to decide whether or not to re-teach certain courses (Jafari, 2012). The spirit of research includes these components: **1. Curiosity:** means desire to know, to ask questions, to take the lead in solving problems and to do research. **2. Argument:** Provide a logical reason for any discussion or provide a reason for agreement and disagreement. **3. Creativity:** The ability to express a basic idea or invent something unique. **4. Self-confidence:** believing to yourself, believing to your ability and ability to act, believing to your ability to make meaningful communication. **5. Critical Thinking:** Critical thinking is the individual's willingness to re-examine the methods used, refine ideas, and Performance. **6. Passion:** freshness and great interest to some subject or cause and effort to achieve it. **7. Collaboration and participation:** willingness to work with others and participate in the group. **8. Independence of opinion:** desire for self-leadership, self-reliance and emphasis on one's opinions (Seyed Majidi et al., 2014).

One of the suggested solutions is to design learning environments in such way that people learn to ask questions and problem-solving As far as asking questions becomes a habit for them. This can be achieved by identifying the factors that affect learners' questioning. One of these factors is emotional intelligence.

Emotion has important role in various aspects of life such as adapting to life changes and stressful events. Basically, emotion can be considered as biological reactions to situations that we consider an important or challenging opportunity, and these biological reactions are accompanied by the response we give to those environmental events. (Granfski et al., 2010). Emotional intelligence consists of some components including: **self-awareness** (one should have insight and be aware about inner strengths and inner weaknesses and internal resources), **social skills** (skills in creating effective interpersonal relationships, understanding one's own emotions and those of others) and **optimism** (insistence on pursuing goals and working with hope, despite obstacles and difficulties) (Petrides and Farnham, 2006).

Salvi, Bedel, Taylor, & Meyer (1999; quoting Ahmet Oqlu et al., 2011) believe that people with high emotional intelligence are more successful in communicating with the world around them and coping with stressful situations. It seems that researchers face more stressors due to their main goal which is full of interpersonal relationships in the research process. Identifying stressors along with their origins and control areas can be very important. Emotional intelligence as a component of emotion regulation plays a major role in people dealing with sources of stress in their living environment.

Because both terms research spirit and emotional intelligence, special attention is paid to people's mentality of what is going on around them, the aspect of self-awareness has an important place in both variables. In emotional intelligence, self-awareness is the importance

of recognizing one's emotions and their impact on performance, through which proper self-assessment enables people to be aware of their abilities and limitations, to search for individual mistakes and to learn, and to know where to go. They are making progress (Gelman, 2002; quoting Hacker and Washington, 2017).

Research has shown that psychosocial conflicts and lack of mental health can reduce the performance of researchers (Kloniger et al., 2015). Accordingly, for this research, a model can be considered that includes dimensions that can be examined in each of the components of emotional intelligence and research style. According to the issues raised in the Introduction, the main question for the researcher is whether a significant relationship can be considered between emotional intelligence and the spirit of questioning and research?

### Methodology

The method of the present research is applied and in terms of purpose is descriptive correlation. Therefore, in the present study, we seek to examine the research variables among the target community (professors and university staff). This research can also be considered as Positivist research. Because it seeks to identify some laws of human behavior (in this study, questioning in the organizational environment) and then predicting future behaviors. The choice of this community is due to the fact that professors and staff are more exposed to research due to their job conditions.

The statistical population in this study includes all members of the population which are samples of the present study according to Krejcie & Morgan table (Naderi and Seif Naraghi, 1392) is estimated at 242 people and by considering the possibility of unwillingness of some people to participate in Research or invalidity of a number of returned questionnaires, 240 people will be considered as a prototype.

$$N = \frac{z^2 pq}{d^2} = \frac{(1.96)^2 (0.5 * 0.5)}{(0.08)^2} = 240$$

In this study, according to the nature and purpose of the subject, the required information is collected using a questionnaire. After obtaining the necessary permits, the required sample will be selected from the relevant universities in a multi-stage cluster method, then the questionnaires will be provided to the participants. Convince, so that they can complete the questionnaire. After collecting the questionnaires and extracting the raw scores, the data will be analyzed and the research questions will be examined using SPSS software. The tools which used in this study are:

#### ***Emotional Intelligence Questionnaire:***

This questionnaire has 90 questions, which is the first transcultural emotional intelligence questionnaire. This test was performed in three stages in Iran and after making some changes in the main text of the questionnaire, deleting or changing some questions and rearranging the questions of each scale, the questionnaire was reduced from 117 questions to 90 questions and has some subscales: *intrapersonal skills, interpersonal skills, coping with stress (stress control), adaptation scale and general mood scale* (Kiani 2002). Earning more points in this test indicates the superior position of the person in the considered scale or in the whole test and vice versa. For example, earning a higher score on the scale of self-expression indicates more self-expression in the individual. Cronbach's alpha rate for the whole test was reported

to be 93%. This rate (alpha calculated in the third stage) was the same as the alpha calculated in the second stage of the test (Samoei et al., 2005).

#### ***Heydari Questionnaire Spirituality Questionnaire:***

This questionnaire was made based on the study of existing texts .This questionnaire has three components; *Search, critical thinking and research ability*. The questionnaire also has 35 items and is scored on a five-point Likert scale (strongly disagree -1 to strongly agree -5).

#### ***Stroop test (cognitive):***

The classic Stroop test was Created in 1935 by Ridley Stroop to evaluate executive functions such as cognitive inhibition. After presenting the classic model of this test in 1935, various other models of this test have been made and used. In computerized models, consonant words (the color of the word is the same as the meaning of the word) and inconsistent words (the color of the word is not the same as the meaning of the word) randomly presented to the person at a specific time and the reaction time (RT) of the person in response , The number of correct and incorrect answers of the person as well as his score of interference are accurately calculated. The interference effect causes the subjects' performance speed be reduced in naming inconsistent words compared to the consonant words. In this test, the subjects should write each of the 4 words Color based on its color and regardless of the meaning of the word, answer by pressing one of the four designated keys. For this test, a reliability of 0.93 has been reported. In the present study, the computer version of the Stroop test will be used.

#### **Integrated visual and Auditory test:**

IVA is a continuous 20-minute visual and Auditory test that assesses two main cognitive factors, namely reaction control and attention. This test is based on the fifth version of the diagnostic and Statistical manual of mentally disorders which abbreviated DSM. This test is also used to check for problems and disorders such as self-control problems related to head injuries, sleep disorders, depression, anxiety (in DSM-IV obsessive-compulsive disorder is a subset of anxiety disorders), learning disabilities, dementia and other medical problems. This test is applicable for people 6 years and older and adults. The duration of this test (along with the training section) is about 20 minutes. The task of the test is to answer or not to answer. The test requires attention retention.

The IVA test consists of 6 general scales and 22 subscales, which are divided into the following 5 groups: *response control, attention, Attribution, markers, fine movement regulation*. The IVA test has sufficient sensitivity (92%) and correct predictive power (89%) for correct diagnosis of disorders. The validity of the test in the open test method shows 22 IVA scales have direct and positive relationship with each other (88% - 46%) collected data were analyzed by Using path analysis.

#### **Findings**

The frequency of women participating in the study was (38%) and men participating was (62%).

**Table 1-Mean and standard deviation of research variables**

	<i>Questioning</i>	<i>Emotional self-awareness</i>	<i>social skills</i>	<i>Understanding emotions</i>	<i>Optimism</i>
Average of standard deviation	154/35 12/74	24/12 7/41	17/43 5/11	19/84 7/38	20/07 4/78
	<i>Creativity</i>	<i>Problem solving</i>	<i>Critical Thinking</i>	<i>Research motivation</i>	
Average of standard deviation	10/11 3/72	74/29 11/68	63/44 10/28	44/71 9/56	

The results showed that the distribution of data in all variables is normal. This issue was investigated using the Kolmogorov Smirnov test, the results indicate that this test is *not significant* and verify the default confirmation to the normality of data distribution.

**Table 2 - Correlation coefficient matrix between research variables**

<b>Variable</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<i>Questioning</i>	1								
<i>Emotional self-awareness</i>	0/211	1							
<i>social skills</i>	0/107	0/121	1						
<i>Understanding emotions</i>	0/112	0/097	0/458	1					
<i>Optimism</i>	0/176	0/139	0/114	0/162	1				
<i>Creativity</i>	0/235	0/149	0/151	0/124	0/457	1			
<i>Problem solving</i>	0/218	0/154	0/173	0/141	0/486	0/468	1		
<i>Critical Thinking</i>	0/174	0/235	0/146	0/197	0/274	0/224	0/186	1	
<i>Research motivation</i>	0/136	0/129	0/128	0/119	0/184	0/229	0/243	0/567	1

According to Table 2, it is observed that there is a significant relationship between research variables and this indicates the inclusion of all variables in the path analysis model.

**Table 3 - Model fit indicators**

<i>NFI</i>	<i>CFI</i>	<i>AGFI</i>	<i>GFI</i>	<i>RMSEA</i>	$\chi^2/df$	$\chi^2$	
0/91	0/92	0/90	0/96	0/081	2/63	28/93	Estimation

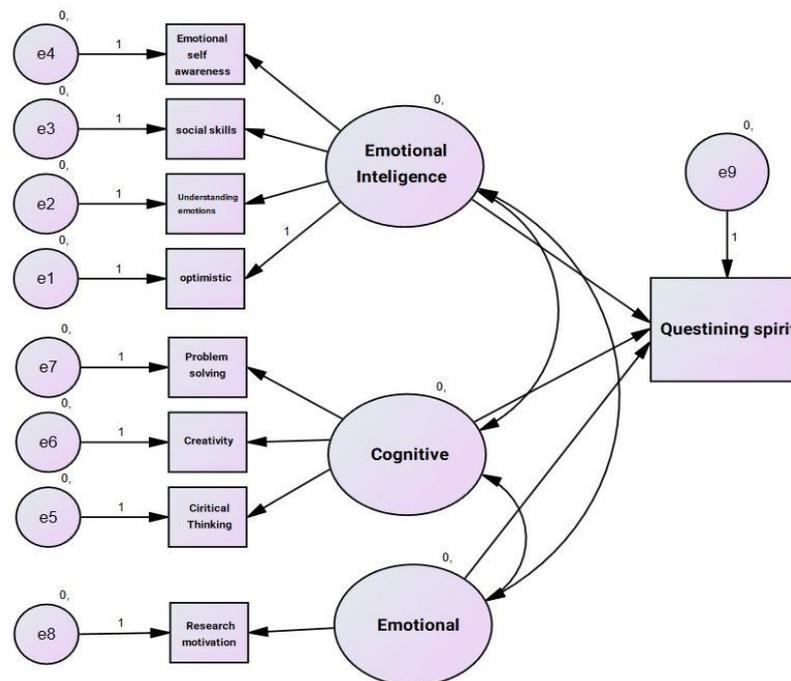
Chi-square study showed that the model has a good fit with the data. Also, Other fitness indices were also examined which showed that the softened chi-square ( $\chi/df$ ) is less than 3 and GFI, AGFI and CFI indices and are greater than 0.90. Also, RMSEA is less than 0.08,

which all indicate a good fit of the structural model with the data. The direct and indirect effects of research variables are presented in Table 4.

**Table 4-Direct and indirect effects of research variables**

<i>paths</i>	<b>direct impact</b>	<b>Total effect</b>
<i>Emotional self-awareness</i>	0/217	0/217*
<i>social skills</i>	0/384	0/384**
<i>Understanding emotions</i>	0/391	0/532**
<i>Optimism</i>	0/573	0/573**
<i>Creativity</i>	0/467	0/467**
<i>Problem solving</i>	0/311	0/311*
<i>Critical Thinking</i>	0/149	0/149*
<i>Research motivation</i>	0/151	0/151*

As can be seen in Table 4, the direct effects of the research variables on the query were significant at the 0.05 level.



**Figure 1. The final research model**

### Discussion

The purpose of this study was to study the model of explaining the research spirit based on cognitive and emotional indicators along with emotional intelligence. Findings of this study showed that the model of questioning spirit has a good fit. This finding is consistent with the results of many studies; It is consistent with the findings of Ganji (2010), Frankie et al. (2009), Margoti (2006), Rashid et al. (2011), Tahmasbzadeh et al. (2015) and Heidaripoor et al. (2016).

To Explaining this finding can be said one of the main skills of education which improve teaching and learning for teachers and students is their questioning spirit and emotional intelligence . Osborne (1966) and Torrance (1990) believe that more or less all people can be creative, and believe training intellectual abilities is the foundation of creativity. When the Curriculum is explained correctly to the students and the students can have a clear view of the concept, it generated creativity and questioning spirit in them. Wolflek says that the ability to be creative, like the ability to solve problems, depends on the knowledge and information of the individual in the field that deals with creation (Hassanzadeh, 2010). That is, having a rich repository of knowledge in a special field, is the basis of creativity and questioning spirit in that field. Teachers by teaching students and strengthening their morale in accepting new and effective ideas, as well as encouraging students to use regular self-assessment and explaining concepts to other classmates become creative learners (Downes and Lombardi, 1996).

Golman, another theorist in the field of emotional intelligence, believes that emotional intelligence is the ability to recognize the feelings of oneself and others, Motivation of oneself and others. Given that in the process of questioning experience, individuals face challenges in individual and social relationships, in the process of emotional intelligence, individuals manage interactions by engaging the ability to use awareness of current emotions as well as predicting the emotions of others and thus manage relationships.

These indicators express a common feature in individuals, which is the ability to control emotions in stressful situations, which is referred to as self-regulation. Therefore, in explaining the significant relationship between each component and questioning, we can refer to its mechanism of action in creating or strengthening self-regulation of individuals and the role of emotional intelligence in psychological stability and acquisition of self-regulatory skills in individuals.

Personal evaluation processes affect the dynamic relationship or interrelationship between the individual and the social effects in environment. In this regard, self-regulation is a practical and pivotal concept of personality due to emotional intelligence. Self-regulation means the ability to regulate one's emotions and to use emotions correctly and to direct them, which is based on the ability to be self-awareness of emotion and cognition. This component demonstrates a person's ability to regulate emotions and how to manage these situations. This intrapersonal dimension is important when approaching a person with difficult mental situations that require peace of mind. In addition, self-regulation demonstrates its ability to adapt, take initiative, desire for success, work conscience, build internal confidence, flexibility, and a holistic approach to all (Huang, S, 2015).

It has recently become clear that researchers sometimes experience a feeling called burnout. Burnout causes disability and can be easily treated if detected early. According to research, this problem is due to the exposure of these people to stress and sometimes the lack of positive conditions and low level of emotional intelligence in the research environment. In this regard, As much as more competent and efficient the researcher is, such as training Questioning strategies to Human Capital, the more progress and success that country will have in various economic and social fields (Ahmetoglu, G., Leutner, F., & Chamorro-Premuzic, T. 2011)

### References

1. Khoshchian, Jaleh, Mehran, Golnar, Akbarzadeh, Nasrin. (1389). A Study of the Components of Emotional Intelligence The Bar-On Theory in First Year High School Textbooks. *New educational ideas*. 6 (4). 33-60
2. Mehri Nejad, Seyed Abolghasem; Sharifi, Hassan Pasha (1384). Evaluation of the effectiveness of problem-solving teaching and evaluation based on research indicators in cultivating the spirit of research. *Journal of Educational Innovations*. 4 (14). 9-37
3. Bradbury, Travis and Graves, Jane. (2010). *Emotional intelligence (skills and tests)*. (Translated by Mehdi Ganji, 1390). Tehran: Salavan
4. Haidarpour, M., and Nili Ahmadabadi, M., and Yarmohammadian, M. (1395). The relationship between learning styles and the questioning spirit of undergraduate students at the University of Isfahan. *Research in Curriculum Planning (Knowledge and Research in Educational Sciences-Curriculum Planning)*, 13 (23 (50 in a row)), 53-63.
5. Karatepe, O.M., Karadas, G., 2015. Do psychological capital and work engagement foster frontline employees satisfaction?: A study in the hotel industry. *Int. J. Contemp.Hosp. Manage.* 27 (6), 1254° 1278 .
6. Vahedi, A., Krug, I., & Westrupp, E. (2019). Crossover of Parents' WorkFamily Conflict to Family Functioning and Child Mental Health. *Journal of Applied Developmental Psychology*, 62, 38-49
7. Cloninger, P. A., Selvarajan, T. T., Singh, B., & Huang, S. (2015). The mediating influence of work–family conflict and the moderating influence of gender on employee outcomes. *The International Journal of Human Resource Management*, 26(18), 2269-2287.
8. Seyedmajidi M, Abbasi AJ, Jahanian I, Khafri S, Hamzehpour MT. Evaluation of graduate students' satisfaction from thesis supervision in Babol Faculty of Dentistry. *Journal of Craniomaxillofacial Research*. 2014; 1(3-4): 51-57
9. Garnefski, N., Kraaij, V., & Spinhoven, P. (2001). Negative life events, cognitive emotion regulation, and emotional problems. *Personality and Individual Differences*, 30 (8), 1311–1327.
10. Petrides, K.V. & Furnham, A. (2001). Trait emotional intelligence: Psychometric investigation with reference to established trait taxonomies. *European Journal of Personality*, 15, 425 448
11. Ahmetoglu, G., Leutner, F., & Chamorro-Premuzic, T. (2011). EQ-nomics: Understanding the relationship between individual differences in trait emotional intelligence and entrepreneurship. *Personality and individual differences*, 51(8), 1028-1033.