

The Role of Personality Traits in Predicting EFL Learners' Critical Thinking Skills: A Study on Psychological Characteristics of EFL Learners

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Abstract: *This study examines the relationship among EFL students' five personality traits and predictability of their critical thinking ability. A group of 211 male and female students, between 20 and 30 years old, majoring in English Translation and English Literature, were randomly selected and given two questionnaires: The NEO-FFI, which provides measure of five well-established domains of personality, and Peter Honey Critical Thinking Appraisal to evaluate cognitive ability of students. According to the results, there was a significant relationship between CT and Domains of personality. Also running multiple regression revealed that conscientiousness can predict 4 percent of critical thinking score, Openness to experience can predict 7.2, and finally the third best predictor, neuroticism increased the predictive power to 9.8 percent So based on the obtained results, educators are advised to consider diversity of students' personality traits and their possible influences on fostering CT when designing learning and teaching materials.*

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

I. Introduction

Fostering critical thinking (CT) abilities among EFL students, especially graduate students has been considered as one of the main goals of high educational periods in the developed and developing countries [1]. Critical thinking skills such as evaluating results, concluding, and other related skills have been considered as one of the factors in predicting all students achievement [2-4], especially as a criteria in evaluating graduate students' achievements [5]. Some of theorists in the field of education suggested that individual differences and personality traits lead to differences in the critical thinking skills [6]. Regardless of formal plans and educational methods that are designed to improve critical thinking skills between the students, there are little researches and studies about the traits and characteristics that help students in acquiring their objectives and goals. On the other hand, acquiring some of information about students' personality traits and characteristics is necessary in developing effective plans in order to evaluating these skills.

1.1. Critical Thinking

To think critically is undeniably one of the major elements of "first class human capital" in a knowledge economy [7]. 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 [8]. Halpern [9] defined critical thinking as thinking, which performs through policies or cognitive skills that lead to increasing probability of acquiring desired outcome.

Watson and Glaser [2] believed that critical thinking is combination of individual knowledge, attitude, and performance. They also consider the following skills as critical skills to 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. Scriven and Paul [10] define critical thinking as, "that mode of thinking - about any subject, content, or problem - in which the thinker improves the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them." This definition includes an attitudinal element of volition, and self-efficacy, and the metacognitive skill of evaluating one's own thinking processes.

Some theorists in the field of education suggested that individual differences and personality traits lead to differences in the critical thinking skills [6]. Based on this it is seemed necessary study impact of personality traits on critical thinking skills between students, especially graduate students.

1.2. Big-five Personality Traits

The Big-five framework of personality traits [11] has emerged as a robust and parsimonious model for understanding the relationship between personality and various academic behaviors [12]. Personality refers to internal factors such as dispositions and interpersonal strategies that explain individual behaviors and the unique and relatively stable patterns of behaviors, thoughts, and emotions shown by individuals [12]. It was in the late 1980s that psychologists and researchers came to this point that in order to have a better understanding of the domain of personality, they ought to use a common language. Many psychologists reached the agreement that a five-factor model, which was referred to as the "Big Five", could describe personality. This model is based on adjectives, which describe the personality of an individual. The following is the five components of the Big Five:

Extraversion: The extraversion dimension captures one's comfort level with relationships. Extraverts tend to be gregarious, assertive, and sociable. Introverts tend to be reserved, timid, and quiet [13]. Extraversion categorizes by positive effects and emotions and can be seen as a positive sensation.

Agreeableness: The agreeableness dimension refers to an individual's propensity to defer to others. Highly agreeable people are cooperative, warm, and trusting. People who score low on agreeableness are cold, disagreeable, and antagonistic [13].

Conscientiousness: The conscientiousness dimension is a measure of reliability. A highly conscientious person is responsible, organized, dependable, and persistent. Those who score low on this dimension are easily distracted, disorganized, and unreliable [13]. But also conscientiousness dimension can be characterized by reliability, achievement-oriented, and orderly [14].

Emotional stability: The emotional stability dimension often labeled by its converse neuroticism-taps a person's ability to withstand stress. People with positive emotional stability tend to be calm, self-confident, and secure. Those with high negative scores tend to be nervous, anxious, depressed, and insecure [13]

Openness to experience: The openness to experience dimension addresses one's range of interests and fascination with novelty. Extremely open people are creative, curious, and artistically sensitive. Those at the other end of the openness category are conventional and find comfort in the familiar [13].

Teaching and learning methods can be designed and modified to produce students' excellent academic achievement by knowing their pattern of personality and critical thinking skills. Therefore, the purpose of this study was to identify patterns of personality and critical thinking among EFL learners. In line with the above purpose, this study tries to answer the following research questions:

1. Is there any significance relationship among EFL learners' CT and big-five personality traits?
2. Is there any significant difference in the predictability of EFL learners' big-five personality traits in terms of predicting their CT?

II. Methodology

2.1. Participants

Two hundred and eleven Iranian students, ranging between 20-30 years old, majoring in English Language Literature and English Language Teaching were randomly selected and given two questionnaires. The participants were almost evenly split between men (48.0%) and women (52.0%).

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 [11]. 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

2.2.2. Critical Thinking

Peter Honey [15] 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.

III. Procedure

A brief session with students studying at Islamic Azad University, at central Tehran was arranged. Students were informed that their performance on the test will not affect their final test results and their scores will be used for the purpose of research. The students were also assured for the confidentiality of the data

gathering procedure. After giving an oral instruction of how to perform on the questionnaires, participants received a package of research instruments containing the NEO-FFI, Honey's critical thinking questionnaire along with the written instructions for each form. Students answered each questionnaire in 15 minutes. In exchange for their participation, individuals were provided the opportunity to receive confidential feedback on their results on each of the questionnaires. In order to preserve confidentiality of the results, participants could code their papers with alphabet instead of their names; each questionnaire package was labeled with a 4-digit code to prevent misunderstanding of possible similar alphabet coding.

IV. Results

4.1. Correlation between Personality Traits and Critical Thinking

Table.1 displays the Pearson correlations between CT, and personality traits. There is a significant positive correlation between all personality traits and CT scores ($P < 0.05$) except for neuroticism, which shows a negative correlation with CT.

Table.1: Pearson Correlation Big-Five Personality Traits with Critical Thinking

| | | CT |
|------------------------|---------------------|--|
| Neuroticism | Pearson Correlation | -.189** |
| | Sig. (2-tailed) | .006 |
| | N | 211 |
| Extroversion | Pearson Correlation | .174* |
| | Sig. (2-tailed) | .012 |
| | N | 211 |
| Openness to experience | Pearson Correlation | .173* |
| | Sig. (2-tailed) | .012 |
| | N | 211 |
| Agreeableness | Pearson Correlation | .182** |
| | Sig. (2-tailed) | .008 |
| | N | 211 |
| Conscientiousness | Pearson Correlation | .201** |
| | Sig. (2-tailed) | .003 |
| | N | 211 |
| **. | | Correlation is significant at the 0.01 level (2-tailed). |
| *. | | Correlation is significant at the 0.05 level (2-tailed). |

4.2. Predictability of CT through personality traits

A multiple regression was run to probe the power of personality traits in predicting CT. As displayed in Table 2, 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 2: 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 3: 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 | | | | | | |

V. 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 and critical thinking directly from university EFL students. The data obtained in this research were developed from 211 EFL 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 five major domains of personality characteristics and cognitive abilities comprising CT. This study considered the novel idea to empirically test these two constructs with major emphasis on predictability of CT ability through big-five personality traits. 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. These results suggested that personality factors could be an important factor in enhancing self-awareness of EFL learners toward fostering and using their CT capacity in learning new language.

VI. Conclusion

Improving 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 skills, this study was designed to assess the correlation between personality traits with performance on CT tests, with major emphasis on predicting EFL learners' CT through their personality traits. The results suggested that there is a significant relation between personality traits and performance on CT tests. Understanding CT as a part of the broader personality system can alert researchers as to what aspects of personality may influence 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 CT abilities in students, and consider these differences in designing teaching methods and materials for students with different personalities.

Considering that personality factor and CT are associated with academic success, the combination of these two 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 when designing learning and teaching materials.

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