Differences in Effects of Student Major on Affective Components of Language Learning

Tomoka Noguchi[1] and Nami Iwaki[2]

[1]School of Health Sciences, Gifu University of Medical Science

[2]Education Center for International Students, Nagoya University

`noguchi@u-gifu-ms.ac.jp, iwaki@ecis.nagoya-u.ac.jp`

Abstract

This study examines the affective components of language learning, including language anxiety and perceived competence in English, of two Japanese student groups differentiated by their major of study. Through the comparison of different majors, this study aims to uncover important perspectives regarding motivating students of specific majors to engage in study abroad. The results show that there are differences in students' affective components, depending on their majors. The findings suggest that there is a need to scrutinize what specific affective factors relate to student's majors with a view to developing a training program to reduce anxiety and build perceived competence in English.

Keywords

Study abroad, Foreign language anxiety, Perceived competence in English, Japanese college students

Introduction

These days, there are many Japanese students going abroad to study other languages and experience other cultures. According to the Organization For Economic Co-operation and Development (OECD) and the Ministry of Education, Culture, Sports, Science and Technology (MEXT) [1], about 75 thousand Japanese students went abroad in 2007, and around 60% of them went to study in English-speaking countries. Needless to say, it is a great learning experience for students to stay in other countries for a while. However, it is possible that the students' affective factors in English may vary according to their majors. Therefore, we presume that analyzing students' affective factors toward communication in English depending on their majors before studying abroad would be beneficial since it would help them to make the best use of their learning experiences.

1. Methods

1.1 Participants

The students were participants in a short-term study abroad program during the Spring Term 2011. There were 40 students majoring in medical science (Group A), and another 19 students from a comprehensive university majoring in various disciplines (Group B), and enrolled in intensive English language programs.

1.2 Procedures and Measures

The participants were asked to complete a background questionnaire and Foreign Language Classroom Anxiety Scale and a measure of Perceived Competence before going abroad. The Foreign Language Classroom Anxiety Scale (FLCAS) and Perceived Competence Scale (PCS) were utilized to measure the affective components of language learning. The FLCAS, developed by Horwitz, Horwitz and Cope (1986), is a self-report measure of language learners' feelings of anxiety in the foreign language classroom, consisting of 33 statements. The PCS, consisting of 12 items, was developed by MacIntyre and Charos (1996). It constituted the measure of self-judgment of communication competence. For both Group A and Group B, the data collection was done one week prior to their departure abroad. The students were asked to complete a background questionnaire and the FLCAS and PCS.

2. Data analysis

2.1 Background

A background questionnaire was used to obtain information about the participants in this study (Table 1). It showed that both groups had similar experiences and attitudes towards English on the whole.

---

[1]http://www.mext.go.jp/component/a_menu/education/detail/__icsFiles/afieldfile/2011/05/12/1286521_4.pdf

Table 1. Results of the Background Questionnaire

	Group A	Group B
English Conversation Class		
Yes	6 (15%)	3 (15.8%)
No	34 (85%)	16 (84.2%)
English Speaking Friends		
Yes	1(2.5%)	3 (15.8%)
No	39 (97.5%)	16 (84.2%)
Travel Abroad		
Yes	19 (47.5%)	15 (78.9%)
No	20 (50%)	4 (21.1%)
Use English outside class		
Never	27 (67%)	1 (5.3%)
Seldom	9 (22%)	15 (78.9%)
Sometimes	2 (5%)	2 (10.5%)
Often	2 (5%)	1 (5.3%)
Useful for future		
very much	20 (50%)	13 (68.4%)
so-so	15 (37.5%)	6 (31.6%)
not really	3 (7.5%)	0 (0%)
never	1 (2.5%)	0 (0%)
What makes you anxious		
Speaking	20 (50%)	13 (68.4%)
Reading	1 (2.5%)	0 (0%)
Writing	4 (20%)	2 (10.5%)
Listening	8 (20%)	4 (21.1%)

2.2 FLCAS

Descriptive analyses were performed first to investigate the participants' responses to the FLCAS. The FLCAS yielded a composite score ranging from 33 to 165, with a higher score signifying a higher degree of anxiety. In this study, group A test scores ranged from 66 to 146, with a mean of 110.41, and a standard deviation of 16.67. As for group B, test scores ranged from 72 to 119, with a mean of 97.21, and a standard deviation of 14.42. Table 2 below summarizes the FLCAS scores for the two groups. The descriptive statistics indicate that Group A students showed much higher anxiety towards English than Group B students.

Table 2. Descriptive Statistics for FLCAS

	Group A	Group B
Sample size	40	19
Cronbach's alpha	.93	.85
Range	66-146	72-119
Mean	110.41	97.21
Standard deviation	16.68	14.42

In order to examine whether the FLCAS score varied between Group A and Group B, a nonparametric test was conducted. There was a

significant difference between the two groups (U (40, 19) = 162.50, $p < .01$). The results indicate that students in Group A showed much higher anxiety than students in Group B. Next, to examine the results more closely, nonparametric tests were individually conducted for all 33 items. The nonparametric tests yielded the following results (see Table 3). There were significant differences in 12 items.

Table 3. Nonparametric Tests for FLCAS

		Mdn	z	M-Wh. U
F10	Group A	3.40	-3.30	183.00**
	Group B	2.26		
F12	Group A	3.38	-2.47	234.00*
	Group B	2.68		
F13	Group A	3.56	-2.05	254.00*
	Group B	2.89		
F16	Group A	3.43	-2.84	213.00**
	Group B	2.53		
F17	Group A	2.55	-1.99	264.00*
	Group B	2.16		
F18	Group A	4.15	-2.38	252.00*
	Group B	3.63		
F21	Group A	2.63	-3.58	169.00***
	Group B	1.68		
F22	Group A	3.00	-3.01	198.00**
	Group B	2.21		
F25	Group A	3.37	-3.99	143.50***
	Group B	2.21		
F26	Group A	2.89	-2.35	229.00*
	Group B	2.26		
F28	Group A	3.07	-1.96	265.50*
	Group B	2.58		
F30	Group A	3.15	-2.01	261.50*
	Group B	2.63		

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

2.2.1. Factor Analysis
Group A

In order to explore the underlying anxiety factors of the two groups, the 33 items of the FLCAS were subjected to principal components analysis using SPSS. This analysis revealed the presence of three components with eigenvalues exceeding 3, explaining 23.6%, 15.4% and 10.5% of the variance respectively. An inspection of the screeplot revealed a clear break after the third component. Therefore, it was decided to retain three components for further investigation. To aid in the interpretation of these three components, Varimax rotation was performed. The three-factor solution explained a total of 49.5% of the variance, with component 1 contributing 20.1%, component 2 contributing

17.8%, and component 3 contributing 11.6%. Factor 1 consisted of 13 items, with the highest loading being for "It embarrasses me to volunteer answers in my English class". Items loading on this factor consisted of those which reflected students' speaking anxiety. Therefore, Factor 1 was labeled *Speaking anxiety*, with an Alpha Cronbach internal consistency reliability of .83. Factor 2 consisted of 11 items, with the highest loading item being "I get upset when I don't understand what the English teacher is correcting". Items in this factor were related to preparing for the English class. Consequently, Factor 2 was labeled *Worries about classroom preparation*, with an Alpha Cronbach internal consistency reliability of .87. The last factor, which consisted of 6 items, was labeled *Concerns about English class*. The Alpha Cronbach internal consistency reliability for Factor 3 was .40 (Table 4).

Table 4. Summary of Factor Analysis

Group A: Factors/items	Factor		
	F1	F2	F3
Factor 1 Speaking anxiety			
F13	.81		
F32	.88		
F14	.76		
F2	.74		
F9	.71		
F27	.70		
F26	.70		
F28	.62		
F1	.61		
F4	.60		
F29	.57		
F10	.49		
F8	.49		
Factor 2 Worries about classroom preparation			
F15		.90	
F3		.83	
F33		.83	
F12		.79	
F7		.66	
F19		.66	
F24		.59	
F20		.51	
F17		-.46	
F16		.42	
F31		.40	
Factor 3 Concerns about English class			
F6			-.82
F23			.74
F5			-.67
F11			.67
F25			.60
F21			-.47
% of variance	20.1	17.8	11.6
% of total variance			49.51
Items not included			
F18	.00	.13	.22
F22	.26	.17	.01
F30	.26	.14	-.12

Group B

For Group B, Principal components analysis revealed the presence of two components with eigenvalues exceeding 3, explaining 35.9% and 9.92% of the variance respectively. Since the inspection of the screeplot revealed a clear break after the second component, it was decided to retain two components for further investigation. After Varimax rotation was performed, the two-factor solution explained a total of 45.9% of the variance, with component 1 contributing 23.8% and component 2 contributing 22.1%. Factor 1 consisted of 16 items, with the highest loading factor being "I get nervous when the English teacher asks questions that I haven't prepared in advance". The items loaded on this factor are related to not having enough confidence during the English class. Therefore, Factor 1 was labeled *Lack of self-confidence in the English classroom*, with an Alpha Cronbach internal consistency reliability of .78. The second factor consisted of 14 items, with items such as "English moves so quickly I worry about getting left behind" and "I feel more tense and nervous in my English class than in my other classes". Many of the items in this factor seemed to relate to overall English class anxiety. As a result, Factor 2 was labeled *General English classroom anxiety*, with an Alpha Cronbach internal consistency reliability of .74 (Table 5).

Table 5. Summary of Factor Analysis

Group B: Factors/ items	Factor	
	F1	F2
Factor 1 Lack of self-confidence in the English classroom		
F33.	.76	
F14.	.75	
F16	.74	
F11	.73	
F32	.69	
F24	.66	
F22	.66	
F28	.63	
F31	.61	
F15	.60	
F13	.67	
F9	.56	
F12	.56	
F5	-.55	
F8	.53	
F2	.44	
Factor 2 General English classroom anxiety		
F25		.77
F21		.74
F26		.74

F10		.71
F27		.68
F4		.65
F20		.63
F17		.62
F19		.52
F29		.51
F7		.51
F3		.45
F1		.44
F30		.43
% of variance	23.8	22.1
% of total variance		45.9
Items not included		
F6	.23	.01
F18	.37	.25
F23	-.07	.26

The results of the two factor analyses indicated that the construct of FLCAS was different between Group A and Group B. Factor analysis for Group A showed that these students had great anxiety when speaking in the class, and they seemed to be nervous about classroom preparation, as well as taking tests. On the other hand, Group B students were not specifically anxious about certain actions such as speaking or taking tests, but seemed to lack confidence in the classroom environment. These results suggest that different groups of learners show different constructs of FLCAS.

2.3 PCS

Participants indicated their self-assessed competency in each situation and with each receiver using a number between 0 (completely incompetent) and 100 (completely competent). Nonparametric Tests were conducted to investigate if there were differences between Group A and Group B in their perceived competence in English in 7 situations. As for total situations, there was a significant difference between the two groups (U (40, 19) = 533.50, p < .01).

Furthermore, the results of examining each situation strongly supported the findings that Group B had much perceived competence in English in all situations, which implies that Group B was more likely to have confidence in communicating in English than Group A regardless of the situation (Table 6).

Table 6. Nonparametric Tests for PC

		Mdn	*z*	*M-Wh. U*
Public	Group A	25.49	2.60	527.00**
	Group B	37.74		
Meeting	Group A	25.71	2.46	518.50*
	Group B	37.29		
Group	Group A	26.24	2.11	497.50*
	Group B	36.18		
Dyad	Group A	25.31	2.71	534.00**
	Group B	38.11		
Stranger	Group A	25.95	2.30	509.00*
	Group B	36.79		
Acquaintance	Group A	25.41	2.64	530.00**
	Group B	37.89		
Friend	Group A	25.86	2.36	512.50*
	Group B	36.97		

*p<.05**p<.01

3. Discussion

This study revealed that there were several differences in the affective components of language learning depending on students' majors. As for students' anxiety, Group A was more likely to have a specific anxiety toward English, such as being afraid of speaking in a classroom environment and being nervous about preparation for an English class, whereas Group B had a tendency to be anxious about English classes in general. Regarding their perceived English competence in 12 situations, the students in Group B perceived their English competence in all situations to be significantly higher than did the students in Group A.

These findings suggest that not all students wanting to study abroad have similar anxiety factors and perceived competence in English. In order for students to have more fulfilling experiences overseas, it may be necessary to develop a pre-training program taking account of their majors and interests in order to reduce anxiety and give them more confidence in communicating in English before studying abroad.

4. References

Horwitz, E., Horwitz, M., & Cope, J. A. (1986). Foreign language classroom anxiety. *The Modern Language Journal 70,* 125-132.

MacIntyre, P., & Charos, C. (1996). Personality, attitudes, and affect as predictors of second language communication. *Journal of Language and Social Psychology, 15,* 3-16.