The Causal Relationship between HEXACO Personality Traits and English Language Anxiety with the Mediating Role of Positive Academic Emotions in Students

Fatemeh Hassanzadeh,
PhD Candidate in Educational Psychology, Babol Branch, Islamic Azad University, Babol, Iran.
Alireza Homayouni, Ph.D.
Department of Psychology, Bandar-e-Gaz Branch, Islamic Azad University, Bandar-e-Gaz, Iran
Jamal Sadeghi, Ph.D.
Nabiullah Akbar Nataj Shob, Ph.D.
Department of Psychology, Babol Branch, Islamic Azad University, Babol, Iran.

Abstract

Emotions are the primary source of motivation and movement in humanbeings. Positive emotions help maintain and guide responses and behaviors. These emotional experiences, in academic situations, play an important role in shaping students' judgments, decisions, priorities, and behaviors by providing basic information. The aim of this study was to investigate the causal relationship between Hexaco personality traits and English language anxiety with the mediating role of positive academic emotions in students. This study was applied in terms of purpose, and considering how information and data were collected, it was descriptive-correlational.The statistical population included all 525 ninth grade female students of 10 public girl's junior high schools in Babol, in the academic year 2020-2021. Using Krejcie and Morgan (1970) Table, 225 students were selected as the research sample through simple random sampling method. The instruments of the study included the HEXACO Personality Traits Questionnaire (De Vries & Van Gelder, 2013), Positive Academic Emotions Questionnaire (Pekrun et al., 2005), and English Language Anxiety Inventory (ALI, 2017).To analyze the data, Kaiser-Meyer-Olkin test, Bartlett's test, correlation coefficient, regression, path analysis and structural equation modeling were used. The research model showed a very good fit.The findings showed that there is a significant relationship between the students' personality traits, positive academic emotions and English language anxiety. In addition, personality traits and positive academic emotions have a direct effect on students' English language anxiety. Also, personality traits have a significant effect on students' English language anxiety through the mediating role of positive academic emotions. Given that personality traits and positive academic emotions can predict students 'English language anxiety, it is suggested that cognitive and emotional factors be considered to improve students' academic performance.

Keywords: English language anxiety, Personality traits, Positive academic emotions

Corresponding Author: Homayouni
Email: homayouni.ar@gmail.com

Introduction

Language is the most important communication and cognitive tool. This tool, in addition to the development of mass communication, has an important role in the development of various sciences in societies. Language is a proper tool, through which the transfer of views and opinions is easily performed (Asmali, 2017). Through using a language, in addition to creating communication, a fundamental change in the course of people's lives occurs (Bayat et al., 2015).

On the other hand, the process of learning a second language is always accompanied by effort and some anxiety (ALI, 2017). English is one of the languages in the world mostly learned as the second language. The difficulty of learning this language and its dialects leads to anxious conditions, which is referred to as "English language anxiety" (Sevinç & Dewaele, 2018). Experiencing English anxiety may occur in learning a particular language skill (Thompson & Lee, 2014). In English language anxiety, when speaking, listening and learning English, a person suffers from stress and feelings of tension (Soleimani, et al., 2019). Many people are eager to learn English and are interested in taking a step towards learning English but they do not know where to start and what to do. Such issues can also cause anxiety in the early stages of language learning (Tianjian, 2010).

The experience of these types of anxiety is a function of the social components of personality, such as extroversion. These components have a positive effect on the formation of cognitions and behaviors and have a significant role in shaping the structure of personality traits (Babakhouya, 2019). Personality traits are a set of cognitions, behaviors, and ways of thinking that emerge in the form of uniqueness, stability, and predictability (De Vries & Van Gelder, 2013). Hence, there is a significant relationship between personality traits, learning and learning anxiety (Van Niejenhuis et al., 2018). Anxious behaviors are rooted in stable personality traits (Vural, 2019) and components of personality traits indicate the influence of emotional factors on learning (Khouya, 2018). Thus, there is a significant relationship between personality traits and English language anxiety (Homayouni, & Homayouni, 2018). Also, there is a significant relationship between English language anxiety and the Big Five Personality Traits (Khouya, 2018).

Emotions are a feature of mental structure and play an important role in a person's adaptation to stressful situations, such as learning English language (Chao, 2003). In the meantime, positive emotions help to form a sense of enjoyment, hope and pride (Yang et al., 2020). In academic situations, positive emotions affect the learning process and the appropriate learning experience (Goodall, 2015). Thus, positive emotions, by facilitating and increasing the motivation to learn, play a key role in the development of students' appropriate academic performance (MacIntyre & Vincze, 2017). In this regard, the Big Five Personality Traits predict positive and negative academic emotions. In this way, neuroticism is a negative predictor and extraversion is a positive predictor (Hosseini, 2019).

Considering the role of positive and negative emotions in the process of learning English, the level of emotions of learners is one of the causes of anxiety in the process of learning English (Tabatabai Farani et al., 2019). In general, in the classroom, cognitive emotions have a great impact on learning English vocabulary (Liang, 2020). Also, it is found that there is a significant relationship between achievement motivation, emotional intelligence and English language anxiety of students (Farsian et al., 2015). In addition, the classroom environment and emotional intelligence predict English language anxiety (Li et al., 2020). Accordingly, the relationship between negative emotions and anxiety can be conceptualized in the form of a two-part model. In this model, people with high levels of negative emotions are more likely to develop anxiety as a coping mechanism (Ataç & Yildirim, 2010).

According to the above literature, the conceptual model of the study is presented (Figure 1). Considering the importance of learning English in interactions and all aspects of life in today's world, as well as the importance of learning English in cognitive and behavioral processes and the need to remove barriers to progress in learning English, this study sought to examine the psychological variables involved in English language anxiety in the form of a model. Therefore, the main issue of the research was to investigate the mediating role of positive academic emotions in the relationship between personality traits and students' English anxiety.

Figure 1.
The Study Conceptual Model
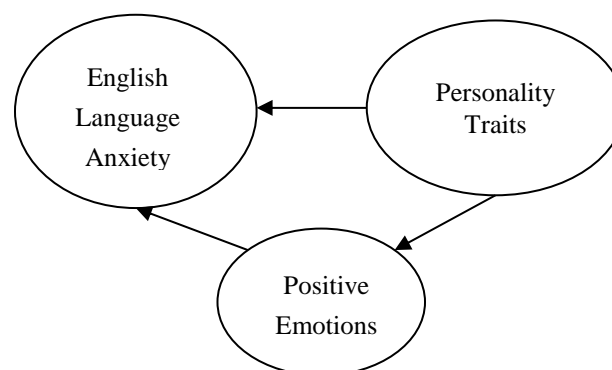
Method

Design of the Study

The present study is applied in terms of purpose and considering the information and data collection procedure, it is descriptive-correlational.

Participants

The statistical population included all 525 female students of 10 public junior high schools in Babol, the ninth grade, in the academic year 2020-2021. Using Krejcie and Morgan (1970) Table, 225 students were selected as the research sample through simple random sampling method.

Instruments

In this study, the following questionnaires were used:

HEXACO Personality Traits Questionnaire: Based on HEXACO models, the short form of HEXACO Personality Traits Questionnaire was designed by De Vries and Van Gelder (2013). This questionnaire has 24 questions and 6 dimensions. The dimensions of the questionnaire are: honesty and humility (questions 24, 18, 12 and 6); emotionality (questions 23, 17, 11 and 5), extroversion (questions 22, 16, 10 and 4), agreeableness (questions 21, 15, 9 and 3), conscientiousness (questions 20, 14, 8 and 2), and openness to experience (questions 19, 13, 7 and 1). As can be seen, each of the dimensions includes four questions. This questionnaire was developed on a 5-point Likert scale (from completely disagree (1) to completely agree (5)). In De Vries and Van Gelder's studies (2013), the construct validity is confirmed and each of the dimensions has shown a reliability of more than .80. Also, the reliability between the short and the long forms of HEXACO Personality Traits Questionnaire obtained through parallel and test-retest reliability methods confirmed to be acceptable. In Iran, Basharpour, et al. (2018) also confirmed the construct validity of this questionnaire and reported Cronbach's alpha coefficient for the six dimensions of the questionnaire to be in the range of .78 to .94. In the present study, the reliability of the questionnaire dimensions obtained through Cronbach's alpha was between .72 and .82.

Academic Emotions Questionnaire: Academic Emotions Questionnaire was developed by Pekrun, Götz and Perry (2005). This questionnaire was desined to assess the positive academic emotions of students consisting of 75 questions about learning excitement (enjoyment, hope and pride). This questionnaire was made on a 5-point Likert scale and its construct and content validity is verified by the designers. Also, its reliability through Cronbach's alpha was reported .75. In

Iran, the questionnaire was also standardized by Kadivar et al. (2010), its construct validity as well as concurrent validity is confirmed; and its reliability through Cronbach's alpha method for the components of enjoyment, hope and pride was estimated .87, .81 and .79, respectively. In the present study, using Cronbach's alpha method, the total reliability was .83, and the reliability of the emotions of enjoyment, hope and pride was estimated as .82, .79 and .81, respectively.

English language Anxiety Inventory: This questionnaire was developed by ALI (2017). The questionnaire has 32 questions on a 5-point Likert scale (completely disagree (1) to completely agree (5)). The questionnaire includes four subscales of speaking anxiety, writing anxiety, reading anxiety and listening anxiety. Each subscale has 8 questions and the minimum total score is 32 and the maximum score is 160, and a high score indicates a bad situation. Using the Cronbach's alpha method, the reliability coefficient of the whole questionnaire was .90. Also, the reliability of the subscales of speaking anxiety, writing anxiety, reading anxiety and listening anxiety were estimated to be .84, .84, .84 and .83, respectively. In the present study, the construct validity as well the concurrent validity of the questionnaire were confirmed and the total reliability of the questionnaire was .80 estimated using Cronbach's alpha. Furthermore, the reliability of the subscales of speaking anxiety, writing anxiety, reading anxiety and listening anxiety were .72, .79, .72, and .78, respectively.

Procedure

Before conducting the research, the purpose of the research was explained to the participants and they were assured their information would be kept confidential. Also, an informed consent was obtained from the participants in the research. Then, the Personality Traits Questionnaire, Academic Emotions Questionnaire and English Language Anxiety Questionnaire were administered to the participants online. Then, in order to analyze tha data, Kaiser-Meyer-Olkin test, Bartlett's test, correlation coefficient, regression, path analysis and structural equation modeling were applied using SPSS and Amos software, version 24.

Findings

Kolmogorov-Smirnov test was used to evaluate the normality of the distribution of the research variables. Table 1 shows the results of the Kolmogorov-Smirnov test.

Table 1.

Results of Kolmogorov-Smirnov Test

Research Variables	Kolmogorov-Smirnov test values	Test Result
The Personality Traits Questionnaire	.051	Normal
The Academic Emotions Questionnaire	.078	Normal
The English Anxiety Questionnaire	.062	Normal

Considering the information in Table 1 and considering that the level of significance of research data is greater than 0.05, therefore, research data have a normal distribution and therefore, parametric tests can be used.

Table 2 shows the interrelationships between personality traits, academic emtions, and English language anxiety.

Table 2.

Interrelationships between Personality Traits, Academic Excitement, and English Language Anxiety

Variables	Personality Traits	Academic Emotions	English Language Anxiety	Df	Sig.
Personality Traits	1	.286		273	.000
Academic Emotions	.286	1		273	.000
English Language Anxiety	.535-	.233-	1	273	.000

The level of significance is $P<0.01$

Considering that the absolute value of the calculated correlation coefficients (-0.535, -0.223, and 0.286) is greater than the correlation coefficient of the table with degrees of freedom (n-2 = 223) and the significance level of 99% (.181), so with 99% confidence, the null hypothesis is rejected. Considering the rejection of the null hypothesis, with 99% confidence it can be claimed that there is a statistical significant relationship between the study variables.

Table 3 shows that .28 percent of the variance related to personality traits and academic emtions is explained by English language anxiety performance. Also, the value of the Durbin-Watson statistic is between 1.5 and 2.5, which indicates that the observations are independent. Accordingly, the results of Table 3 show that the assumption of predictability of the observations exist.

Table 3.

Summary of the Correlation Coefficient, Coefficient of Determination and Square of Variables between Personality Traits, Academic Emotions and English Language Anxiety

Predictor Variables	(R)	(R^2)	Adjusted R^2	SEM	Durbin-Watson Statistic
Personality Traits and Academic Emotions	.542	.293	.287	8.325	1.778

The results of the regression analysis in Table 4 show that F observed is 47.954. Given that the F observed (47.954) with the degrees of freedom of 2 and 222 and at the significance level of = 0.01 is greater than the critical F in the Table (4.71), therefore, it can be

concluded that with 99% confidence interval, the regression model is significant. In other words, personality traits and academic excitement can predict students' English language anxiety in one step.

Table 4.

Summary of the Step-By-Step Regression Model of Personality Traits, Academic Emotions, and English Language Anxiety

Predictor Variable	Model	Sum of Squares	df	Mean Squares	F	Sig.
English Language Anxiety	Regression	6647.675	2	3323.837	47.954	**.000**
	Residual	16011/334	222	69.313		

Table 5 summarizes the statistical characteristics of stepwise regression analysis of personality traits, academic emotions, and English language anxiety.

Table 5.
Summary of the Stepwise Regression Statistical Characteristics of Personality Traits, Academic Emotions, and English Language Anxiety

	Unstandardized Coefficients		Standardized Coefficients	t	P
	B	Std error	Beta		
Constant	157.288	7.756		20.279	.000
Personality Traits	.943-	0.107	-.510	-8.841	.000
Academic Emotions	-.073	0.048	-0.087	-1.508	.000

The results of the regression coefficients of the predictor variable indicate that personality traits (β = -0.510; t = - 8.841) and academic emotions (β = -0.087; t = -1.508) can explain the variance of English language anxiety of students.

$Y = ax1 + bx2 + cx3 = 157.288+-0.943+-0.073$
Also, the path analysis direction and the validity of the final research model were examined. The results of the path analysis test are presented in Tables 6 and 7 and its conceptual model is presented in Figure 2.

Table 6.
Direct Model Estimation with Maximum Likelihood (ML) Method

Variable	b	β	R^2	t- statisitc	P
Personality Traits to English Language Anxiety	-0.551	-0.446	0.245	3.991	.001
Positive Accademic Emotions to English Language Anxiety	-0.391	-0.292	0.114	2.946	.001

According to the results of Table 6, it is concluded that exogenous variables (personality traits and academic emotions) have a significant effect on the endogenous variable (English language anxiety).

Table 7.
*Indirect Estimation of the Model Using the Bootstrap Method*

Variable	B	R^2	Lower	Upper	P-value
Personality Traits on English Language Anxiety with the mediation of Positive Academic Emotions	-0.503	-0.409	-0.628	-0.453	0.000

According to the results of Table 7, through the bootstrap estimation method, personality traits affect English language anxiety through the mediating role of positive academic emotions.

Figure 2.
The Final Model with Standardized Predicted Values
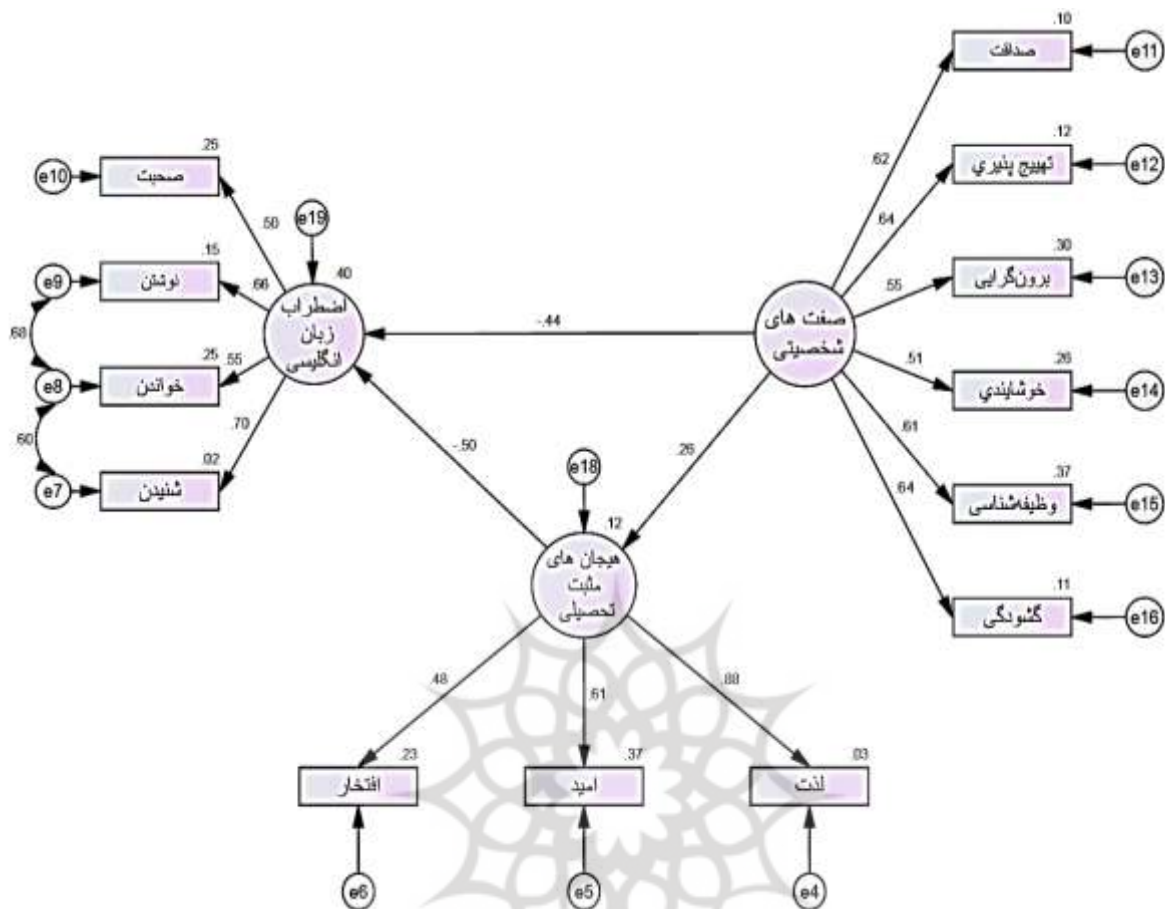
According to the estimation of the second order factor analysis fit indices, the value of the second root index of the average of the remaining squares is equal to .036. Because this value is less than 0.08, it is therefore acceptable. Also, the ratio of chi-square to degree of freedom is equal to 2.422, and because this ratio is less than 4, it has an acceptable fit. In addition, the Good Fit Index, the Comparative Fit Index, and the Normed fit index are greater than 0.90, indicating that the final model has a very good fit. Table 8 summarizes the results of the second-order confirmatory factor analysis fit indices.

Table 8.
Confirmatory Indices of the Second Order Confirmatory Factor Analysis

Fit Indices	Indicator	Estimate	Level of Acceptance	Result
Chi-Square/df	CMIN/DF	2.422	Less than 4	Good fit
Root Mean Square Error of Approximation	RMSEA	0.036	Less than 0.08	Good fit
Goodness of Fit Index	GFI	0.993	More than 0.90	Good fit
Comparative Fit Index	CFI	0.990	More than 0.90	Good Fit
Normed Fit Index	NFI	0.998	More than 0.90	Good Fit

Discussion

The aim of this study was to investigate the causal relationship between HEXACO personality traits and English language anxiety with the mediating role of positive academic emotions in female ninth grade high school students in Babol. The study findings showed that personality traits have an indirect effect on students'

English language anxiety through the mediation of positive academic emotions. There is also a significant relationship between students' personality traits, positive academic emotions and English language anxiety. In addition, personality traits and positive academic emotions can predict students' English anxiety. The results of the present study are consistant with those of Hosseini (2019), Homayouni and Homayouni (2018), Liang (2020), and Khouya (2018).

In explaining the research results, it can be stated that personality traits affect different aspects of people's lives. In this regard, sociologists and psychologists believe that students' personality traits are influenced by the environment and society. Such interactions affect students' attitudes, beliefs and even motivations in a complex way (Bahrudin & Amir, 2019). Personality traits, such as extraversion, conscientiousness, and openness to experience, help English learners gain a better understanding of their characteristics. As a result, learners become more aware of their abilities and adapt to the environment. It also makes these learners strengthen their abilities and have more flexibility in the face of change (Hanafi, Afghari, & Koosha, 2019).

From one hand, these types of learners are highly motivated, and their learning function is to reduce English learning anxiety. On the other hand, appropriate personality traits have private (personal) and social benefits, such as overcoming obstacles, reaching standards, competing with others, and surpassing them (Bahrudin & Amir, 2018). With these personality traits, students move toward greater success, mobility, and satisfaction, and enjoy positive academic excitement, such as hope and pride. Obviously, a person with these characteristics is less likely to suffer from anxiety and stress (Hosseini, 2019).

Students with appropriate personality traits, such as honesty and openness to experience, are motivated to progress and they are motivated to succeed. These students are aroused with the least anxiety due to failure and reinforce positive academic emotions. This, in turn, is a factor in reducing anxiety and eliminating the effects of the negative experience of anxiety in students (MacIntyre & Vincze, 2017).

Conclusion

Appropriate personality traits, by stimulating positive academic emotions, lead to appropriate thoughts and beliefs and enhance learning. Students with these personality traits do not avoid homework due to their low level of anxiety, rather, they have a participatory behavior and are more involved in doing assignments (Tabatabai Farani et al., 2019). Positive academic emotions prevent a person from losing focus on a task.

There is a direct interaction between positive academic emotions and personality traits. In fact, positive academic emotions are a factor in avoiding distractions (Goodall, 2015).

Positive academic emotions have an intrinsic effect on students' inner and outer thoughts. In other words, students who have appropriate personality traits spontaneously evoke learning-related thoughts while raising positive academic emotions. This psychological function leads to learning and reduces English language anxiety. Therefore, this mechanism leads to higher capacity and performance than expected, and as a result, anxiety is reduced. In this interactive cycle, English language learning increases again. This is because students systematically use cognitive strategies while studying and learning to reduce anxiety (Liang, 2020). As mentioned, in this interactive cycle, language learning increases and anxiety decreases.

In contrast, students with inappropriate personality traits have an anxious perception of learning English in all reading, writing, speaking, and listening skills. This type of perception causes negative emotions to be evoked and by creating a vicious cycle, in addition to increasing anxiety, leads to a decrease in positive emotions. As a result, hope is reduced and hatred is formed in students (Tabatabai Farani et al., 2019).

The present study, like all other studies, had some limitations. The most important limitations of this study were the limitations in the selection of the population and the statistical sample, and the occurrence of corona epidemic which limited the study administration conditions. Accordingly, it is suggested that, in order to increase the generalizability, other population with different age and gender be studied under normal circumstances.

Considering the effect of personality traits and positive academic emotions on reducing English language anxiety, it is suggested that cognitive-emotional techniques, such as rewarding and emotional relationships, be considered to reduce English language anxiety.

Conflicts of interest

The authors declared no conflicts of interest.

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