

# **A Study on Relationship between Language Anxiety and Proficiency: In a Case of Japanese Learners of English**

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## **Abstract**

Language anxiety is one of the negative factors in second language acquisition. However, several studies produced inconsistent results and have not concurred in the subcategorization of language anxiety. These inconsistent results seem likely to be caused by socio-cultural differences. This present study investigated the applicability of language anxiety scale developed by previous studies to the context of Japan and relationship between language anxiety and proficiency in a speaking test. The participants of this study were sixty-four university students in Japan. The study collected the data on language anxiety through questionnaires and the data on English proficiency through a speaking test. The study found that language anxiety in the speaking test was only a poor predictor of English proficiency.

## **1. Introduction**

The object of second language acquisition research made a shift from the external factors which instructors are able to change, to the internal factors of second language learners, such as age, sex, attribute, learning style, motivation, learning strategy, and language anxiety (Yukina, 2000). A plethora of researches have investigated the relationship between second language learning and language anxiety (MacIntyre and Gardner, 1991). Several researches (MacIntyre, Noels, and Clément, 1997; MacIntyre and Gardner, 1989; Koizumi, 2002) produced inconsistent results both in correlational designs and structural equating modeling. Moreover, the researches into language anxiety have not concurred in the subcategorization of language anxiety (see Aida, 1994; Ueda, Owada, Oya, Tsutsui, and Kodachi, 2004; Yukina, 2003). These four researches adopted Foreign Language Classroom Anxiety Scale developed by Horwitz, Horwitz, and Cope (1986) and factor analyzed the scale, but the researches did not produce consistent subcategorizations. These inconsistent results seem likely to be caused by socio-cultural differences. As Gardner (1980) pointed out, socio-cultural background plays an important role in this sort of survey.

## **2. Background**

MacIntyre and Gardner (1991) mentioned that anxiety is one of the best predictors of success in the second language. The relationship between language anxiety and second language proficiency has been investigated in many studies, because language anxiety is one of the internal factors of second language learners that might hinder the success in second language acquisition. Several studies (Gardner, 1985; Gardner, Tremblay, and Masgoret, 1997) found high correlation between the anxiety and the proficiency. That is, learners with low language anxiety will succeed in their second language learning. Learners with high anxiety, on the other hand, will not. Their

relationship and relative importance can vary depending on the context. Understanding the impact of language anxiety can contribute to teachers' comprehension of their students and improve their teaching. Furthermore, if language anxiety is not a stable factor, there is a need for "research into reducing the effect of anxiety" (MacIntyre and Gardner, 1991). In so doing, it is necessary to investigate the characteristic of language anxiety in second language learning.

Anxiety is investigated in terms of the two perspectives: trait anxiety and situation specific anxiety. Trait anxiety is defined as an individual tendency to be anxious in any situation (Spielberger, 1983 cited in MacIntyre and Gardner, 1991). Situation specific anxiety is, on the other hand, defined as an individual tendency to be anxious in a particular time and situation. Situation specific anxiety can be seen as a subcategory of trait anxiety experienced at a given context. Thus, language anxiety can be included in situation specific anxiety.

Furthermore, language anxiety falls into three categories: "communication apprehension", "test anxiety", and "fear of negative evaluation" (Horwitz, et al., 1986). The items in the questionnaires measuring language anxiety in other studies (Gardner, 1985; Gardner, et al., 1997) seem to have been developed, based on these three categories. In Gardner, et al. (1997), they gave their learners of French concrete situations in the questionnaire, such as in a classroom and in an actual context of use. Therefore, they named the anxieties French Use Anxiety and French Class Anxiety.

It has been reported that foreign language use anxiety and foreign language class anxiety are pervasive among foreign language learners (Horwitz, et. al., 1986; Clément, Dörnyei, and Noels, 1994; Masgoret and Gardner, 2003). Language anxiety is viewed as one of the hindrances for language learners from their successful achievement in a high level of proficiency in a foreign language (Horwitz, 2001; MacIntyre, 1995). In Yukina's (1998) ten-year longitudinal needs analysis, moreover, he proposed in his curriculum goals that instructors should have students acquire "phonological confidence" by reducing their anxiety. In order for language teachers to grasp and facilitate students' anxiety in classrooms, therefore, it is necessary to develop the accurate scale, considering the context of second language learning (Gardner, 1980).

Review of the studies on language anxiety demonstrates that inconsistency remains because of the conflicting result of past studies. Based on the theory of Horwitz, et al. (1986), Aida (1994) adopted Foreign language classroom anxiety scale (FLCAS) developed by Horwitz, et al. (1986) and investigated language anxiety of university students of Japanese in America. Although the target language of Aida's study is different from that of Horwitz, et al. (1986), the descriptive statistics of her data are much the same of Horwitz, et al. (1986), such as sample size, Cronbach's alpha, range, mean, standard deviation, and test-retest reliability. Aida found the four factors: "speech anxiety and fear of negative evaluation", "fear of failing the class", "comfortableness in speaking with Japanese", and "negative attitudes toward the Japanese class". The result was consistent with the categorization of language anxiety by Horwitz, et al. (1986). However, the different result was

obtained in Yukina (2003). He also adopted FLCAS and investigated junior high school students of English in Japan. Through his longitudinal study, he obtained three factors: “anxiety toward the communication with the instructor”, “anxiety toward the new contents of English”, but “anxiety toward criticism from the classmates”, and he did not find test-related anxiety. He concluded that “Aida’s four factors do not apply to Japanese junior high school students learning English as a foreign language” (Yukina, 2003; 165). Furthermore, the participants of Yukina (2003) were in the seventh, eighth, and ninth grade in his junior high school students. The compositions of items from which the factors receive loadings were slightly different in each grade. Ueda, et al. (2004) also adopted FLCAS and investigated language anxiety of Japanese university students’. They found three factors and named them “avoidance of English class”, “English class anxiety”, and “speech anxiety” respectively. In the studies of Yukina (2003) and Ueda, et al. (2004), they failed to find the factor related to test anxiety. The results of their studies were not consistent with the categorization by Horwitz, et al. nor with the result of Aida’s. These results of the studies on language anxiety might imply that language anxiety varies, depending on a learning situation.

Language anxiety is restricted only to speaking and listening in the situation where learners communicate spontaneously in their second language (Horwitz, et al., 1986). It means language anxiety is a relatively unique construct different from test anxiety. MacIntyre and Gardner (1989), and Aida (1994) claimed that language anxiety is different from test anxiety. In a recent study by Koizumi (2002), test anxiety and language anxiety were separately treated and investigated the influence of these anxieties on English speaking proficiency.

Test anxiety has been widely investigated in educational psychology (Sarason, 1980; Tryon, 1980). However, for the relationship between test anxiety and performance in tests, some studies found the positive correlation between them, but others found the negative one or no correlation. Researchers have not been unanimous in the correlational analyses (Fujii, 1995).

One explanation of this controversial issue in language testing is that testing methods have influence on test anxiety. Shohamy (1982) reported that the correlation between test anxiety and test performances varied, depending on the two test methods: a cloze test and an oral interview test. Oh (1992) found that the learners experienced differential levels of anxiety in the reading comprehension tests: a written recall task, a cloze test, and a think aloud task. In language testing, testing methods can drastically change the testing situations where test takers find themselves. Different testing situations might make test-takers experience differential levels of anxiety, because language anxiety is a situation-oriented anxiety.

Individual differences that are not considered to be a part of language ability can affect test performances (Bachman, 1990: 113). If a test method provokes test anxiety, the test score cannot be interpreted as accurate indicators of language ability. Therefore, it is wise for us to understand the relationship among a test method, anxiety, and English proficiency.

### **3. Purpose of the study**

The purpose of this study is to investigate the relationship between language anxiety and proficiency in English. The study will center on the effect of planning condition and the relationship between anxiety and English proficiency, and the other factors are beyond the scope of this study.

### **4. Method**

#### **4.1 Participants**

The participants of this study are first-year students who took an obligatory class, “English I (Expression)” at School of Education, Waseda University. The aim of this class is to help the students express themselves in English, and this class is set only for the students who are not majoring in English language and literature. Although School of Education has the department of English language and literature, this study does not take those at the department as objects of the study. The reasons are that the students belonging to the department obviously possess different motivation toward learning English from that of the other students, and the differences of motivation might influence language anxiety over using English. Moreover, it is difficult to generalize the result when the data is collected from such motivated learners of English.

#### **4.2 Questionnaire**

The questionnaires distributed to the participants are thick and colored papers, based on Newell’s (1993: 109) beliefs; “(1) it stands out from the mass of other paper which might be received, (2) it is pleasant to handle, and (3) people will not have the heart to throw away such an attractive document”. Face sheets were attached to the questionnaire because the topic in this questionnaire, language anxiety, can be disturbing to some participants. The number of items in the questionnaires is below thirty, because Fatigue effect is a key problem in collecting data by questionnaire; “If a questionnaire is too long or monotonous, respondents may begin to respond inaccurately as a result of tiredness or boredom” (Dörnyei, 2003, p. 14). The response format is a 6-point Likert scale ranging from strong disagreement 1 to strong agreement 6. If the items with an even number of categories are provided, because Japanese culture seems likely to value indirect responses, participants prefer to choose the middle-point of the scaling (e.g., 3 in the 5-point scale). The “neutrality can lead to indecisive data” (Busch, 1993, p. 735). Furthermore, Hagiuda and Shigemasu (1996) reported that the analysis of the data collected by Likert scale with below 5 might produce an unreliable result. In the analyses, the responses to negatively keyed items are inverted. For example, when a participant marks 6 strong agreement in an item “I am always relaxed in my English class” in the questionnaire of English class anxiety, 6 is inverted to 1.

### **4.3 Factor analysis**

The procedure of factor analysis in this study is based on Yukina (2003). The procedure is as follows:

1. Cell means are substituted for missing data.
2. The Bartlett's spherical test is done to check the sample suitability. If the Kaiser-Meyer-Olkin measure of sampling adequacy falls below .50, the data are not factor analyzed.
3. If the correlations among factors are expected, the oblique rotation is done to gain a promax solution. If the correlations among factors are not expected, the orthogonal rotation is done to gain a varimax solution.
4. The items of which factor loadings are relatively low are deleted.
5. The number of the extracted factors is reduced to increase the extent of interpretability.

The statistical analyses in this present study are performed by SPSS 12.0 J.

### **4.3 Items in Questionnaire**

In order to measure test anxiety, items were selected from Matsubara, Iwase, Kurashita, and Matsunaga (2000), because their investigation administered to 2608 Japanese students produced the evidence that their scale is highly reliable and valid in the context of Japan.

### **4.3 Speaking Test**

The speaking test adopted in this study is a partial replication of Yuan and Ellis (2003). In the present speaking test, the participants were required to narrate a story orally based on the picture from Lee and Coppen (1983). The story whose picture consisted of eight scenes was about a hare and a tortoise, which seems to be fairly familiar to Japanese students. The picture is found in Appendix C. The participants were required to retell the story without the picture.

### **4.4 Procedure**

As for the questionnaire, the collection of data took place in October of 2003. Before the participants responded, they were informed that though they wrote their name on the face sheet, the responses in the questionnaire would not influence their course evaluation. They had responded to the questionnaire in their classroom before their lesson began. As for the speaking test, the collection of data took place in October of 2004. On arrival at the testing room, the participants were individually given the instruction of the test. After performing the task, they individually responded to the questionnaire.

### **4.5 Measurement of Spoken Language**

The performances of the participants' are quantitatively analyzed from the perspective of fluency, complexity, and accuracy, based on the recent researches that investigated the second

language learners' speech (Foster and Skehan, 1996; Iwashita, McNamara, and Elder, 2001; Ano, 2001; Yuan and Ellis, 2003).

Fluency is operationalized as the frequency of reformulation, repetition, and pause<sup>1</sup>, the total number of words, and word per minute. Pause is defined as a break of more than 1.0 second (Foster and Skehan 1996). All the component parts of fluency are factor analyzed, and the factor score is used as the index of fluency.

Complexity is operationalized as word per clause and type-token ratio. The two components parts of complexity are factor analyzed, and the factor score is used as the index of complexity.

Accuracy is operationalized as error-free clause divided by the total number of clauses. Table 1 summarizes the measures for the performance used in this study.

Table 1  
*Summary of Measures for the Performances*

Fluency	Complexity	Accuracy
Word per minute	Word/clause	EFC/total clause
Total words	Type-token ration	
Repetition		
Reformulation		
Pause		

#### 4.6 Analysis

Firstly, the items in the questionnaire are factor analyzed, and the factor scores are calculated. Secondly, in order to examine the effect of the planning conditions on test anxiety and test-takers' reactions, one-way analysis of variance is performed. Lastly, the relationships among the performances, test-takers' reactions, and language anxiety are examined by multi-regression analysis.

### 5 Results

#### 5.1 Items Measuring Test Anxiety

For Test Anxiety, Table 2 shows the descriptive statistics, and Table 3, the result of factor analysis.

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<sup>1</sup> The frequency is calculated by the formula  $\frac{Y}{(1+X)}$ , where Y is the total number of words, and X is the total number of reformulation, repetition, and pause.

Table 2  
*Descriptive Statistics for Test Anxiety*

Item	<i>N</i>	Range	Min	Max	<i>M</i>	<i>SD</i>
1	66	5	1	6	3.16	1.60
2	66	4	2	6	5.04	1.32
3	66	5	1	6	2.41	1.33
4	66	5	1	6	5.45	1.06
5	65	5	1	6	4.07	1.63
6	66	5	1	6	2.77	1.56
7	66	5	1	6	3.95	1.61
8	65	5	1	6	2.75	1.43
9	66	4	1	5	1.86	1.12
10	65	5	1	6	4.16	1.60
11	65	5	1	6	5.11	0.97
12	65	5	1	6	2.63	1.15

Because the means and standard deviations of items 2, 4, 11 indicated a ceiling effect, they were deleted. Item 2 is “It was difficult for me to arrange what I know during the test”. Item 4 is “I did well in this test”. Item 11 is “I could think straight during the test”. After deleting the four items, the remaining items were factor analyzed. The result is presented in Table 4.4

Table 3  
*Factor Loadings for Test Anxiety*

Item	Factor loading		<i>h</i> <sup>2</sup>
	1	2	
6	<b>.84</b>	-.09	.64
12	<b>.73</b>	-.10	.48
9	<b>.68</b>	.07	.51
3	<b>.63</b>	.16	.50
10	-.28	<b>.91</b>	.68
8	.35	<b>.56</b>	.61
1	.14	<b>.53</b>	.36
7	.11	<b>.50</b>	.32
5	.01	<b>.48</b>	.23
Eigenvalues	3.22	1.12	
% of Var.	35.79	12.46	

*Note.* Factor loadings of above .40 are boldfaced.

Two factors were extracted. Then, the oblique rotation was done to gain a promax solution. Factor 1 was named “Social stigmatization”, and Factor 2 “Tension during the test” based on Matsubara et al. (2000). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .72. The Bartlett’s spherical test was 174.94 (*df* = 36, *p* < .01, two-tailed). The Bartlett’s spherical test and the measurement of sample suitability and KMO confirm the suitability of the data. Cronbach’s alphas of the items in “Social stigmatization” and “Tension during the test” are .81, .77 respectively. The factor scores of each factor were calculated.

## 5.2 Relationship between Language Anxiety and English Proficiency

The variables of test anxiety are the score of “Social stigmatization” and “Tension during the test”. The variables of English proficiency examined are fluency, accuracy, and complexity observed in the speaking test. These variables are analyzed in two steps. First, the correlation coefficients are calculated. Then, the variables between which a causal association might be confirmed are selected, based on the correlation matrix. The correlation coefficients of these variables are presented in Table 4.

Table 4  
*Correlation Coefficients for Proficiency and Test Anxiety*

	1	2	3	4	5
1. Social stigmatization	1	.29*	-.04	-.23	-.23
2. Tension		1	-.16	-.36**	-.10
3. Fluency			1	-.05	.09
4. Accuracy				1	.21
5. Complexity					1

Note. \* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.  $N = 56$ .

## 6 Summary

This study only found the poor predictor of English proficiency, though many studies on language anxiety found high correlation between anxiety and foreign language proficiency. Even if that is the case in the context of Japan, researches in reducing anxiety should be done.

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