The Relationship between Language Anxiety and Psycho-physiological Responses to Oral Performance: A Study on Iranian EFL Students

Javad Hayatdavoudi
English department, Faculty of foreign languages, University of Isfahan, Isfahan, Iran

Zohreh Kassaian
English department, Faculty of foreign languages, University of Isfahan, Isfahan, Iran

Abstract

The present study aims at investigating the correlation between language anxiety and perceived psycho-physiological responses to oral performance in Iranian female EFL learners. The population of the study consisted of all elementary and intermediate female EFL learners. Using simple random sampling, a number of 50 EFL learners were selected as the participants. A modified version of foreign language classroom anxiety scale (FLCAS) and a researcher-made psycho-physiological questionnaire were used to collect the data. Both descriptive and inferential statistics including Pearson correlation formula and independent t test were run to analyze the data. Statistical analysis was conducted using SPSS 18. The results showed a significant positive correlation between language anxiety and psycho-physiological responses to oral performance in either group. Accordingly, students with higher levels of language anxiety experienced higher levels of psycho-physiological tensions in oral performance. The results of independent t test revealed that intermediate students were more language anxious than elementary students. They also experienced higher levels of both psychological and physiological tensions in oral performance.

Keywords: Language anxiety, Psycho-physiological responses, EFL learners, Oral performance

Introduction

Over the past few decades, the rising tide of interest in the affective side of human behavior has captured the attention of many scholars within a variety of disciplines including anthropology,
psychology and applied linguistics. As far as applied linguistics is concerned, affective variables have proven to be of primary importance in foreign language learning and teaching.

Put simply, “affect refers to emotion or feeling. The affective domain is the emotional side of human behavior…” (Brown, 2006, p. 153). The affective domain, then, has undergone dramatic stratifications within the respective disciplines under different perspectives. The picture becomes more overwhelming when each entity within the affective domain comes to encompass divisions and subdivisions as well. One such entity amazingly dismantled into diverse categories is anxiety; general anxiety, academic anxiety, state anxiety, trait anxiety, test anxiety, facilitative anxiety, debilitative anxiety and language anxiety, to name but a few.

Of all these, Language anxiety has secured itself a permanent position in psycholinguistic studies. Language anxiety is thus defined by Richards and Schmidt (2002) as “subjective feelings of apprehension and fear associated with language learning and use” (p. 285). Other scholars have also offered alternative definitions that hold language anxiety 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” (Horwitz et al., 1986, p. 128). Over the last few decades, psycholinguist scholars have invested highly in foreign and second language anxiety studies, investigating its associations with several corresponding factors including age, gender, language proficiency, character traits, learning styles, language skills, psychological and physiological variables, among others. From among the variables associated with language anxiety—gender, physiological and psychological factors along with language performance on tests has attracted many scholars throughout the world.

Some scholars have investigated the associations between language anxiety and performance on language tests (e.g., Horwitz et al., 1986; Wilson, 2006) and have found interesting symptoms in the learners taking tests, particularly oral ones. They have reported such physiological symptoms to oral tests as trembling, distortion of sounds, freezing up, going blank and sweating. As Wilson (2006) asserts, “the literature suggests that the speaking skill is extremely anxiety-provoking in many language students and that it is often seen to arouse more anxiety than the other skills” (p. 103). Several authors have also reported psychological reactions to oral performance in language tests such as procrastination, silence, apprehension, etc. (e.g., Horwitz et al., 1986; Xianping, 2003). However, the findings have not always been unquestionably agreed
upon. Incorporating the gender variable in the same line of research adds up to the obscurity of the issue to some extent. Some scholars suggest that the female is generally more anxious than the male subjects (e.g., Cheng, 2002), while others have reported no significant correlation between language anxiety and gender (e.g., Dewale, 2002; Aida, 1994).

Following the same line of research and taking Iranian language students into consideration, this study is going to investigate the relationship between language anxiety in Iranian EFL students and perceived physiological and psychological reactions on oral performance.

**Literature Review**

Despite the growing concern for the affective side of human behavior, it was not until the latter part of the twentieth century, in the 1970s, that “SLA researchers began to study the significant role played by personality variables in second language acquisition” (Tanveer, 2007, p. 9). Then it was Horwitz, Horwitz and Cope’s (1986) path-breaking work that introduced language anxiety as an independent construct in the literature. They maintained that “just as anxiety prevents some people from performing successfully in science or mathematics, many people find foreign language learning, especially in classroom situations, particularly stressful” (p. 125). Horwitz et al (1986) further reported that “the subjective feelings, psycho-physiological symptoms of the anxious foreign language learner are essentially the same for any specific anxiety. They experience apprehension, worry, even dread. They have difficulty concentrating, become forgetful, sweat and have palpitations” (p. 126).

Since then quite a few psycholinguist scholars have followed the model of Horwitz and colleagues in addressing the associations of language anxiety with a variety of other factors. Considering the correlation between language anxiety and language performance, MacIntyre et al (2000) in their study on university students enrolled in French programs reported that 39% of the students “said they felt unsure, self-conscious, nervous or uncomfortable and 34% reported feeling inadequate, stupid, unprepared, incapable and inferior.” Quoting one of their male subjects, they reported him as: “…feeling confident any time that I spoke French that I didn’t have to do so for a good mark. But whenever I am marked I get a little nervous and began to mess up”. Still, contrary to male subjects, they found that giving presentations in the classroom were particularly of interest for the female students. Finally, they came to the conclusion that
language anxiety will not be likely to reduce unless the students’ proficiency increases (p. 316-336). However, in a more recent research, MacIntyre et al (2003) found contrary evidence with regard to the correlation between language anxiety and oral performance so that they had to assert that

…the results [of their new study] might be taken to suggest, possibly counterintuitively, that anxiety is a greater problem for more advanced learners. Increasing communication opportunities and challenges in the language classroom likely provokes anxiety which help to determine whether a student speaks up or remains silent (p. 603).

In a recent research on Turkish EFL adolescent students, Sila Ay (2010) found that “foreign language anxiety, experienced by young adolescent Turkish students, differs in relation to levels of instruction and basic language skills” (p. 89). She reported that foreign language anxiety shows up first in receptive skills (listening and reading) at beginner levels and then mounts up in productive skills (speaking and writing) as the levels advance. She maintained that with the advancement of students’ proficiency of foreign language, their language anxiety with regard to comprehension diminishes and their anxiety toward production increases.

With regard to the associations between language anxiety and testing settings, Horwitz et al (1986) contended that “foreign language anxiety frequently shows up in testing situations. Students commonly report to counselors that they know a certain grammar point but forget it during a test or an oral experience when many grammar points must be remembered and coordinated simultaneously” (p. 127). Drawing further on students’ oral performance, they wrote: “oral tests have the potential of provoking both test and oral communication anxiety simultaneously in susceptible students” (p. 128). Similarly, MacIntyre and Gardner (1991a), while handling the links between language anxiety and tests, asserted that oral tests in foreign languages are likely to trigger language anxiety and communication apprehension. Many a psycholinguist scholar believes the speaking skill, especially in the form of oral performance on tests, to be the most anxiety arousing of all language skills (e.g., Horwitz et al, 1986; Wilson, 2007). As Wilson (2007) asserts “indeed, speaking tests seem to be particularly anxiety provoking as they probably arouse the three constituents of language anxiety… communication apprehension, fear of negative evaluation and test anxiety, all at the same time” (p. 103).
Taking another corresponding variable, gender, into account and trying to work out its associations with language anxiety, Cheng (2002) in his study on Taiwanese English learners discovered that females were considerably more anxious than males. He reported that “… female students in the present study were found to suffer significantly higher levels of English writing anxiety (M=85.67, SD=16.28) than male learners (M=77.41, SD=18.73)” (p. 651).

Ever since the pioneer scholars began studying language anxiety as a distinct construct, they attempted to devise scales in order for the variable to be quantitatively measureable. Horwitz et al (1986), in their seminal work, devised and implemented Foreign Language Classroom Anxiety (FLCAS) which is still widely in use. The scale contains 33 items on a 5-point Likert scale. Other scales have also been developed such as The Language Class Discomfort Scale (Ely, 1986) and The English Language Anxiety Scale (Pappamiheil, 2001), among others.

Despite the ongoing controversies, contradictions and complications in the literature as to the associations between language anxiety and a plethora of other variables, psycholinguist scholars have devoted themselves to more exploration and research on the issue to which this study may be a contribution.

Whether or not controversy could be a legitimate justification for conducting further research on an issue, there seems to be persuasive supports to vindicate the present study. First, the findings have been so contradictory; from the ones that claimed the female students to be generally more language anxious than the males (Cheng, 2002) to the studies that found no significant correlation in this regard (Dewaele, 2007) to the ones that addressed the male subjects to be more language anxious in oral performance (MacIntyre, 2000). Second, the socio-cultural contexts in which the previous studies have been conducted throughout the world are so diverse; from the westernmost (the U.S) to the easternmost (Japan) nations in the world. Thus, while this might account for the contradictions in findings, it would as well be justifiable to undertake such research in Iranian socio-cultural context. Third, to the researcher's knowledge, there has not yet been a study to cover these factors all at the same time among Iranian EFL learners. Besides since the EFL courses in Iranian EFL setting is mostly grammar-based with no definite concern for oral skills, one might think of Iranian EFL students as experiencing high psycho-
physiological tensions in oral performance, which is particularly of interest for a researcher to investigate.

In this regard, this study aims to investigate the correlation between language anxiety, as a situation specific anxiety, and perceived psychological and physiological responses Iranian EFL learners experience in oral presentations. Furthermore, the relationship between EFL learners' proficiency level and perceived psycho-physiological responses to oral presentations will be investigated. Therefore, from among the aforementioned factors, there are language anxiety, proficiency level whose relationship with psycho-physiological responses to oral performance will be explored.

Based on the already-stated aims and the topic under discussion, the following research questions were formulated:

1. Is there any correlation between language anxiety and perceived psycho-physiological responses to oral performance in Iranian EFL students?
2. Is there any significant correlation between Iranian EFL students’ level of proficiency and their perceived psycho-physiological responses in oral performance?
3. Is there any significant correlation between Iranian EFL students’ level of proficiency and their psychological responses as compared with physiological responses to oral performance?

**Method**

**Participants**

The participants of this study consisted of 50 Iranian female EFL students at two levels of proficiency, namely, elementary and intermediate. An oral proficiency test was administered to the participants in advance to ensure their level of proficiency and assign them into due levels. Since Iranian EFL learners rarely continue their studies to advanced levels of proficiency or actual advanced levels, the participants were selected from elementary and intermediate levels.
Instruments

Two main instruments were drawn upon in order for the relevant data to be collected and the research questions to be answered:

1. FLCAS: Foreign language classroom anxiety scale (FLCAS) developed by Horwitz and colleagues in 1986 has since been a frequently-used instrument in measuring language anxiety. FLCAS comprises 33 items based on a 5-point Likert scale ranging from strongly agree (5) to strongly disagree (1). It tends to measure general language anxiety associated with the four major language skills. “The scale [in the original study by Horwitz et al (1986)] has demonstrated internal reliability, achieving an [Cronbach’s] alpha coefficient of .93 with all items producing significant correlated item-total scale correlations.” However, a modified version of FLCAS was used in the present study. This version was first developed by Ay (2010) to investigate language anxiety in Turkish EFL students. The modified scale consists of 20 items on a 5-point Likert scale. She reported the reliability coefficient of the modified FLCAS to be 0.0829. The reliability of the scale was calculated to be $\alpha=0.90$ in the present study using Cronbach alpha formula.

2. Psycho-physiological Questionnaire: A researcher-made questionnaire to examine perceived psycho-physiological tensions was developed. To this end, a corpus of diverse psycho-physiological tensions reported in previous studies was collected first. The previous studies over the last few decades have pinpointed a good many of the psycho-physiological manifestations of language anxiety, which were conveniently used to develop the questionnaire. Then through comparisons with general symptoms of anxiety as reported in psychological studies, a number of physiological and psychological symptoms were selected as potential symptoms that EFL learners may experience. The questionnaire items were accordingly prepared to address two general rubrics: the psychological (internal) responses and physiological (external) responses. The scale consisted of 20 items on a 3-point Likert scale. Using Cronbach alpha formula, the reliability of the scale was calculated to be $\alpha=0.93$. The content validity of the questionnaire was approved by a professor of psycholinguistics and two other experts.
Results

Both descriptive and inferential statistics were used to analyze the data. Table 1 illustrates the results of descriptive statistics of research variables.

Table 1. Descriptive statistics of research variables

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>30</td>
<td>2.2809</td>
<td>.67140</td>
<td>.12258</td>
</tr>
<tr>
<td>Intermediate</td>
<td>20</td>
<td>2.7300</td>
<td>.58790</td>
<td>.13146</td>
</tr>
<tr>
<td>Physiological Responses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>30</td>
<td>1.5800</td>
<td>.37453</td>
<td>.06838</td>
</tr>
<tr>
<td>Intermediate</td>
<td>20</td>
<td>1.9150</td>
<td>.30997</td>
<td>.06931</td>
</tr>
<tr>
<td>Psychological Responses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>30</td>
<td>1.7200</td>
<td>.36615</td>
<td>.06685</td>
</tr>
<tr>
<td>Intermediate</td>
<td>20</td>
<td>2.0300</td>
<td>.31805</td>
<td>.07112</td>
</tr>
<tr>
<td>Psycho-Physiological Responses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>30</td>
<td>1.6500</td>
<td>.34215</td>
<td>.06247</td>
</tr>
<tr>
<td>Intermediate</td>
<td>20</td>
<td>1.9725</td>
<td>.30108</td>
<td>.06732</td>
</tr>
</tbody>
</table>

As shown in the table, the results of each group's performance on every questionnaire are illustrated separately consistent with research variables. Psycho-physiological questionnaire was developed to examine both psychological and physiological factors so that 10 items examined psychological and 10 items examined physiological responses.

Inferential statistics including Pearson correlation formula and t test were run to investigate the significance of the relationship between research variables and compare the performance of the two groups on either questionnaire, respectively. Table 2 illustrates the results of Pearson correlation test of research variables.
As shown in table, the correlation between all research variables was examined two by two in order to provide answers to the first two research questions. The level of significance is calculated to be Sig=0.000 in all correlation tests. Therefore, there is 99% certainty that there is a significant correlation between every two factor in either group. Accordingly, the correlation between language anxiety and physiological responses as well as between language anxiety and psychological responses equals r=68.4 and r=77.1, respectively. The correlation between language anxiety and psycho-physiological responses was calculated to be r=76.8 in either group. The correlation between participants' physiological responses and psychological responses was calculated to be r=79.3.
In order to know answer to the third research question, independent samples t test was run to examine the difference between the two group on their performance in either questionnaire. Table 3 illustrates the results of t test of between-group analysis.

**Table 3. Independent t test results of participants' performance in either questionnaire**

<table>
<thead>
<tr>
<th></th>
<th>Levene’s Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Language Anxiety</td>
<td>.247</td>
<td>.621</td>
</tr>
<tr>
<td></td>
<td>-2.499</td>
<td></td>
</tr>
<tr>
<td>Physiological Responses</td>
<td>2.360</td>
<td>.131</td>
</tr>
<tr>
<td></td>
<td>-3.441</td>
<td></td>
</tr>
<tr>
<td>Psychological Responses</td>
<td>1.543</td>
<td>.220</td>
</tr>
<tr>
<td></td>
<td>-3.176</td>
<td></td>
</tr>
<tr>
<td>Psycho-Physiological Responses</td>
<td>1.503</td>
<td>.226</td>
</tr>
<tr>
<td></td>
<td>-3.511</td>
<td></td>
</tr>
</tbody>
</table>

As shown in the table, the significance of groups performance in FLCAS equals sig=0.016 with negative upper and lower limits. Therefore, there is a significant difference in the mean scores between the two groups. Besides, intermediate students had a larger mean score than the elementary students. The significance of groups performance in psycho-physiological questionnaire equals sig=0.001 with negative upper and lower limits. Besides, intermediate students had a larger mean score than the elementary students. The results also showed significant differences in both psychological and physiological responses between the two groups and the intermediate students had higher mean scores in either type of responses.
Discussion and conclusion

The present study was conducted to investigate the correlation between language anxiety and perceived psycho-physiological tensions Iranian female EFL learners experience in oral performance in language classrooms. To this end, two self-report questionnaires were used, including a modified version of FLCAS and a researcher-made questionnaire. The reliability of either questionnaire was calculated using Cronbach alpha formula which yielded high reliability coefficients.

The results of statistical analysis showed a significant positive correlation between language anxiety and psycho-physiological responses to oral classroom performance in both elementary and intermediate female EFL learners. Therefore, students with higher levels of language anxiety reported to suffer from higher levels of psycho-physiological tensions on oral performance. The results also showed a significant positive correlation between language anxiety and physiological responses in either group so that students with higher levels of language anxiety experienced higher levels of physiological tensions on oral performance. This is consistent with the findings of Horwitz et al (1986) and Wilson (2006). The results revealed a significant positive correlation between language anxiety and psychological responses to oral classroom performance in either group. Therefore, students with higher levels of language anxiety experienced higher levels of psychological tensions on oral performance. This is consistent with the findings of Horwitz et al (1986), Xianping (2003), MacIntyre et al (2000), MacIntyre and Gardner (1991a).

The highest correlation was noticed between physiological and psychological responses (r=79.3) so that learners with higher levels of language anxiety experienced both higher levels of psychological and physiological tensions on oral performance. Besides, the correlations between physiological and psycho-physiological responses as well as psychological and psycho-physiological responses were calculated to be 94.8 and 94.6, respectively.

The results of independent t test showed a significant difference between elementary and intermediate students in terms of language anxiety and psycho-physiological responses to oral classroom performance. Accordingly, there was a significant difference in the mean scores of language anxiety between the two groups, and intermediate students were found to be more language anxious than elementary students. This is consistent with the findings of MacIntyre et
al (2003) and Sila Ay (2010). MacIntyre and colleagues (2003) reported that "anxiety is a greater problem for more advanced learners." Similarly, Sila Ay (2010) found that anxiety toward productive skills (speaking and writing) increases at higher levels of proficiency.

The results also revealed a significant difference in psycho-physiological responses between the two groups. In this regard, intermediate students obtained higher mean scores on psycho-physiological questionnaire, which indicates that they experienced higher levels of psycho-physiological tensions on oral performance. There were also significant differences in psychological and physiological responses between the two groups separately. The intermediate learners obtained higher mean scores for both physiological and psychological responses.

Overall, the present findings showed that intermediate female EFL learners are more language anxious than elementary students, which is consistent with previous findings. However, further studies may be required to investigate this issue on more learners at other proficiency levels in Iranian EFL learners including advanced learners. Besides, the same study may be conducted on Iranian male EFL learners to compare with the present findings. The psycho-physiological questionnaire developed in this study proved both valid and reliable to examine the psychological and physiological tensions EFL learners experience in oral classroom performance. However, it may not assess such tensions in other language skills. Therefore, further studies may be required to examine the reliability and validity of this scale in assessing psycho-physiological tensions in other language skills including listening, reading and writing.

Although the study is correlational and descriptive, it might still have practical implications in order for the practitioners to consider the difficulties Iranian students come up with while required to have oral performance either in oral tests or classroom presentations. The practitioners may then take students’ levels of language anxiety and proficiency level into consideration in their teaching practice, employing more affect-friendly approaches in order to facilitate learning and lower students’ anxiety. They might also want to modify their oral test procedures in a way to put the learners in more comfortable state, hence the betterment of their performance. Besides, measures should be taken to relax the oral communication atmosphere in the classroom at more advanced levels of proficiency.
References


Bio-data:

Javad Hayatdavoudi is a postgraduate student of TEFL at the University of Isfahan. His research interests include psycholinguistics, phonetics and discourse analysis.

Zohreh Kassaian is an associate professor at the University of Isfahan. She teaches a variety of courses including psycholinguistics and phonetics.