

Studying Impact of Personality Traits on Critical Thinking Skills (The Case of Graduate Students of University of Isfahan)

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ABSTRACT

Improving critical thinking skills among the students has been considered as one of the main goals of high educational periods in developed and developing countries. Some of the theorists in the field of education suggested that individual differences and personality traits influence critical thinking skills. The purpose of this study was to study impact of personality traits on critical thinking skills among the graduate students in University of Isfahan. The statistical population of this study was the graduate students of the University of Isfahan in the years of 2011-2012. Based on formula of sampling from limited population 160 of these students were selected as sample members. In order to collecting data the questionnaires with 46 items have been used. Then in order to examining reliability of the questionnaires content reliability has been used. Also Kidder-Richardson has been used to examining stability of the questionnaires and then its value was calculated 77% that was acceptable value. In order to analyzing data and concluding results descriptive statistic and inferential statistic were used and in order to this the ENTER method and Durbin-Watson method has been used. All of mentioned methods have been done in the SPSS18. The results of this study indicated that all of personality traits influenced critical thinking skills of the graduate students and also these traits totally explained 51% of critical thinking variance. Also Durbin-Watson results indicated there wasn't any auto-correlation between independent variables.

KEY WORDS: personality, personality traits, critical thinking skills, University of Isfahan.

1. INTRODUCTION

Improvement of critical thinking skills among students' especially graduate students considered as one of the main goals of high educational periods in the developed and developing countries [6]. Different studies and researches that have been done in the field of education resulted that the skills of critical thinking such as evaluating results, concluding, and other related skills considered as one of the instruments to predicting all students achievement [1], [15], [16], and especially as one of the criteria to evaluating graduate students achievements [7]. In the recent years necessity of developing plans to improve critical thinking skills between students especially graduate students considered as one of the main goals of high educational periods in the developed and developing countries [6]. In order to acquiring this goal, many researchers and authors in the field of educational administration in different universities and colleges strived to developing plans to improve critical thinking skills between the students. Finally demand for standard criteria of critical thinking skills between the students increased to evaluating degree of achievement of these plans. Regardless of formal plans and educational methods that designed to improving critical thinking skills between the students, there are little researches and studies about the traits and characteristics that help to students acquiring their objectives and goals. On the other hand acquiring some of information about students' personality traits and characteristics is necessary to developing effective plans in order to evaluating these skills. Halonen (1995) defined critical thinking skills as the set of prominent cognitive abilities. The standard plans to develop and expanding critical thinking skills concentrated on teaching the skills of rationalization and reasoning [9]. Some of theorists in the field of education suggested that individual differences and personality traits lead to differences in the critical thinking skills [5].

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2. Critical Thinking

The history of critical thinking goes back to thinkers such as Aquinas, Biken, Descartes, Newton, and Kant. Some of them such as Lipman believed that the phenomenon of critical thinking is related to authors of 1950's. The modern theory of critical thinking in nowadays shape started from 1980's. Also attention to developing critical thinking skills aren't new phenomenon and some thinkers such as Mayers believed that the generation of critical thinking related to Plato's academy. Halpern (1996) defined critical thinking as thinking which performs through policies or cognitive skills that lead to increasing probability of acquiring desired outcome [10]. Also Alder & Pal defined critical thinking as the ability to admission responsibility of self-thinking's' outcomes. In fact critical thinking is the art of thinking about your circumference in order to improving thinking. Watson & Glierz (1980) believed that critical thinking is combination of individual knowledge, attitude, and performance [16]. 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. Also Halogen (1995) defined critical thinking skills as the set of prominent cognitive abilities [10]. The standard plans to developing and expanding critical thinking skills concentrated on teaching skills of rationalization and reasoning. Some of theorists in the field of education suggested that individual differences and personality traits lead to differences in the critical thinking skills [5]. Based on this it is seemed necessary to studying impact of personality traits on critical thinking skills between students especially graduate students.

3. Personality Traits

Some researchers believed that almost all dimensions of personality should be categorize through big five model's dimensions. [3], [4],[8], [11] It is seemed that big five model's dimensions are different in various cultures. [12] But also some other studies indicate that big five models' dimensions have genetic themes and that probably are congenital. [14] The dimensions of this model including extroversion, Agreeableness, Conscientiousness, Neuroticism, and Openness that has been offered in following section. [13]

- **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. [2]
- **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]

As mentioned in the previous sections the purpose of this article was to studying impacts of personality traits on critical thinking skills between the graduate students of the University of Isfahan. Therefore the hypothesis has been formulated as following.

Main Hypothesis: Students' personality traits influence their critical thinking skills.

Hypothesis 1: Students' extraversion trait influences their critical thinking skills.

Hypothesis 2: Students' agreeableness trait influences their critical thinking skills.

Hypothesis 3: Students' conscientiousness trait influences their critical thinking skills.

Hypothesis 4: Students' emotional stability trait influences their critical thinking skills.

Hypothesis 5: Students' openness to experience trait influences their critical thinking skills.

4. RESEARCH METHODOLOGY

As mentioned previously, this article was aimed to studying impact of personality traits on the graduate students' critical thinking skills. In order to collecting data the questionnaire with 50 items (26 items about critical thinking skills and 24 items about personality traits) has been used. In order to examining reliability of

questionnaires content reliability has been used and then the reliability of the questionnaire after some reforms and corrections has been accepted. Then in order to examining stability of questionnaires Cronbachs' Alpha has been used. The results of Cronbachs' Alpha indicated each of the research variables including extraversion, consciousness, agreeableness, emotional stability, openness to experience, and critical thinking skills 75%, 80%, 74%, 73%, 70%, and 77%. Statistical population of this study was the University of Isfahan's graduate students and sample size determined 160 of them and selected based on convenience sampling method. In order to analyzing data and concluding results descriptive statistic, inferential statistics, regression analysis, and Durbin-Watson test has been used in SPSS18. The regression analysis has been used to determining impact of each personality traits on critical thinking skills, and Durbin-Watson test used to determining that whether there is auto-correlation between independent variables or not.

5. DISCUSSION

In order to analyzing the main hypothesis that aims personality traits influence critical thinking skills, the sig level is 0/000 (table 1) indicated that the regression model is significant. As we know Durbin-Watson factor should be between 1.7-2.1 to conclude that there is no self-correlation between independent variables. So Durbin-Watson factor (1.77) indicated there is no self-correlation between independent variables (personality traits). The results indicated that personality traits explained 0.353 of variance of the critical thinking skills. Based on this the main hypothesis was accepted and it is resulted that personality traits influenced critical thinking skills between the graduate students of university of Isfahan. Summary of this hypothesis has been indicated at the table 1.

Table 1: summary of the main hypothesis

variable	R ²	Durbin-Watson	sig	MH
value	0.353	1.77	0/000	accepted

So the first hypothesis indicated that Students' extraversion trait influences their critical thinking skills. As indicated at the table 2 sig level of this hypothesis is 0.000 and this indicated that the regression model is significant. Durbin-Watson factor (1.739) indicated there is no self-correlation between independent variables (personality traits). The results indicated that extraversion trait explained 0.152 of variance of critical thinking skills. Based on this the first hypothesis was accepted and it is resulted that graduate students' extraversion trait influence their critical thinking skills. So it is remembered that the graduate students who are extraverted could have better critical thinking skills, because they can share their information with other peoples and their friends and this help them to have better critical thinking. Summary of this hypothesis has been indicated at the table 2. The second hypothesis indicated that Students' agreeableness trait influences their critical thinking skills. As indicated at the table 2 sig level of this hypothesis is 0.000 and this indicated that the regression model is significant. Durbin-Watson factor (1.757) indicated there is no self-correlation between independent variables (personality traits). The results indicated that agreeableness trait explained 0.194 of variance of critical thinking skills. Based on this, the second hypothesis was accepted and it is resulted that graduate students' agreeableness trait influences their critical thinking skills. Based on this finding it is resulted that the graduate students who are agreeableness can have better critical thinking skills, because they can contact with others easily and this help them to sharing their information with others and finally have better critical thinking skills. Summary of this hypothesis has been indicated at the table 2. The third hypothesis aims that Students' consciousness trait influences their critical thinking skills. As indicated at the table 2 sig level of this hypothesis is 0.000 and this indicates that the regression model is significant. Durbin-Watson factor (1.718) indicated there is no self-correlation between independent variables (personality traits). The results indicated that consciousness trait explained 0.229 of variance of critical thinking skills. Based on this the third hypothesis was accepted and it is resulted that graduate students' consciousness trait influence their critical thinking skills. Therefore it is resulted that the graduate students who are consciousness can have better critical thinking, because they are sensitive to their affaires and this motivate them to pursuing their work and resulting it, so when they have such traits can have better critical thinking, because critical thinking skills need to pursuing and consciousness. Summary of this hypothesis has been indicated at the table 2. The fourth hypothesis indicated that Students' emotional stability trait influences their critical thinking skills. As indicated at the table 2 sig level of this hypothesis is 0.000 and this indicates that the regression model is significant. Durbin-Watson factor (1.718) indicated there is no self-correlation between independent variables (personality traits). The results indicated that emotional stability trait explained 0.038 of variance of critical thinking skills. Based on this the fourth hypothesis was accepted and it is resulted that graduate students' emotional stability trait influence their critical thinking skills. Therefore it is

concluded that the graduate students who can have better emotional stability then have better critical thing, because who have emotional stability can contact other easily (because he/she appreciate others and emphasize with them) and then can have better critical thing and easily learn its skills. Summary of this hypothesis has been indicated at the table 2. Finally fifth hypothesis indicated that Students' openness to experience trait influences their critical thinking skills. As indicated at the table 2 sig level of this hypothesis is 0.000 and this indicated that the regression model is significant. Durbin-Watson factor (1.971) indicated there is no self-correlation between independent variables (personality traits). The results indicated that openness to experience trait explained 0.164 of variance of critical thinking skills. Based on this the fifth hypothesis was accepted and it is resulted that graduate students' openness to experience trait influence their critical thinking skills. Therefore it is should remembered that the graduate students who are openness to experience can have better critical thinking skills, because such students are able to learning and have ability to deduction and inferring and then this motivate them to have and learn better critical thinking. Summary of this hypothesis has been indicated at the table 2.

Table 2: summary of hypotheses

Hypotheses	Items	Standard deviation	R ²	Durbin-Watson	Sig
	Personality traits				
H1	Extraversion	0.422	0.152	1.739	0.000
H2	Agreeableness	0.411	0.194	1.757	0.000
H3	Conscientiousness	0.402	0.229	1.718	0.000
H4	Emotional stability	0.449	0.038	1.718	0.000
H5	Openness to experience	0.418	0.164	1.971	0.000

6. Conclusion

Improvement of critical thinking skills among students considered as one of the main goals of high educational periods in developed and developing of countries. Some of the theorists in the field of education suggested that individual differences could influence critical thinking skills and this derived from cognitive abilities and students' personality traits. Based on the importance of personality traits that is one of the most important factors in expanding and improving critical thinking skills, the purpose of this study was to studying impact of personality traits on critical thinking skills between the graduate students in the University of Isfahan. In this study the personality traits (based on the big five model) include: extraversion, emotional stability, conscientiousness, agreeableness, and openness to experience. The statistical population of this study was the graduate students of the University of Isfahan in the years of 2011-2012. Based on formula of sampling from limited population 160 of these students were selected as sample members by convenience sampling method. In order to collecting data the questionnaires with 46 items have been used. Then in order to examining reliability of the questionnaires content reliability has been used. Also Kidder-Richardson has been used to examining stability of the questionnaires and then its value was calculated 77% that was acceptable value. In order to analyzing data and concluding results descriptive statistic and inferential statistic were used and in order to this the ENTER method and Durbin-Watson method has been used. All of mentioned methods have been done in the SPSS18. The results of this study indicated that all of personality traits influenced critical thinking skills of the graduate students and also these traits overly explained 51% of critical thinking variance. Also Durbin-Watson results indicated there wasn't any auto-correlation among independent variables. Therefore all of the mentioned five personality traits influenced critical thinking skills it is suggested to universities managers and related professions to reinforce their students personality traits. As indicated in the discussion section the conscientiousness trait influenced critical thinking skills more than other four personality traits so universities managers and related professions should attend to this trait and reinforce it between the graduate students.

7. Empirical suggestions and research limitations

With respect to the result of first hypothesis, there is significant positive correlation between extraversion and critical thinking skills and it explained 0.152 of variance of critical thinking skills. Therefore it is concluded that because extraversion student are able to communicating with others and interacting them, so they can share their information with others and discuss with them to improving this. So it is suggested that universities' professionals and managers concentrate on this trait and promote it among students to improving critical thinking skills among

them. Based on the result of second hypothesis, there is significant positive correlation between agreeableness and critical thinking skills and this personality trait explained 0.194 of variance of critical thinking skills. Therefore it is concluded that because agreeableness student are able to communicating with others and listening their opinions them, so they can share their information with others and discuss with them to improving this. So it is suggested that universities' professionals and managers concentrate on this trait and promote it among students to improving critical thinking skills among them. The result of third hypothesis indicated that there is significant positive correlation between consciousness and critical thinking skills and this personality trait explained 0.229 of variance of critical thinking skills. Therefore it is concluded that because consciousness students are able to performing their functions and then this motivate them to pursuing their affaires, so they motivated to share their information with others and discuss with them to improving this skills. So it is suggested that universities' professionals and managers concentrate on this trait and promote it among students to improving critical thinking skills among them. The result of forth hypothesis indicated that there is significant positive correlation between emotional stability and critical thinking skills and this personality trait explained 0.038 of variance of critical thinking skills. Therefore it is concluded that because students with high emotional stability are interest to communicating with others and perception them, so they motivated to share their information with others and discuss with them to improving this skills. So it is suggested that universities' professionals and managers concentrate on this trait and promote it among students to improving critical thinking skills among them. The result of fifth hypothesis indicated that there is significant positive correlation between openness to experience and critical thinking skills and this personality trait explained 0.164 of variance of critical thinking skills. Therefore it is concluded that because students with high tendency of openness to experience are interest to communicating with others and learning new things from others, so they motivated to share their information with others and communicating with them to improving this skills. So it is suggested that universities' professionals and managers concentrate on this trait and promote it among students to improving critical thinking skills among them.

One of the important limitation of this study was that conducted only among graduate student, if this conducted among all of students in university of Isfahan and its results compared then it expected that there are different methods to improving critical thinking skills among student than graduate students. Also if this study was conducted among male and female student, then comparing their differences indicated what personality traits was important to improving critical thinking skills among male and female students. Also our study wasn't concentrated on different academic fields, but if differences between students in different field could determine, then universities' professionals and managers be able to concentrating on different personality traits to improving critical thinking skills.

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