

# Effect of Foreign Language Classroom Anxiety on Turkish University Students' Academic Achievement in Foreign Language Learning

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## Abstract

This study was carried out in order to identify to what extent the Turkish students' English classroom anxiety affects their academic achievement in English language. In this quantitative descriptive study, a correlational survey model was employed, and the convenience sampling was done. In order to collect data, the Foreign Language Classroom Anxiety Scale developed by Horwitz, Horwitz and Cope (1986) was used. The latest validity-reliability of this scale was conducted by Gürsu (2011), in which the three-factor structure of the scale was confirmed. The test-retest correlation of the scale was found as .85. This study was conducted with 271 university engineering students receiving compulsory prep-class education at Fırat University during the academic year of 2012-2013. The data of the study were analyzed with the logistic regression analysis. According to the findings, the foreign language anxiety at the beginning of the prep-class education was not effective as the predictor of the academic achievement. On the other hand, it was observed that the students' anxiety, at the end of the education, accounted for the academic failure with its speaking anxiety in language class dimension, and predicted academic achievement with its interest towards language class dimension. This study revealed that the students' anxiety evolving and ever-increasing during their English prep-education powerfully predicted their academic performance. Whatever its source may be, anxiety in learning environments is mostly an unwanted situation. Therefore, it has always been underlined in the literature that in order to facilitate learners' language learning process, the effect of anxiety should be minimized.

**Keywords:** foreign language anxiety, anxiety, achievement, prep-class education

## 1. Introduction

Anxiety has commonly been regarded as one of the most important affective obstacles in language learning achievement, and has been the subject matter of many second/foreign language researches (MacIntyre&Gregersen, 2012; Huang, 2012; Hewitt&Stefenson, 2011; Riasati, 2011; Horwitz, 2010; Horwitz, 2001; Young, 1999; Oxford, 1999; Aida, 1994;MacIntyre&Gardner, 1991; Young, 1991; Horwitz, Horwitz&Cope, 1986). It was emphasized in some second language theories (Krashen, 1982; Curran et al., 1960) that since anxiety impedes language acquisition, low-anxious learning environments should be created for learners (Huang, 2012).Foreign language anxiety was conceived by Horwitz, Horwitz and Cope (1986) as "a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the uniqueness of the language learning process". In other words, foreign language anxiety is a term which comprises feelings of worry, and negative and fearful emotions related with an individual's learning or using a language which is not his/ her mother language (MacIntyre & Gregersen, 2012).

MacIntyre and Gardner (1989) suggest that students do not start language learning with anxiety, but anxiety is a learned emotional reaction, and it appears after students' attitudes towards language learning develop. After a few experiences within the foreign language context, the learner develops attitudes and feelings toward this learning a new language situation. If these experiences are negative, foreign language anxiety may begin to develop; and as these negative experiences continue, foreign language anxiety turn out to be something that happens constantly, and the learner begins to be anxious and perform badly. Poor performance and negative emotional reactions intensify anxiety and failure expectations; and subsequent anxiety is a reaction against this perceived threat (MacIntyre and Gardner, 1991). It has been reported that foreign language classes are the most anxiety-provoking classes (Horwitz et al., 1986; MacIntyre & Gardner, 1991; Campbell & Ortiz, 1991; Onwuegbuzie et al., 1999). It can be understood from the relevant studies that

the relationship between anxiety and academic achievement exhibits often a mutual structure. As the learner's academic performance worsens, his/her level of anxiety related to certain academic tasks increases (Huberty, 2009). In the same vein, it is well-known that an anxious learner will be academically unsuccessful. On the other hand, MacIntyre (1995) claims that anxiety may be the cause, rather than the result, of poor performance; whereas Horwitz (2001) states that to determine to what extent this is so is the real difficulty.

In many studies conducted both at home and abroad, it was found out that there is a negative correlation between foreign language anxiety and success in language learning or language proficiency, and foreign language anxiety negatively affects the academic achievement in language learning (Proulx, 1991; Aida, 1994; Horwitz, 2001; Demirdaş & Bozdoğan, 2013; Demirdaş, 2012; Köroğlu, 2010; Kılıç, 2007; Batumlu, 2006; Gülsün, 1997; Kunt, 1997; Trylong, 1987; Saito et al., 1999; Phillips, 1992; Ganschow et al., 1994; Sparks et al., 2000; von Würde, 2003; Chan & Wu, 2004; Hao et al., 2004; Elkhafaifi, 2005; Awan et al., 2010; Wang, 2011). The meta-analyses findings consistently show significant negative relations typically ranging from  $-.20$  to  $-.25$  between anxiety and achievement outcomes (Goetz and Hall, 2013). When the relevant studies are examined, the importance of further investigating the relation between foreign language anxiety and academic achievement in foreign language learning is well established in terms of Turkish students. In this regard, this study was carried out to identify to what extent the Turkish students' English classroom anxiety affects their academic achievement in English language. To this end, the study aimed to investigate the following two research questions:

1. What is the effect of foreign language classroom anxiety, if any, on the students' achievement scores of the English proficiency test done before the compulsory prep-class education?
2. What is the effect of foreign language classroom anxiety, if any, on the students' achievement scores of the English proficiency test done at the end of the compulsory prep-class education?

## 2. Method

This descriptive quantitative study was carried out in the correlational survey model. The population of the study involved the university students at Fırat University who were already enrolled to study at various engineering departments, and thus were receiving compulsory English prep-class education during the academic year of 2012-2013. As one of the researchers was teaching these students at the time, the method of convenience sampling, in which members of the target population are selected for the purpose of the study if they meet certain practical criteria, such as geographical proximity, availability at a certain time, or easy accessibility (Dörnyei, 2010), was used. The sample consisted 271 students who voluntarily wanted to take part and answer the questionnaires administered by the researchers. These students were subjected, by the school of Foreign Languages at Fırat University, to take a foreign language achievement test before they could start receiving education in the departments they had already gained right to study. Those having failed in this exam went on to attend a one-year prep-class education. The students took a summative achievement test at the end of the prep-education. The academic achievement criteria were 70 for both exams. Those graded with 70 and over from these exams were exempt from the foreign language prep-class education. In order to collect data, the Foreign Language Classroom Anxiety Scale developed by Horwitz, Horwitz and Cope (1986) was used. The latest validity-reliability of this scale was conducted by Gürsu (2011), in which the three-factor structure of the original scale was confirmed. These factors were relabeled by Gürsu (2011) as *speaking anxiety in language class*, *interest towards language class* and *anxiety of talking with native speaker*. The test-retest correlation of the scale was found as  $.85$ . The data of this study were limited to the foreign language anxiety scale and the achievement test scores of the students. The data of the study were analyzed with the standard (enter) method of the logistic regression analysis. Logistic regression is used to measure the relationship between categorical dependent variable and one or more independent variables, which are generally continuous, by predicting probabilities. In other words, logistic regression is an appropriate kind of analysis when the dependent variable is not continuous (in this case, the achievement scores of the students categorized as successful and unsuccessful). Furthermore, the logistic regression analysis has an important place in categorical data analysis with its regression type logic, and being advantageous because of being more useful compared to other analyses (Çokluk, Şekercioğlu and Büyüköztürk, 2010).

## 3. Results

The first question of the study was whether foreign language anxiety had any impact on the students' achievement scores of the formative achievement test (the scores students got from the foreign language achievement test done before the prep-class education). When a logistic regression analysis was conducted for this question, it was observed that the  $-2LL$  ( $-2\log$  probability) value started with 231.209. When it is considered that the  $-2LL$  value for perfect fit is zero (0) (Çokluk, Şekercioğlu and Büyüköztürk, 2010), the value above-mentioned is considerably high. Upon the evaluation of the case in terms of the predictive variables in the analysis, the results of the first categorization were found to be as in Table 1.

Table 1. The first categorization table of the predictive variables

Unobserved true / Observed case	Estimated Case		Correct categorization percentage
	Unsuccessful	Successful	
Unsuccessful	231	0	100.0
Successful	40	0	0
Total correct categorization percentage			85.2

On analyzing Table 1, it is understood that all the students in the prep-class were categorized within the unsuccessful group, and the correct categorization percentage was 85.2 %. And the Wald statistic results of the variables in the first model were as  $\beta=-1.754$ , *Standard Error*=.171, *Wald*=104.841, *value of freedom*=1, *value of significance* .000, *Exp*( $\beta$ )=.173. The Wald statistic is widely used in order to test the significance of the logistic regression coefficient for each predictive variable. The results of the variables which were not in the first model (predictive variables) are given in Table2.

Table 2. The Results of the predictive variables before foreign language prep-education

	Variables	Score	sd	p
Step 0	Speaking Anxiety	2.334	1	.127
	Interest towards language class	6.397	1	.011
	Anxiety of talking with native speaker	.000	1	.991
	Error Chi-square statistics ( $x^2_{\beta_0}$ )	7.534	4	.110

It is seen that the error chi-square value in Table 2 is not statistically significant ( $X^2_{\beta_0}=7.534$ ,  $p>.05$ ). Although no significant difference was observed, it was found that the interest towards language class factor was at a significant level. However in such cases, it is generally interpreted, by looking at the error chi-square value, that the predictive variables that have not been included in the model do not make any significant contribution to the predictive power of the model, and the analysis is thus finalized (Çokluk, Şekercioğlu and Büyüköztürk, 2010).

The second question of the study was whether foreign language anxiety had any impact on the students' achievement scores of the summative achievement test (the scores the students got from the foreign language achievement test done after the prep-class education). When a logistic regression analysis was conducted for this question, it was observed that the -2LL (-2log probability) value started with 330.711. Upon the evaluation of the case in terms of the predictive variables in the analysis, the results of the first categorization were found to be as in Table3.

Table 3. The Categorization of the predictive variables after foreign language prep-education

Unobserved true / Observed case	Estimated Case		Correct Categorization Percentage
	Unsuccessful	Successful	
Unsuccessful	190	0	100.0
Successful	81	0	0
Total correct categorization percentage			70.1

It was identified that all the students in the prep-class were categorized within the unsuccessful group, and the correct categorization percentage fell down to 70.1 %. And the Wald statistics results of the variables in the first model were as  $\beta= -.853$ , *Standard Error*=.133, *Wald*=41.279, *value of freedom*=1, *value of significance* .000, *Exp*( $\beta$ )=.426. The results of the variables which were not in the first model (predictive variables) are given in Table4.

Table 4. The Results of the predictive variables after foreign language prep-education

	Variables	score	sd	p
Step 0	Speaking Anxiety	3.977	1	.046
	Interest towards language class	18.342	1	.003
	Anxiety of talking with native speaker	3.756	1	.053
	Error Chi-square statistics ( $x^2_{\beta_0}$ )	26.680	4	.000

The error chi-square value in Table 4 is statistically significant ( $X^2_{\beta_0}=26.680$ ,  $p<.05$ ). The significance of this value shows that the coefficients of the predictive variables that were not included in the model are significantly different from zero. It can be suggested that the inclusion of one or more of these variables into the model will increase the predictive power of the model. The calculated Hosmer & Lemeshow value was as Chi-square=6.396, *sd*=8 and *p*=.603. The significance of the Hosmer & Lemeshow value shows that the model does not have the acceptable fit (Çokluk, Şekercioğlu and Büyüköztürk, 2010:93). Thus, as the value found is not significant in this regard, the goodness of fit of the model is at an adequate level. The categorization table of the model obtained as a result of the Logistic regression was found to be as in Table5.

Table 5. The categorization table of the model obtained as a result of the Logistic regression

Unobserved true / Observed case	Estimated Case		Correct Categorization Percentage
	Unsuccessful	Successful	
Unsuccessful	180	10	94.7
Successful	66	15	18.5
Total correct categorization percentage			72.0

On analyzing the first categorization results, the correct categorization ratio for the unsuccessful was 70.1 %, while the correct categorization ratio increased to 72.0 % as a result of the logistic regression analysis model. And out of 190 unsuccessful students, 180 of them were categorized correctly, while 10 of them were categorized incorrectly; and out of 81 successful students, 15 of them were categorized correctly whereas 66 of them were categorized incorrectly. The coefficient estimates of the targeted model variables were found to be as in Table 6.

Table 6. The coefficient estimates of the target model variables

Step		$\beta$	S. Error	Wald	df	p	Exp( $\beta$ )
1	Speaking Anxiety	-2.228	1.102	4.085	1	.043	.108
	Interest towards language class	.582	.259	5.043	1	.025	1.790
	Anxiety of talking with native speakers	.167	.247	.459	1	.498	1.182
	Standardized	-5.294	1.160	20.843	1	.000	.005

According to the results in Table6, the foreign language prep-education speaking anxiety of the students is affected by the interest towards language class and the foreign language classroom anxiety in general, but not affected by the anxiety of talking with native speakers. The categorization equation in accordance with this can be stated as:  $-5.294 - 2.228x$  (Speaking anxiety)  $+ .582x$  (interest towards language class). In other words, one (1) unit increase in the predictive variable 'Speaking Anxiety' leads to an increase with the rate of 89.2 % in the unsuccessful odds  $[(1-0.108) \times 100]$ , and one unit increase in the predictive variable 'interest towards language class' leads to an increase of 79 % in academic achievement.

#### 4. Discussion

The term foreign language anxiety has mostly been used to define tension and appraisal feelings especially associated with second language learning contexts (Dewaele, 2007). It is claimed that foreign language anxiety is, among affective factors, the most powerful predictor of learners' foreign language performance (Liu & Huang, 2011; as cited in Al-Shboul et al., 2013). In this regard, this study aimed to investigate to what extent the foreign language anxiety the students having received compulsory prep-class education experienced could affect their academic achievement before and after their education. According to the findings, the foreign language anxiety at the beginning of the prep-class education was not effective as the predictor of the academic achievement. On the other hand, it was observed that the students' anxiety, at the end of the education, accounted for the academic failure with its speaking anxiety in language class dimension, and predicted academic achievement with its interest towards language class dimension. It was reported in the literature that a strong speaking anxiety factor is a typical component of the foreign language classroom anxiety (Cheng et al., 1999). In parallel with the results of the study, Huang (2012) cites that anxiety impedes the language learning process. The finding that anxiety cannot be one of the predictors of the students' achievement at the beginning of their prep-education can be explained with MacIntyre and Gardner (1989)'s claim that students do not start language learning with anxiety, but anxiety is a learned emotional reaction, and it appears after students' attitudes towards language learning develop. Aydemir (2011)'s study, in which a significant increase emerged in the students' foreign language anxiety levels at the end of their prep-class education, also shows that students' anxiety evolves and increases throughout the teaching process. Moreover, the suggestion that poor performance and negative emotional reactions may increase anxiety and failure expectations (MacIntyre & Gardner, 1991; Horwitz, 2001) is also compatible with this study. On the other hand, the development of three components of the foreign language classroom anxiety construct (fear of communication, fear of negative evaluation and test anxiety), proposed by Horwitz, Horwitz & Cope (1986), in students during their prep-education may also have caused their poor performance. Foreign language classroom anxiety may be caused by many such individual and external factors as learners' and teachers' beliefs about language learning, teacher-learner interactions, exams, in-class procedures, etc. (Young, 1991), and may affect foreign language learning in many respects. This study revealed that the students' anxiety evolving and ever-increasing during their English prep-education powerfully predicted their academic performance. Whatever its source may be, anxiety in learning environments is mostly an unwanted situation. Therefore, it has always been underlined in the literature that in order to facilitate learners' language learning process, the effect of anxiety should be minimized (Huang, 2012).

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