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THE MEDIATING ROLE OF COGNITIVE FLEXIBILITY BETWEEN FOREIGN LANGUAGE LEARNING MOTIVATION AND FOREIGN LANGUAGE ANXIETY OF UNIVERSITY PREPARATORY SCHOOL STUDENTS.

Research article

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Abstract

The aim of this study is to reveal the mediating role of cognitive flexibility of university preparatory students between their foreign language learning motivation and foreign language anxiety. The sample of the study consists of 314 volunteer students over the age of 18 and from different language levels who are studying in the English preparatory program of the Department of Foreign Languages of Eskişehir Osmangazi University in the spring term of the 2018-2019 academic year. The data of the study were collected with the "Foreign language classroom anxiety scale FLCAS)", "Cognitive flexibility inventory (CFI)", "Foreign language learning motivation scale (FLLMS)". According to the mediation test findings; It has been found that cognitive flexibility has a statistically full mediator role in the relationship between Foreign Language Learning Motivation and foreign language anxiety. Accordingly, foreign language learning motivation negatively predicts foreign language anxiety through cognitive flexibility. Preparatory students with high motivation to learn foreign languages also have high cognitive flexibility and as a result, their foreign language anxiety is lower.

Keywords: Foreign language preparation, motivation, language learning anxiety, cognitive flexibility

1.Introduction

One of the most important problems that arise with globalization, which can be defined as the economic, political, social and communicative convergence of people around the world, is the emergence of the need to communicate through a common language. To address this problem, English has become the common language in the 21st century and the number of people who speak English in the world has exceeded one billion (Crystal, 2003, p. 11). In order to increase the number of people that can speak at least one foreign language in Turkey, English courses are included in the curriculum of the National Education starting from primary education until the last year of secondary education, but especially in the last years of high school education, students enter the process of preparing for the university exam, which causes them not to show the necessary importance to the English lesson and their language level to go further. These students, who do not have a sufficient level of English at the beginning of their university education, may have to attend a foreign language preparatory class to reach the proficiency level determined by the university they prefer before moving on to the department education, depending on the condition that the

department they have chosen offers English education. Students who cannot successfully complete the foreign language preparatory class in many universities cannot continue their education, and this uncertainty they experience during the preparatory education process causes them to feel anxiety.

Brown (2000, p.14) stated that affective factors such as anxiety are a significant problem in foreign language learning. From a psychological perspective, anxiety is defined as subjective feelings related to the stimulation of the automatic nervous system such as tension, stiffness, nervousness and worry (Baez-Holley, 2013; Spielberger ve Gorsuch, 1983, s.15). These individual anxious feelings are also reflected in the language area, and this situation is called foreign language anxiety. Foreign Language Anxiety can be defined as “anxious and negative emotional reaction while learning or using a second language” (MacIntyre, 1999, p.27). Foreign language anxiety has also been defined as a state of anxiety from which students suffer in language learning and an ambiguous fear arising from this (Scovel, 1978, p.134). Students affected by this ambiguous fear feel anxiety about learning a foreign language with the effect of negative learning experiences and perceptions during the development of target language proficiency. The literature reveals a significant negative relationship between anxiety and language learning (Akmençe&Tuncer, 2018; Doğan&Tuncer, 2016; Krashen 1982, s.36; Liu&Ni, 2015). Based on these approaches, the anxiety of university preparatory students starting to learn a new language and encountering new problems due to this may negatively affect their foreign language learning processes (Baş&Özcan, 2018; Demirdaş&Bozdoğan, 2013).

Motivation is considered an important factor in student success and learning (Beck, 2004; Dörnyei, Csizer, & Nemeth, 2006, s.54). Gardner (1985, p.9) stated that motivation is the factor that most affects foreign language learning along with anxiety. Gardner (1985, p.10) defined the motivation to learn a foreign language as the combination of struggle to learn the language, the passion to achieve the purpose of learning that language, and developing a positive manner to learn a new language. Motivation is one of the key factors in foreign language learning, because besides being the driving force that initiates and maintains learning, it is an important element that compensates for the lack of ability when the learning situation becomes difficult (Ames, 1992; Bereketoğlu, 2018; Oxford ve Shearin, 1994, s.15). The fact that university preparatory class students feel anxiety due to the uncertainty during the learning process of a new language, and that they are going through an intense foreign language education process than they have ever been before going to the department may negatively affect their motivation for learning a language (Burgucu, 2011; Pak, 2014). The low motivation of university preparatory class students towards foreign languages may negatively affect the course of their university life, which they have just started, in terms of academic, social and psychological aspects. Due to the complex structure of the foreign language learning process, the literature also mentions factors such as cognitive flexibility that affect this process, as well as affective factors such as anxiety and motivation (Gardner & MacIntyre, 1991, p.60; Miller, 1991, p.237; Robinson, 2002, p.14; Rubin, 1981, p.118).

Early scholars from sociology identified cognitive flexibility as “the readiness of one's general thought system to change appropriately for environmental stimuli” (Scott, 1962, p.406). Mental health researchers, on the other hand, defined cognitive flexibility as being able to produce ideas from different perspectives, keep alternatives in mind, switch between ideas in accordance with the situation, evaluate different ideas simultaneously, and make different plans that can adapt to changing conditions (Al-Jabari, 2012; Anderson, 2002, s.72; Cayanus, 2005; Jacobson&Spiro, 1995, s.46). Dennis and Wal (2010, p.246) stated that individuals who encounter new and difficult situations with cognitive flexibility tend to be

able to control these situations, are aware that alternative solutions can be found for these problems. He defined it as the ability to develop different solutions for the problem and to switch from the current idea to other ideas in order to keep up with the problems and stimuli around.

Cognitive flexibility, which can also be considered as a problem-solving skill, is also defined as the ability to adjust the problem-solving process as task demands change (Altunkol, 2011; Gündüz&Çelikkaleli, 2019; Krems, 1995, s. 201; Martin ve Anderson, 1998, s. 35).

When the studies are questioned in detail, it is seen that each of them tries to explain foreign language anxiety with only affective or only cognitive variables. Alternatively, the foreign language learning process is a process in which cognitive factors are as effective as affective factors (Doğan Laçın&Yalçın, 2019; Miller, 1991, s.237).. In the literature review, no study was found that directly examines the relationship between the concepts of motivation and cognitive flexibility and foreign language anxiety. In this study, since the relationship of foreign language anxiety with motivation, which is an affective element, and cognitive flexibility, which is a cognitive element, is examined, it is thought that it is important to reveal the possible relationship between this problem in terms of both affective and cognitive aspects.

1.1.The aim of the study

The aim of the study is to reveal the relationship between university preparatory students' foreign language learning motivation and foreign language anxiety and the mediating role of cognitive flexibility in this relationship.

2.Methodology

The causal-comparison method, one of the descriptive research models, was used in the study. In this direction, based on the theoretical framework, the relationships between foreign language learning motivation, cognitive flexibility and foreign language anxiety were investigated using the basic meditation model.

The Study Group

The study group of the research consists of 314 volunteer students over the age of 18 and from different language levels who are studying in the English preparatory program of the Department of Foreign Languages of Eskişehir Osmangazi University in the spring semester of 2018-2019 academic year. Students study in classes at Beginner, Elementary and Pre-Intermediate levels according to their English level. It was determined that 31.53% of the study group was female and 68.47% was male. In terms of language level studied, 30.89% of the sample were Beginner, 46.82% were Elementary, and 22.29% were Low-Intermediate. In terms of university exam entrance score type, it was determined that 84.39% of the sample entered the university with the Numerical score type, and 15.61% with the Equal Weight score type.

2.1.Data Collection Tools

2.1.1. Personal information form

In this form, which was prepared by the researchers with the aim of determining the demographic characteristics of the study group, there are questions about gender, foreign language level and university exam score type.

2.1.2. Foreign language classroom anxiety scale (FLCAS)

Developed by Horwitz, Horwitz, and Cope (1986, p.128), the Foreign Language Classroom Anxiety Scale (FLCAS) was prepared in a five-point Likert type and consists of the sub-dimensions of fear of communication, fear of negative evaluation, and test anxiety. The scale consists of 32 items and the Cronbach Alpha coefficient is .93 and the test-retest reliability is .83. The range of points to be taken from the scale is 32-160. The adaptation of FLCAS to Turkish language and culture was made by Aydın (1999, p.136). A high score obtained from the scale means that the level of foreign language anxiety is also high. The internal consistency coefficient of the adapted scale was measured as .91. Within the scope of this research, Cronbach Alpha and McDonalds Omega coefficient were also calculated for the reliability analysis of FLCAS. The Cronbach Alpha coefficient of the scale was determined as .92, and the McDonalds Omega coefficient as .93.

2.1.3. Cognitive flexibility inventory (CFI)

The Cognitive Flexibility Inventory (CFI), developed by Dennis and Wal (2010, p.245) and adapted to Turkish language and culture by Gülüm and Dağ (2012, p.216), is another data collection tool of the study. CFI consists of two factors, "alternatives" and "control", and 20 items. A high score from the inventory means a high level of cognitive flexibility. Regarding the reliability of BEE, the Cronbach's Alpha coefficient was calculated as .90 for the entire inventory, .89 for the "alternatives" sub-dimension, and .85 for the "control" sub-dimension (Gülüm and Dağ, 2012, p.222).

Within the scope of this research, Cronbach Alpha and McDonalds Omega coefficient were also calculated for the reliability analysis of CFI. The Cronbach Alpha coefficient of the scale was determined as .89 and the McDonalds Omega coefficient as .88. These values show that the scale reliability is good.

2.1.4. Foreign language learning motivation scale (FLLMS)

Finally, the Foreign Language Learning Motivation Scale developed by Griffiths and Özgür (2013, pp. 1109-1114) was used to measure the level of motivation in foreign language learning environments. The scale is 8-item five-point Likert type. The sub-dimensions of the scale are integrative motivation, instrumental motivation, extrinsic motivation and intrinsic motivation. A high score obtained from the scale means that the level of foreign language motivation is also high. The Cronbach Alpha coefficient was calculated as .75 in the entire scale (Tugan, 2015, p.37).

Within the scope of this research, Cronbach Alpha and McDonalds Omega coefficient were also calculated for the reliability analyzes of the FLLMS. The Cronbach Alpha coefficient of the scale was determined as .67 and the McDonalds Omega coefficient as .68. These values show that the scale reliability is sufficient.

2.2. Data collection

After the necessary research and ethics committee permissions were obtained by the researcher for the students in the sample of the personal information form and related scales, data were collected from the students at the Beginner, Elementary and Lower Intermediate levels who received English preparatory education at Eskişehir Osmangazi University

Foreign Languages Department in the Spring semester of the 2018-2019 academic year. Answering the scales took approximately 20 minutes.

2.3.Data Analysis

The analyzes of the data obtained from the scales were carried out in the SPSS 22 program. Before the analysis, outliers were examined for the data and it was determined that there were no extreme values. Descriptive Statistics, Pearson Correlation Coefficient and Bootstrap Method were used to test the mediation models. In this study, whether the indirect effects in the tested models were statistically significant was examined on 5000 bootstrap samples. Estimates were evaluated at 95% confidence intervals.

3. Findings

Before moving on to the findings related to the analysis of the data, the university preparatory class students; The distributions of foreign language anxiety, cognitive flexibility and motivation to learn foreign language were examined, and information about these distributions is shown in Table 1.

Table 1.

Descriptive Statistics on Variables (N:314)

Variables	<i>n</i>	\bar{x}	ss	Skew	Kurtosis	The lowest value	The highest value
Cognitive flexibility	314	77.05	10.04	-0.19	0.15	45	100
Foreign language anxiety	314	86.53	20.75	0.09	-0.25	36	142
Motivation	314	31.87	4.47	-0.47	0.07	17	40

When the distributions of the variables are examined, it is seen that the average of foreign language anxiety of university preparatory class students (86.5) is slightly above the scale average, their cognitive flexibility is high (77.1), and lastly, their foreign language learning motivation (31.9) is high.

In the study, before determining whether the foreign language anxiety of university preparatory class students is significantly predicted by cognitive flexibility and foreign language learning motivations, it was examined whether there was a significant relationship between the variables as a prerequisite and the results of these analyzes are given in Table 2.

Table 2.

Pearson Product-Moment Correlation Coefficients of Foreign Language Classroom Anxiety, Cognitive Flexibility Level and Foreign Language Learning Motivation (N=314)

Variables	Foreign Language Anxiety	Cognitive Flexibility	Foreign Language Learning Motivation
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Foreign Language Anxiety	—	—	—
Cognitive Flexibility	-0.419***	—	—
Foreign Language Learning Motivation	-0.155**	0.202***	—

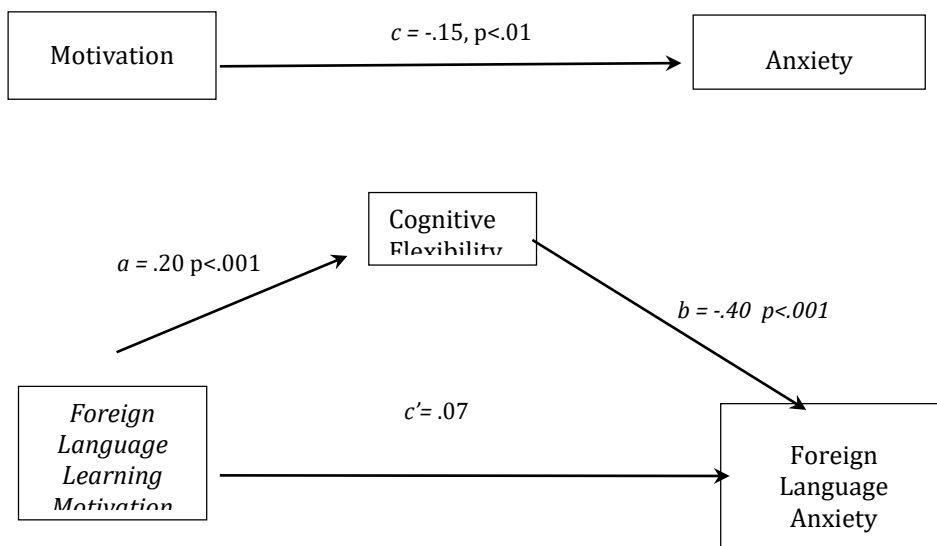
* p < .05, ** p < .01, *** p < .001

As can be seen in Table 2, the relations between the variables vary between -.16 and -.42. Accordingly, there is no multicollinearity problem between the variables. While there is a negative ($r = -.42, p < .001$) significant relationship between foreign language anxiety and cognitive flexibility of university preparatory class students, there is also a negative relationship between foreign language anxiety and foreign language learning motivation ($r = -.16, p < .01$) there is a significant correlation. There is a significant positive correlation between cognitive flexibility and foreign language learning motivation ($r = .20, p < .001$).

3.1. Findings Regarding the Mediation Role of Cognitive Flexibility Between Foreign Language Learning Motivation and Foreign Language Anxiety in Preparatory Students

Regression-based bootstrapping analysis was used to test the mediation of preparatory students' cognitive flexibility levels between foreign language learning motivation and foreign language anxiety. The direct and indirect effects of the analysis performed are presented in Figure

Figure 1. Model on the mediating role of cognitive flexibility between motivation and foreign language anxiety



As seen in Figure 1, motivation of English preparatory class students directly positively predicted their cognitive flexibility ($\beta = .20, p < .001$). On the other hand, cognitive flexibility directly negatively predicted foreign language anxiety ($\beta = -.40, p < .001$). It is seen that the total effect of foreign language learning motivation on foreign language anxiety is -.15, when the mediating variable cognitive flexibility is included in the

model, this effect increases to .07 and this value is significant. It can be said that the mediation relationship is significant if the relationship between the variable Y (foreign language learning motivation) and the Y variable (foreign language anxiety) decreases, provided that it is different from zero (0) when the M variable (cognitive flexibility) is included (Preacher & Hayes, 2004; MacKinnon, 2008; Judd & Kenny, 2010; Rucker, Preacher, Tormala, & Petty, 2011). Considering these recommendations, the findings suggest that cognitive flexibility improves foreign language readiness. It points out that there is a fully mediator variable between the foreign language learning motivations of primary school students and their foreign language anxiety.

Sobel Z test and Bootstrapping coefficient and 95% confidence intervals (CI) are presented in Table 2 to provide evidence for the significance of the direct effect of cognitive flexibility in Figure 1 regarding the full mediation role between foreign language learning motivation and foreign language anxiety.

There is a full mediating role of cognitive flexibility between motivation and anxiety. In other words, as students' motivation increases, their flexibility also increases. As a result, as cognitive flexibility increases, anxiety decreases. As a result, the combination of high motivation and cognitive flexibility reduces anxiety. In other words, low motivation and low cognitive flexibility increase anxiety.

Table 3.

Boostraping table for indirect effects

Indirect Effects	Coefficient	Average	Sd	%95 GA	
				Low Limit	Upper limit
Cons.	62,58	62,55	4,549	53,78	71,37
Motivation+Flexibility	,4540	,4554	,1401	,1761	.7286
Motivation	-,3394	-,3389	,2327	-,8056	,1141
Motivation → Flexibility → Anxiety	-,8345	-,8320	,1008	-1,027	-,6279

As seen in the Bootstraping table, cognitive flexibility has been found to have a mediating role in the relationship between motivation and anxiety. It is seen that the coefficient obtained is between the 95% confidence intervals that emerged as a result of the bootstraping sample of 5000 people.

4. Discussion

In this study, the mediating role of cognitive flexibility between foreign language learning motivations and foreign language anxiety of university preparatory class students was investigated.

Cognitive flexibility, which is also related to the executive function of the brain, is defined as a coordination system in which the individual perceives information about his environment, responds adaptively, changes direction flexibly, anticipates future targets, considers possible outcomes, and reacts appropriately to his environment by doing all these operations together. is expressed (Phalet and Kasic, 2006, p.339). A person who feels himself as cognitively flexible can recognize, accept and adjust himself accordingly, instead of showing only one correct proper reaction (Martin & Rubin, 1995, p.625). Part of recognizing alternatives is the individual's ability to shift the locus of control to flexibly assess

experiences and demands within and outside of his or her personal control (Sapolsky, 2004, p.11).

Although cognitive flexibility is a cognitive function, it also has a structure that is affected by affective factors such as anxiety (Aydinay-Satan, 2014, p.61). Individuals with high cognitive flexibility can be expected to be competent in coping with the problems they will encounter in the classroom while learning a foreign language and finding alternative solutions to these problems, and therefore be less anxious about the foreign language. A negative relationship between foreign language anxiety and cognitive flexibility means that there is an inverse relationship between the two variables, as one increases and the other decreases. Various researchers have also reached research results supporting this research finding (Serpin Eşiyok, 2016, p.101; Timarová and Salaets, 2011, p.50).

Similarly, Gündüz (2013, p.2083) found a negative relationship between general anxiety and cognitive flexibility, and a positive relationship between happiness and cognitive flexibility in his study. It can be said that these studies support this result of the research. On the other hand, while Öz (2012, p.80) found a negative relationship between state anxiety and cognitive flexibility, he could not find a significant relationship between trait anxiety and cognitive flexibility. Delano-Wood (2002, p.680) found no significant relationship between general anxiety and cognitive flexibility in his study. In Bozkurt's (2019, p.80) study, no significant relationship was found between test anxiety and cognitive flexibility. Different results regarding the relationship between anxiety and cognitive flexibility in the literature may be due to the fact that different types of anxiety have been examined.

The negative significant relationship between foreign language anxiety and foreign language learning motivation found as a result of this study also shows parallelism with various studies in the literature (Bertiz, 2018; Huang, 2004; Liu & Wang, 2014; Liu & Huang, 2011; Öztürk, 2012; Tugan)., 2015; Aydın, 2016) However, Yu (2015, p.51) found a positive relationship between foreign language anxiety and motivation in his study, which can be explained by the culturally motivational feature of foreign language anxiety.

A positive relationship between cognitive flexibility and foreign language learning motivation means that there is a direct proportionality between the two variables, as one increases, the other increases, or vice versa. It is an expected result that individuals who can take control of the problems they encounter and produce alternative solutions to these problems, thanks to their cognitive flexibility during foreign language learning, will have more desire for foreign language learning as they solve their problems. On the contrary, individuals who cannot control their problems and produce alternative solutions due to their limited cognitive flexibility during foreign language learning are likely to decrease their desire for language learning.

The fact that cognitive flexibility is one of the predictors of foreign language learning anxiety suggests that individuals who are cognitively flexible can also cope with anxiety, which is a foreign language problem, because they are qualified for controlling problems and creating alternative solutions. In addition, considering that cognitively flexible people adapt more easily to new situations, one of the conclusions of this study is that they may be able to cope with feelings such as anxiety that may arise as a result of adaptation problems.

The negative relationship between foreign language anxiety and foreign language learning motivation means that there is an inverse relationship between the two variables, as one increases, the other decreases. Anxiety is a factor that negatively affects academic performance (Burns, 2004, p.120). It can be thought that when academic performance is affected, motivation will also be negatively affected. Liu and Cheng (2014, p.289) stated that anxious individuals tend to have lower levels of motivation and negative feelings towards foreign language learning. If students' negative feelings such as anxiety towards foreign language increase due to different reasons, it is inevitable that their desire for language

learning will decrease. In this case, first of all, teachers have some duties to reduce anxiety in the classroom. These measures include clearly defining the course objectives, making arrangements to make the classroom environment comfortable, sharing language experiences, doing activities that encourage language use such as games and group work, avoiding constantly correcting students when they make mistakes, and increasing expressions of appreciation and encouragement. In summary, if the motivation to learn a foreign language increases, it is an expected result that negative emotions such as foreign language anxiety will decrease, as positive perspectives towards language learning will be gained.

As a result, the cognitive flexibility of foreign language preparatory students with high motivation is also high, and as a result, their foreign language learning anxiety is low. Considering the high level of foreign language learning motivation, the individual can develop cognitive self-regulation skills and manage their thoughts and emotions with a solution-oriented and multi-dimensional perspective, it can be said that they can manage their anxiety and do not allow their anxiety to negatively affect their learning motivation.

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