

Predicting EFL Learners' Emotional Intelligence and Critical Thinking Ability through Big-Five Personality Traits: A Study on Psychological Characteristics of EFL Learners

Mania Nosratinia¹, Elnaz Sarabchian²

¹ *Assistant Professor, Islamic Azad University, Central Tehran Branch, Faculty of Foreign Languages, English Department, Tehran, Iran.*

mania_nosratinia@yahoo.com

² *MA Candidate, Islamic Azad University, Central Tehran Branch, Faculty of Foreign Languages, English Department, Tehran, Iran.*

Elnaz.sarabchian@yahoo.com

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Abstract

This study investigates the relationship among EFL learners' Big-Five personality traits, emotional intelligence (EI), and critical thinking (CT). A group of 211 male and female EFL university students were randomly selected and given three questionnaires: The NEO-FFI, Bar-On Emotional Quotient Inventory, and Peter Honey critical thinking appraisal. Analysis of the results showed that, there was a significant relationship between students' personality traits with their EI and CT skills. Multiple regressions revealed that Conscientiousness predicted 4 percent of CT, Openness to Experience predicted 7.2 percent, and finally, Neuroticism predicted 9.8 percent of CT. Regarding EI, Neuroticism predicted 40 percent of EI; conscientiousness predicted 48 percent, extroversion predicted 50 percent, and finally Openness to Experience predicted 51.8 percent of EI. Thus, it can be concluded that five-factor personality traits can have predictive role in fostering EI and CT of EFL learners.

Keywords: *critical thinking, emotional intelligence, Big-five personality traits, effective learning, & individual differences*

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1. Introduction

Over the last few decades, a gradual but significant shift has taken place within the field of education, as part of it language learning and teaching. Wenden and Rubin [1] reported that language teaching research has shifted its focus away from different teaching methodologies to learner characteristics and their possible influence on the process of acquiring a second language. As we go further, divergence of learners' personality factors becomes more and more important in providing different learning services [2]. According to Putintseva [3], an educator has to bear in mind that: (1) People differ consistently from each other in their preferences (e.g., emotional, environmental) for certain ways of processing information (the 'individual differences' assumption); (2) These individual differences are measurable; (3) Matching or mismatching students' learning styles with instructional techniques affects learning significantly (the 'matching hypothesis').

With this shift of dominance from teacher-center to learners center education, a lot of groundbreaking works have laid a solid foundation for understanding individual differences, focusing on individuals' different personality types, critical thinking (CT) ability, and their emotional intelligences (EI).

1.1 Emotional Intelligence

Over the last decade, the concept of EI [4], [5], [6], as a factor for differentiating students' life success, has received attention in the popular literature. Mayer and his colleagues [7], [8] defined EI as a set of abilities that facilitate the perception, expression, assimilation, understanding, and regulation of emotions, so as to promote emotional and intellectual growth. Mayer and Salovey [7] posited that EI comprises four abilities: (1) the ability to perceive emotions in oneself and others, as well as in objects, art, and stories (perception of emotion), (2) the ability to generate emotions in order to use them in other mental processes (emotional facilitation of thought), (3) the ability to understand and reason about emotional information and how emotions combine and progress through relationship transitions (understanding emotions), and (4) the ability to be open to emotions and to moderate them in oneself and others (managing emotions).

Interest in EI reflects in part claims that individual differences in processing of affective information predict life success [9], [10]. For instance, emotional skills are associated with success in areas of effective teaching, student learning, and academic performance [11], [12], [13], [14], [15]. Undoubtedly, students' success in language learning is not solely limited to their EI capability.

1.2 Critical thinking

The importance of CT can be historically traced to 1933 as Dewey stated that the central purpose of education is learning to think. As part of that education, learners need to develop and learn to apply CT skills to their academic studies effectively [16]. According to Halpern [17] CT is the use of cognitive skills or strategies that increase the probability of a desirable outcome. Also, Watson & Glaser [18] believed that critical thinking is combination of individual knowledge, attitude, and performance. They also consider the following skills as main skills for critical thinking: deduction, identifying information, inference, interpretation, and evaluation of logical arguments. They believed that the ability of critical thinking is processing and evaluating former information with current information and its outcomes. CT is used to describe thinking that is purposeful, reasoned and goal directed. CT skills are associated with success in area of effective reading [19], successful writing [20], and professional success [21].

1.3 Personality

Considering diverse visions of individuals, as Jarvis [22] contended, entails adopting an eclectic position and incorporating equilibrium among cognitive, emotional, and diverse personality traits of learners. In this field, the five-factor model of personality is a conceptualization of personality comprising behavioral, emotional and cognitive patterns, which comprehensively covers the five major traits that define human personality across cultures: Neuroticism (N), the tendency to experience negative emotions such as anxiety and depression; Extraversion (E), the tendency to be sociable, warm, active, assertive, cheerful, and in search of stimulation; Openness to Experience (O), the tendency to be imaginative, creative, unconventional, emotionally and artistically sensitive; Agreeableness (A), the dimension of interpersonal relations, characterized by altruism, trust, modesty, and cooperativeness; and Conscientiousness (C), a tendency to be organized, strong-willed, persistent, reliable, and a follower of rules and ethical principles [23]. Personality is related to academic performance, grades in math and Dutch language learning [24].

Patterns of personality, CT and EI are closely related to factors such as attitude, opportunities, interests, unique abilities and learning style. These factors are very important to help students and educators mainly due to their act as vital influence on academic achievement [25]. Teaching and learning methods can be designed and modified to improve students' academic achievement by considering their pattern of personality, CT and EI. Thus, by reflecting divergence of learning process among different learners, teachers may decrease mismatches between leaning and instruction.

The purpose of this study is to identify interrelated patterns of personality, CT and EI among EFL university students. In line with the above purpose, this study comprised two research objectives:

- To identify patterns of personality, EI, and CT skills among EFL university students.
- To identify possible interrelationships among patterns of personality, EI, and CT among EFL university students.

2. Methods

2.1. Participants

Two hundred and eleven students, majoring in English Language Literature and English Language Teaching, between 19-30 years old, were randomly selected and given three questionnaires. The participants were almost evenly split between men (48.0%) and women (52.0%). During the study process, 12 students were excluded from data analysis due to missing questionnaire responses, or disagreement to answer certain questionnaire.

2.2. Instruments

2.2.1 Personality

NEO-Five-Factor Inventory (NEO-FFI): The NEO-FFI is a shortened version of the Revised NEO Personality Inventory (NEO PI-R) and provides a measure of the five domains of adult personality: Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A), and Conscientiousness (C) using a 60-item form [26]. Sixty items are rated on a 5-point scale and require 10–15 min to complete. The NEO-FFI factors show correlations between 0.75 for conscientiousness and 0.89 for neuroticism with the full-scale NEO-PI valid Imax factors. Internal consistency reliabilities for the NEO-FFI range from 0.68 (A) to 0.86 (N) and test–retest

reliabilities range from 0.79 (E and O) to 0.89 (N) [26].

Neuroticism is a general tendency to experience negative affects such as anxiety, hostility, depression, self-consciousness, impulsiveness, and vulnerability. Higher scores on the N domain are indicative of the presence of neuroses. Low scores are associated with emotional stability and the ability to handle stress [26].

Extraversion is associated with activity, assertiveness, excitement seeking, sociability, and positive emotions. Extraverts are generally energetic, optimistic, and upbeat. Introversion is not the opposite of extraversion and is more difficult to profile. Introverts may prefer to be alone but not suffer from social anxiety, and although not given to the exuberance and high spirits of extraverts, introverts are not necessarily unhappy or pessimistic [26].

Openness to experience subsumes characteristics such as aesthetic sensitivity, imagination, intellectual curiosity, and independent judgment [26]. Open individuals tend to be unconventional and willing to question authority and offer new ideas.

Agreeableness is a dimension of interpersonal tendencies. Highly agreeable individuals tend to be altruistic, compliant, modest, and trusting, while disagreeable individuals tend to be egocentric, skeptical of others intentions, and very competitive.

Conscientiousness is associated with achievement striving, competence, dutifulness, and self-discipline [26]. High scores in C domain are positively related to academic and occupational performance [27].

2.2.2 Emotional intelligence

Bar-On Emotional Quotient Inventory (EQ-I): Bar-On EQ-I test, designed by Bar-On in 1980, is a self-report measure of emotionally and socially intelligent behavior and provides an estimate of emotional-social intelligence [28]. The test includes 90 items in the form of short sentences and employs a five-point response scale with a textual response format ranging from 'very seldom' or 'not true of me' to 'very often' or 'true of me'. Each item has the value of 5 ranging to 1. EI test is suitable for individuals 17 years of age and older and takes approximately 30 minutes to complete.

2.2.3 Critical Thinking

Peter Honey [29] critical thinking questionnaire was administered to the participants to evaluate the skills of analysis, inference, evaluation, inductive reasoning and deductive reasoning. The questionnaire includes 30 multiple-choice items. Each item has a score of 1 ranging to 5.

2.3 Procedure

A brief introductory session with students studying at Islamic Azad University was arranged. Students were informed that their performance on the test is voluntary and will not affect their final course results and they were assured for the confidentiality of the data gathering procedure. After giving an oral instruction of how to perform on the questionnaires each participant received a package of research instruments containing the NEO-FFI, the Bar-On EQ-I, and Honey CT questionnaire along with the written instructions for each form. The students were asked to fill the questionnaires and return the results on the same or next session at the same class.

4. Results

4.1 Testing Assumptions:

Three assumptions of interval data, independence of subjects, and normality [30] were met before running parametric tests to probe research questions.

As displayed in Table 1 the values of skewness and kurtosis were within the range of ± 2 [31]. The assumption of normality was also met even with the more conservative criteria of ± 1 suggested by [32].

Table 1: Tests of Normality

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Problem-solving	211	.042	.167	-.174	.333
Happiness	211	.483	.167	-.027	.333
Independence	211	.491	.167	.269	.333
Stress tolerance	211	.326	.167	.264	.333
Self-actualization	211	.271	.167	-.388	.333
Emotional self-awareness	211	.311	.167	.100	.333
Reality testing	211	.130	.167	-.219	.333
Interpersonal relationship	211	.558	.167	.273	.333
Optimism	211	.260	.167	-.061	.333
Self-regard	211	.553	.167	.043	.333
Impulse control	211	.235	.167	-.554	.333
Flexibility	211	.057	.167	.025	.333
Social responsibility	211	.274	.167	-.191	.333
Empathy	211	.265	.167	-.736	.333
Assertiveness	211	.248	.167	-.022	.333
Some	211	.168	.167	-.176	.333
Critical Thinking	211	-.547	.167	.430	.333
Neuroticism	211	.312	.167	-.149	.333
Extroversion	211	-.242	.167	.107	.333
Openness to experience	211	.180	.167	.165	.333

Agreeableness	211	-.281	.167	.628	.333
Conscientiousness	211	-.017	.167	-.654	.333

4.2. Correlation between CT, EI and personality

Table 2 displays the Pearson correlations between CT, EI and personality. There was a significant correlation between personality traits and CT and EI scores ($P < 0.05$) except for correlation between openness to experience personality trait and EI score ($P < 0.05$).

However, when an inspection of the individual R-values was warranted, neuroticism showed the highest relationship with EI ($R = .63, P = .000 < .05$). Other personality traits showed negative correlation with EI. The correlation between personality traits and EI ranged from a low coefficient of $-.030$ for openness to experience to $-.50$ for extroversion. On the other hand with the exception of neuroticism, which showed a negative correlation with CT, other personality traits showed positive and significant correlations with CT scores. It seems that CT and EI show opposite correlations with personality traits.

Table 2: Pearson Correlation Big-Five Personality Traits with Critical Thinking and Emotional Intelligence

		EI	CT
Neuroticism	Pearson Correlation	.633**	-.189**
	Sig. (2-tailed)	.000	.006
	N	211	211
Extroversion	Pearson Correlation	-.502**	.174*
	Sig. (2-tailed)	.000	.012
	N	211	211
Openness to experience	Pearson Correlation	-.030	.173*
	Sig. (2-tailed)	.663	.012
	N	211	211
Agreeableness	Pearson Correlation	-.413**	.182**
	Sig. (2-tailed)	.000	.008
	N	211	211
Conscientiousness	Pearson Correlation	-.431**	.201**
	Sig. (2-tailed)	.000	.003
	N	211	211

**.	Correlation is significant at the 0.01 level (2-tailed).
*	Correlation is significant at the 0.05 level (2-tailed).

4.3. Correlation between Personality traits and EI clusters

In evaluation of correlation between personality traits and EI clusters, neuroticism showed significant and powerful correlations with all subscales of EI except for interpersonal cluster. Extroversion, agreeableness and conscientiousness showed significant but negative correlations with subscales of EI. Openness to experience showed non-significant correlations with components of EI (Table 3).

Table 3: Pearson correlation subscales of personality traits and EI cluster

		Intrapersonal	Interpersonal	Adaptability	Stress Management	General Mood
Neuroticism	Pearson Correlation	.621**	.092	.549**	.507**	.515**
	Sig. (2-tailed)	.000	.183	.000	.000	.000
	N	211	211	211	211	211
Extroversion	Pearson Correlation	-.463**	-.248**	-.350**	-.261**	-.560**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	211	211	211	211	211

Openness To experience	Pearson Correlation	-.070	-.119	-.005	.085	.027
	Sig. (2- tailed)	.312	.084	.941	.217	.700
	N	211	211	211	211	211
Agreeableness	Pearson Correlation	-.266**	-.358**	-.376**	-.352**	-.278**
	Sig. (2- tailed)	.000	.000	.000	.000	.000
	N	211	211	211	211	211
Conscientiousness	Pearson Correlation	-.347**	-.298**	-.413**	-.266**	-.317**
	Sig. (2- tailed)	.000	.000	.000	.000	.000
	N	211	211	211	211	211
**. Correlation is significant at the 0.01 level (2-tailed).						

4.4 Pearson correlations among CT and EI clusters

CT showed significant and negative correlations with EI clusters. The correlations ranged from a powerful correlation of -.43 with adaptability to a weaker correlation of -.28 in interpersonal and stress management.

Table 4: Pearson correlation subscales of CT and EI clusters

		Critical Thinking
Intrapersonal	Pearson Correlation	-.371**
	Sig. (2-tailed)	.000
	N	211
Interpersonal	Pearson Correlation	-.289**
	Sig. (2-tailed)	.000
	N	211
Adaptability	Pearson Correlation	-.432**
	Sig. (2-tailed)	.000
	N	211
Stress Management	Pearson Correlation	-.289**
	Sig. (2-tailed)	.000
	N	211
General Mood	Pearson Correlation	-.303**
	Sig. (2-tailed)	.000
	N	211
**. Correlation is significant at the 0.01 level (2-tailed).		

4.5. Predictability of CT and EI through personality traits

A multiple regression was run to probe the power of personality traits in predicting CT and EI. As displayed in Table 5, conscientiousness ($R = .20$, $R^2 = .04$) was the best predictor of CT. It predicted 4 percent of CT score. Openness to experience was the second best predictor, which increased the predictive power to 7.2 percent ($R = .269$, $R^2 = .072$). And finally the third best predictor, neuroticism increased the predictive power to 9.8 percent ($R = .313$, $R^2 = .098$). The results of the ANOVA test ($P < .05$) indicated that the regression models at the three above-mentioned steps enjoy statistical significance (Table 6).

Table 5: Model Summary personality traits and CT

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.201 ^a	.040	.036	14.631
2	.269 ^b	.072	.063	14.420
3	.313 ^c	.098	.085	14.254
a. Predictors: (Constant), Conscientiousness				
b. Predictors: (Constant), Conscientiousness, Openness to experience				
c. Predictors: (Constant), Conscientiousness, Openness to experience, Neuroticism				
d. Dependent Variable: Critical Thinking				

Table 6: ANOVA Test of Significance of Regression Model BFPT and CT

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1874.723	1	1874.723	8.758	.003 ^b
	Residual	44739.713	209	214.066		
	Total	46614.436	210			
2	Regression	3363.083	2	1681.541	8.087	.000 ^c
	Residual	43251.353	208	207.939		
	Total	46614.436	210			
3	Regression	4559.153	3	1519.718	7.480	.000 ^d
	Residual	42055.283	207	203.166		

	Total	46614.436	210			
a. Dependent Variable: Critical Thinking						
b. Predictors: (Constant), Conscientiousness						
c. Predictors: (Constant), Conscientiousness, Openness to experience						
d. Predictors: (Constant), Conscientiousness, Openness to experience, Neuroticism						

As displayed in Table 7, Neuroticism ($R = .63, R^2 = .40$) was the best predictor of EI. It predicted 40 percent of EI. Conscientiousness was the second best predictor, which increased the predictive power to 48 percent ($R = .693, R^2 = .480$). Extroversion was the third best predictor, which increased the predictive power to about 50 percent ($R = .713, R^2 = .508$), and finally the last best predictor, openness to experience increased the predictive power to 51.8 percent ($R = .720, R^2 = .518$). Agreeableness was not entered into the regression model despite its moderate correlation with EI. The results of the ANOVA test ($P < .050$) indicated that the regression models at the four above-mentioned steps enjoy statistical significance (Table 8).

Table 7: Model Summary BFPT and EI

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.633 ^a	.401	.398	28.065
2	.693 ^b	.480	.475	26.225
3	.713 ^c	.508	.501	25.557
4	.720 ^d	.518	.509	25.352
a. Predictors: (Constant), Neuroticism				
b. Predictors: (Constant), Neuroticism, Conscientiousness				
c. Predictors: (Constant), Neuroticism, Conscientiousness, Extroversion				
d. Predictors: (Constant), Neuroticism, Conscientiousness, Extroversion, Openness to experience				
e. Dependent Variable: EI				

Table 8: ANOVA Test of Significance of Regression Model BFPT and EI

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	110344.542	1	110344.542	140.098	.000 ^b
	Residual	164613.439	209	787.624		
	Total	274957.981	210			
2	Regression	131909.151	2	65954.576	95.901	.000 ^c
	Residual	143048.830	208	687.735		
	Total	274957.981	210			
3	Regression	139751.730	3	46583.910	71.320	.000 ^d
	Residual	135206.251	207	653.170		
	Total	274957.981	210			
4	Regression	142561.428	4	35640.357	55.454	.000 ^e
	Residual	132396.553	206	642.702		
	Total	274957.981	210			
a. Dependent Variable: EI						
b. Predictors: (Constant), Neuroticism						
c. Predictors: (Constant), Neuroticism, Conscientiousness						
d. Predictors: (Constant), Neuroticism, Conscientiousness, Extroversion						
e. Predictors: (Constant), Neuroticism, Conscientiousness, Extroversion, Openness to experience						

5. Discussion

The research described is one of the few empirical studies of language learning and individual differences in which it has been possible to obtain data about personality, emotional intelligence, and critical thinking directly from university TESOL students. The data obtained in this research were developed from 211 students. Although it would have been desirable to have a larger sample for the number of statistical analyses planned, this study had a 94.6% response rate with no

missing data. This instills some confidence in the comprehensiveness of the database and the relationships that were assessed in this research. This study investigated the relationship among competencies of EI, five major domains of personality characteristics, and cognitive abilities comprising CT. This study considered the novel idea to empirically test these three constructs with major emphasis on predictability of EI and CT ability through big-five personality traits.

5.1. Relationship between the EI and CT

It was expected that a measure of intelligence, such as CT ability, would be separate and distinct from the concept of EI. This assumption is in consistence with Goleman's claim of independence between the two types of intelligence, that the EI clusters were not correlated with CT ability. The negative correlation between these two types of intelligences can be inferred that those individuals who are in the higher percentiles of CT are somewhat less engaged in building and maintaining relationships, the development of other people, and the demonstration of social and emotional interactions. Alternatively, CT taps those capabilities that are associated with problem definition, assumption recognition, and the formulation of hypotheses. These elements are more likely used for problem solving and less inclined towards the interpersonal dispositions.

Another way to reconcile the apparently contradictory results is to argue that individuals lower in CT may be more inclined to peruse social contexts than individuals with higher scores; perhaps compensating through social means.

5.2. Relationship between Big-five Personality Traits, CT and EI

Personality traits have a dynamic relationship with CT and EI abilities. According to the results there was a significant correlation between CT and personality traits of EFL students. Conscientiousness, openness to experience, and neuroticism were the best predictors of CT. CT skills involve the ability to identify and assess diverse arguments, make decisions and evaluate one's stance on particular issues. To carry out these tasks, individuals need to come into contact with multiple perspectives, practice cooperative thinking, experience interconnectedness, and analyze and interpret social, cultural and international perspectives. These social characteristics can be found in openness to experience, conscientiousness, and neuroticism personality traits. Also, according to the results neuroticism, conscientiousness, extroversion characteristics could predict high EI in EFL learners. These results suggested that personality factors can be an important factor in enhancing self-awareness of EFL learners toward fostering and using their EI capacity in learning new language.

6. Conclusion

Improving emotional intelligence and critical thinking skills are now considered as one the main goals in educational system in developing and developed countries. Based on the importance of personality traits in expanding and improving CT and EI skills, this study was designed to assess the correlation between personality traits with performance on CT and EI tests, with major emphasis on predicting EFL learners' CT and EI through their personality traits. The results suggested that there is a significant relation between personality traits and performance on EI and CT tests. Understanding EI and CT as a part of the broader personality system can alert researchers as to what aspects of personality may influence EI or CT, increase its effects, or lower them. Also, the results of this study may help curriculum designers and education providers to consider personality differences in the process of fostering EI and CT abilities in students, and consider these differences in designing teaching methods and materials for students with different personalities. Considering that personality factor, EI, and CT are associated with academic success, the combination of these three factors can be used as a stronger predictor of learning. So it is advised that educators should consider diversity of students' personality traits and their possible influences on fostering CT and EI, when designing learning and teaching materials.

References

- [1] A.L. Wenden and L. Rubin, "Learner strategies in language learning," Cambridge: Prentice Hall International, 1987.
- [2] L.K. Silverman, "Identifying visual-spatial and auditory-sequential learners: A validation study, in Talent development V: Proceedings from the 2000 Henry B. and Jocelyn Wallace National Research Symposium on Talent Development," N. Colangelo and S.G. Assouline, 2000.
- [3] T. Putintseva, "The Importance of Learning Styles in ESL/EFL," *The Internet TESL Journal*, vol. 7, no. 3, pp. 1-5, 2006.
- [4] J.D. Mayer, D.R. Caruso, and P. Salovey, "Emotional intelligence meets traditional standards for an intelligence," *Intelligence*, vol. 27, no. 4, pp. 267-298, 1999.
- [5] J.D. Mayer, P. Salovey, and D.R. Caruso, "Emotional intelligence as zeitgeist, as personality, and as a mental ability," *The handbook of emotional intelligence: theory, development, assessment, and application at home, school, and in the workplace*, R. Bar-On and J. Parker, Eds. Jossey-Bass: San Francisco, California, 2000.
- [6] J.D. Mayer, P. Salovey, and D.R. Caruso, "Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) Version 2.0," Toronto, Canada: Multi-Health System, 2002.
- [7] J.D. Mayer and P. Salovey, "What is emotional intelligence?," *Emotional development and emotional intelligence: educational implications*, P. Salovey and D. Sluyter, Eds. Basic Books: New York, 1997.
- [8] J.D. Mayer, P. Salovey, and D.R. Caruso, "Models of emotional intelligence," *Handbook of human intelligence*, R.J. Sternberg, Edt. Cambridge University Press: New York, 2002.
- [9] P. Salovey, and J.D. Mayer, "Emotional Intelligence". *Imagination, Cognition, and Personality*, vol. 9, no. 3, pp. 185-211, 1990.
- [10] D. Goleman, "Emotional Intelligence: Why It Can Matter More than IQ," London: Bloomsbury Publishing, 1996.
- [11] R.E Sutton and K.F. Wheatley, "Teachers' emotions and teaching: A review of the literature and directions for future research," *Educational Psychology Review*, vol. 15, no. 4, pp. 327-358, 2003.
- [12] M.A. Brackett and P. Salovey, "Measuring emotional intelligence as a mental ability with the Mayer-Salovey-Caruso Emotional Intelligence Test," *Measurement of Emotional Intelligence*, G. Gaher, Edt, Nova Science Publisher: New York, 2004.
- [13] J.D. Mayer, P. Salovey, and D.R. Caruso, "Emotional intelligence: Theory, findings, and implications," *Psychological Inquiry*, vol. 15, no. 3, pp. 197-215, 2004.
- [14] R. Berenson, G. Boyles, and A. Weaver, "Emotional Intelligence as a Predictor of Success in Online Learning," *The international Review of Research in Open and Distance Learning*, vol. 9, no. 2, 2008.
- [15] A. Ghanizadeh and F. Moafian, "The role of EFL teachers's emotional intelligence in their success," *ELT Journal*, vol. 64, no. 4, pp. 424-435, 2010.
- [16] B.T. Kealey, J. Holland, and M. Watson, "Preliminary Evidence on the Association between Critical Thinking and Performance in Principles of Accounting," *Issues in Accounting Education*, vol. 20, no. 1. pp. 33-49, 2005.
- [17] D.F Halpern, "Teaching critical thinking for transfer across domains: Disposition, skills, structure training, and metacognitive monitoring," *American Psychologist*, vol. 53, no. 4, pp. 449-455, 1998.
- [18] G.B. Watson and E.M. Glaser, "Watson-Glaser Critical Thinking Appraisal Manual. Forms A and B," San Antonio: The Psychological Corporation, 1980.

- [19] M. Fahim, M. Bagherkazemi, and M. Alemi, "The relationship between test takers' critical thinking ability and their performance on the reading section of TOEFL," *Journal of Language Teaching and Research*, vol. 1, no. 6, pp. 830-837, 2010.
- [20] B. Gorjian, A. Pazhakh, and K. Parang, "An Investigation on the Effect of Critical Thinking (CT) Instructions on Iranian EFL Learners' Descriptive Writing: A Case of Gender Study," *Advances in Asian Social Science*, vol. 1, no. 1, pp. 114-118, 2012.
- [21] P. Birjandi and M. Bagherkazemi, "The relationship between Iranian EFL teachers' critical thinking ability and their professional success," *English Language Teaching*, vol. 3, no. 2, pp. 135-145, 2010.
- [22] M. Jarvis, "The psychology of effective learning and teaching," London: Nelson Thornes Ltd, 2005.
- [23] R.R. McCrae, and A. Terracciano, "Universal features of personality traits from the observer's perspective: data from 50 cultures," *J Pers Soc Psychol*, vol. 88, no. 3, pp. 547-61, 2005.
- [24] M.J. Lubbers, VDMPC. Werf, H. Kuyper, A.A.J Hendriks. "Does homework behavior mediate the relation between personality and academic performance?," *Learning and Individual Differences*, vol. 3, no. 20, pp. 203-208, 2010.
- [25] M.F. Lee, R.S. Shariffudin, and N. Mislán, "Pattern and Relationship Between Multiple Intelligences, Personality Traits and Critical Thinking Skills Among High Achievers in Malaysia," *International Proceedings of Economics Development & Research*, vol. 27, 2012.
- [26] P.T. Costa Jr. and R.R. McCrae, "Professional manual for the revised NEO Personality Inventory (NEO-PI-R) and NEO Five Factor Inventory (NEO-FFI)," Odessa, Florida: Psychological Assessment Resources, 1992.
- [27] F.L. Schmidt and J.E. Hunter, "The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings," *Psychological Bulletin*, vol. 124, no. 2, pp. 262-274, 1998.
- [28] R. Bar-On, "The Bar-On Emotional Quotient Inventory (EQ-i): A test of emotional intelligence," Toronto, Canada: Multi-Health Systems, 1997.
- [29] P. Honey, "Critical Thinking Questionnaire," Peter Honey Publication, 2004.
- [30] A. Field, "Discovering Statistics Using SPSS," 3rd ed, London: SAGE, 2009.
- [31] L.F. Bachman, "Statistical Analysis for Language Assessment". 2nd ed, New York: Cambridge University Press, 2005.
- [32] N.L. Leech, K.C. Barrett, and A.M. George, "IBM SPSS for Intermediate Statistics: Use and Interpretation," London: Routledge, 2011.