

SEM: Relationships Among EFL Motivation and Proficiency Factors

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Second language acquisition researchers have been greatly interested in the relationship between motivation and language learners' proficiency. Early studies identified two learning motivation orientations, integrative and instrumental, in second language learners with the former orientation considered as more advantageous to language learning. However, research results on the question of integrative versus instrumental attitudes and motivation in language proficiency have been mixed and contradictory. Researchers now see motivational orientation(s) as emerging and varying from one learning context to another (Clement & Kruidenier, 1983; Crookes & Schmidt, 1991; McGroarty, 1996; Oxford & Shearin, 1994).

For teachers, the origin and extent of their students' motivation to learn a language demands consideration for "without knowing where the roots of motivation lie, how can teachers water those roots?" (Oxford & Shearin, 1994, p. 15).

The purpose of this study was to determine possible factors which contribute to and influence motivation in Japanese students' EFL learning, and to create a reliable and valid instrument to measure aspects of this motivation.

We took Kunnan's (1994) approach to construct validation using structural equation modeling (SEM) analysis. SEM brings together multiple regression, path analysis and factor analysis to offer a "mechanism to hypothesize relationships between constructs and measured variables and among constructs based on substantive theory" (Kunnan, 1998, p. 2). We investigated the relationships between EFL students' motivation as measured by a researcher-developed instrument controlling for their performance on a proficiency test, the Comprehensive English Language Test (CELT) (Harris & Palmer, 1986).

Method

Participants

A total of 110 Japanese university students from a private women's school in Tokyo and a private co-ed institution in Saitama participated in this study. The Tokyo women's university students, 38 juniors, ages 20 to 21, were English/English Literature or Intercultural Studies majors enrolled in a teacher-training program. All of the women students, but one, a returnee from Brazil, were Japanese speakers. The Saitama co-ed university students who were all Japanese speakers, 15 females and 57 males, ages 19 to 22, included first-, second-, and third-year Economics majors in elective English classes.

Instruments

Comprehensive English Language Test. According to a review by Oxford (1987), CELT was designed for high school, college, and adult nonnative speakers of English at the intermediate and advanced levels to assist in the placement and assessment of progress in ESL and EFL courses.

The 1986 edition of CELT consists of parallel forms, Form A and Form B, which Oxford (1987) reported as appearing to be "parallel and interchangeable" (p. 23). Form A was used in this study. Each form has three sub-sections, Listening (40 minutes), Structure (45 minutes), and Vocabulary (35 minutes), and is scored on the percentage of items answered correctly, with omitted items scored as incorrect.

CELT was chosen by the researchers for this study because it was easily available to them, and easy to administer and score. Furthermore, Oxford (1987) described this proficiency test as "reliable, valid, and useful for nonnative speakers of English" (p. 24).

An internal consistency estimate, the theta coefficient, which is based on principal components analysis, was calculated for the CELT sub-tests. Following Zeller and Carmines (1980, p. 61), a principal components analysis using a listwise deletion procedure was run on the three sub-tests. A listwise procedure was used in order to get the total number of students who took all three sub-tests. The Listening, Structure, and Vocabulary tests loaded strongly (all over .80) on one factor and the eigenvalue, 2.04074, along with the number of students who took all sub-tests, was converted to theta resulting in a coefficient of .52 ($n = 83$). The low n size was due to student absences on one or both of the class sessions on which the sub-tests were administered. According to Ary, Jacobs, and Razavieh (1990), "if the measurement results are to be used for making a decision about a group or even for research purposes, a lower reliability coefficient (in the range of .30 to .50) might be acceptable" (p. 282).

Motivation Questionnaire. Following, generally, the stages and steps in the construction of research instruments proposed by Griffiee (1997) and O'Bryen (1996), the researchers developed a questionnaire on student motivation in learning English as a foreign language.

After examining the literature on motivation studies in ESL and EFL settings, the researchers adopted the assumption that a variety of factors contribute to and influence motivation for foreign language learning. They compiled a list of items in English based on several motivation studies (Johnson, 1996; Johnson & Takeo, 1996; Schmidt, Boraie, & Kassabgy, 1996), and their intuition as experienced EFL teachers in the Japanese educational system. This list was divided into components adapted from the models of motivation described in Crookes and Schmidt (1991) and Schmidt, Boraie, and Kassabgy (1996) resulting in a six-component 45-item questionnaire. The six components were Extrinsic Motivation, Intrinsic Motivation, Attitudes Toward the English Language, Motivational Strength,

Expectancy/Control, and Anxiety (see Appendix A). (In addition, four open-ended questions were appended to the questionnaire.)

The researchers decided to translate the questionnaire into Japanese, keeping in mind that the translated version would not be exactly analogous to the original English version. Knowing their students' limited reading comprehension ability in English, they thought that a translated version would capture more accurate responses than the English version.

One of the researchers, a native speaker of Japanese, translated the questionnaire items into Japanese. The items were then back translated into English by two other native speakers of Japanese, both experienced EFL teachers, who were also asked to check for and change any awkward Japanese expressions. The original English version and back translations were compared by the researchers and a few changes in wording and expressions were made on both the English and Japanese questionnaires. The Japanese questionnaire items were then randomly ordered. Finally, a Japanese/English bilingual American EFL teacher (a colleague of one of the researchers at the Saitama co-ed university) read both the Japanese and English questionnaires checking the clearness and appropriateness of the items. Several words and expressions were then changed or corrected by the researchers.

The questionnaire (see Appendix B) used a five-point Likert-scale by which students indicated how much they agreed with each item: 5 = *I completely agree (mattakusonotooridearu, mattakusouomou)*, 4 = *I agree (sonotooridearu, souomou)*, 3 = *I neither agree nor disagree (dochiratomoienai)*, 2 = *I disagree (soudewanai, souwaomowanai)*, and, 1 = *I completely disagree (mattakusoudewanai, mattakusouomowanai)*. All items, except the Anxiety items, were worded positively. Since the items in the Anxiety component were worded negatively, they were reverse scored when the response data were input onto a spreadsheet for analysis. Our goal was to consolidate the survey into interpretable indicators and factors.

A principal components analysis of the responses to the 45 items by the 110 university students extracted 11 factors which were largely uninterpretable. A factor analysis with varimax rotation extracted 12 factors which were also difficult to interpret. Next, a factor analysis with varimax rotation and forced extraction of six factors was run on the data. The number of factors, six, was used for the forced extraction because the motivation instrument was formulated to have six components. Twenty-nine items, with loadings higher than .30, which loaded most meaningfully on the six factors were chosen by the researchers. According to Hatch and Lazaraton (1991, p. 494), a loading of .30 or above is considered an acceptable link between an item and a factor. A subsequent factor analysis with varimax rotation and forced extraction of six factors was run on the 29 items. Five items were then eliminated because they were uninterpretable and another factor analysis was run on the remaining 24 items. From this final factor analysis, 19 items which loaded on the first four factors were selected on the basis of their high loadings and interpretability (see Table 1). The last two factors were eliminated because the items which loaded on them with higher than .30 values did not coalesce into meaningful categories. The final 19 items comprised four components, two of which were

renamed by the researchers as Perceived Effort (Effort) and Desire to Speak to Native Speakers (Desire).

Table 1. Factor Analysis Results

	1	2	3	4	5	6
	<u>Effort</u>	<u>Attitudes</u>	<u>Desire</u>	<u>Anxiety</u>		
Q06	.113	.682*	.352	.087	.011	.122
Q08	.068	.113	.721*	-.040	.015	.129
Q09	-.088	.139	.006	.013	.066	.860
Q13	.056	.512*	.318	.040	.329	.102
Q14	.224	.034	.774*	.110	.016	.108
Q18	.239	.620*	.089	.115	.172	.085
Q20	.371	.766*	.001	.171	.092	.060
Q22	.110	.117	.708*	.162	.021	.181
Q23	-.051	.071	.614*	.155	.010	.100
Q24	.029	.180	.704*	.110	.070	.128
Q26	.008	.22	.184	.040	.820	.023
Q27	.284	.734*	.054	.113	.052	.103
Q28	.725*	.318	.128	.110	.032	.061
Q31	.592*	.603	.164	.030	.076	.071
Q33	.783*	.266	.069	.111	.063	.078
Q34	.617*	.400	.212	.158	.031	.306
Q35	.519	.122	.105	.063	.510	.369
Q36	.782*	.058	.083	.014	.163	.014
Q38	.188	.075	.274	.167	.520	.117
Q39	.383	.032	.144	.310	.187	.530
Q41	.164	.255	.053	.742*	.038	.058
Q42	.020	.038	.041	.841*	.067	.025
Q43	-.130	.149	.132	.724*	.031	.166
Q45	-.135	.098	.101	.845*	.044	.072

Note. Q = Question. Items in bold are the final 19-items. Loadings over .30 are in bold. Loadings marked with asterisks are the loadings chosen for the final four factors.

The category names, Attitudes Toward the English Language (Attitudes) and Anxiety, remained the same (see Table 2 and Appendix C). Pairwise procedures were run on all above analyses in order to maximize the amount of data used.

An internal consistency estimate, the theta coefficient, was also calculated for each of the four components of the final 19-item questionnaire. Following the Zeller and Carmines (1980, p. 61) procedure used above, a principal components analysis using a listwise procedure was run on each of the four components. The theta coefficient calculated for Effort ($n = 109$) was .70, for Attitudes ($n = 110$) .63, for Desire ($n = 110$) .63, and for Anxiety ($n = 109$) .62. These coefficients may be considered acceptable since they are favorably comparable to coefficient values given in other motivation studies as for example, the 1996 study by Schmidt, Boraie, and Kassabgy (Ary, Jacobs, & Razavieh, 1990, p. 281).

Table 2. Descriptives for 19-item Motivation Questionnaire

Subsets/Items	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
<u>Perceived effort</u>				
(Theta = .70, <i>n</i> = 109)				
28. I try to use English in daily life.	2.8	1.02	-0.02	0.30
31. I look for as many opportunities to use English as I can.	3.1	1.13	-0.12	0.69
33. I try to learn English not only in the classroom but also from other sources such as English newspapers and magazines.	2.7	1.11	-0.04	0.92
34. I try to learn English not only in the classroom but also from other sources such as English films and videos.	3.2	1.14	-0.31	0.64
36. I spend extra time to improve my English.	3.0	1.03	-0.06	0.32
<u>Attitudes toward the English language</u>				
(Theta = .63, <i>n</i> = 110)				
8. Being able to speak English will impress other people.	4.4	.75	-1.61	3.66
14. I think it is worthwhile to study English.	4.4	.68	-0.82	0.32
22. English is a very important subject.	4.5	.63	-1.00	0.05
23. Japanese people find value in being able to speak English.	4.4	.74	-1.48	3.42
24. English is necessary in today's "international" world.	4.6	.55	-0.88	0.28
<u>Desire to speak to native speakers</u>				
(Theta = .63, <i>n</i> = 110)				
6. I want to make foreign friends.	4.4	0.97	-1.74	3.07
13. Being able to speak English will help me associate equally with foreigners.	3.6	1.09	-0.45	0.36
18. I can become more open when I speak English.	2.7	0.98	0.04	0.36
20. Speaking English with native speakers is enjoyable.	3.8	1.02	-0.49	0.22
27. I practice English whenever I have an opportunity to speak it with a native speaker(s) of English.	3.7	1.14	-0.42	0.35
<u>Anxiety</u>				
(Theta = .62, <i>n</i> = 109)				
41. I feel uncomfortable if I have to speak in my English class(es).	3.6	1.03	-0.40	0.25
42. It embarrasses me to volunteer answers in my English class(es).	2.9	1.07	0.17	0.35
43. I am afraid other students will laugh at me when I speak English.	3.0	1.20	0.08	0.84
45. I don't like to speak often in my English class(es) because I am afraid of what my classmates will think of me.	3.4	1.08	-0.22	0.49

Procedures

Due to the combined length (120 minutes+) of the CELT sub-sections, the CELT and the Motivation Questionnaire (45-item Japanese Version) were administered in two 90-minute class sessions to the Saitama university students by one of the researchers, who had three elective English classes (48 students total), and one of her university colleagues, who had two elective English classes (24 students total) in November and December 1997. The students took about 10 to 15 minutes to complete the questionnaire.

The other researcher, who gave the CELT sub-tests and the 45-item Japanese Motivation Questionnaire to the 38 Tokyo women's school students, also took two 90-minute class sessions in November and December 1997 to administer the CELT tests. The questionnaire was given to the 38 students to take home to complete and a week later all 38 students returned their questionnaires.

All participants at both schools read and signed forms giving their consent to participate in the research before the administration of the CELT and the 45-item Motivation Questionnaire.

Analysis and Results

The Motivation Model

Using EQS (Bentler & Wu, 1995), relationships were examined between Motivation, a second-order latent variable and three first-order variables: (a) Effort, a latent variable with five indicators, Motivation Questionnaire Items 28, 31, 33, 34, and 36; (b) Attitudes, a latent variable with five indicators, Items 8, 14, 22, 23, and 24; and (c) Desire, a latent variable with five indicators, Items 6, 13, 18, 20, and 27. Two other latent variables, Anxiety with four indicators, Items 41, 42, 43, and 45; and CELT, which represents our proficiency construct with three indicators, sub-tests Listening, Structure, and Vocabulary, were used as control variables on Motivation. The hypothesized model is presented in Figure 1. Ovals represent latent variables, rectangles represent measured variables. E1 stands for the residual error for variable 1 (Listening), E2 means the residual error for variable 2 (Structure), and so on. The paths not marked with an asterisk are fixed paths.

Figure 1 illustrates the hypothesis that Effort, Desire, and Attitudes contribute to and constitute the Motivation construct. The paths between CELT and Motivation and between Anxiety and Motivation were fixed thus making CELT and Anxiety covariates of Motivation.

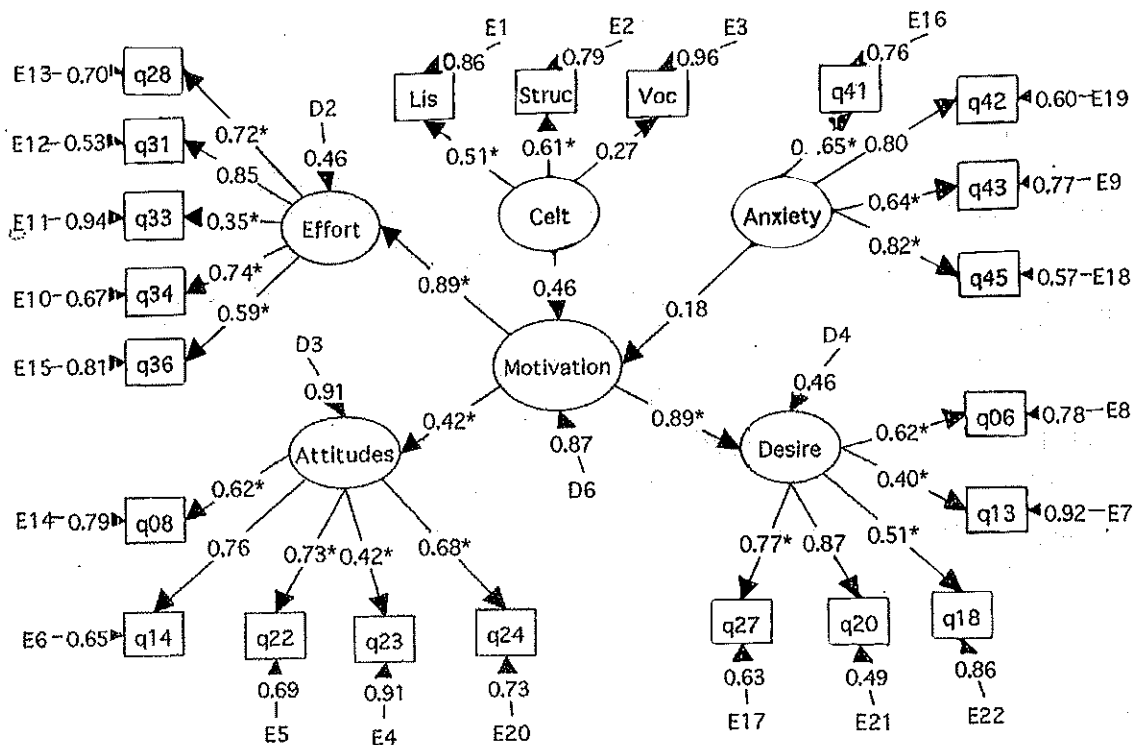


Figure 1. Path diagram illustrating the Motivation Model.

Assumptions

Distribution of values and normality. SEM procedures assume normal distribution of data. Univariate normality was checked by examining the skewness and kurtosis of the measured variables (see Tables 2 and 3). Kunnan (1998, p. 30) cautions that skewness and kurtosis values should generally be under ± 2 . Since the kurtosis values for Questions 8, 23, and 6 were higher than 2, histograms for these measured variables were visually checked. Their distributions were found to be not adversely nonnormal. "Multivariate normality can be checked by observing the skewness and kurtosis for all the measured variables together....EQS provides two mardia coefficients and case numbers of the data with the largest contribution to normalized multivariate kurtosis" (Kunnan, 1998, p. 4). We were not able to strictly meet the assumption of multivariate normality.

Table 3 Descriptives for CELT

<u>Sub-section</u>	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Listening (<i>n</i> = 102)	44.9	11.8	0.89	1.38
Structure (<i>n</i> = 93)	51.1	11.4	0.13	0.66
Vocabulary (<i>n</i> = 98)	35.2	8.2	0.65	0.79

Linearity. "Linearity among latent variables is difficult to assess; however, linear relationships among pairs of measured variables can be assessed through inspection of scatterplots" (Tabachnick & Fidell, 1996, p. 716). The researchers examined 231 scatterplots of the measured variables and found that none of the pairs of variables had a curvilinear relationship.

Sample size. SEM, like factor analysis, requires a large sample size. Tabachnick and Fidell (1996) caution that the general rule of thumb is to have 300 cases. Kunnan (1998) states that sample sizes of less than 150 cannot assure stable estimates or representativeness. In this study, after data from 110 participants were input, EQS generated a covariance matrix with 106 cases using a listwise deletion procedure.

Model Estimation

The hypothesized Motivation Model (Figure 1) was tested. The EQS output indicated that no special problems were encountered in the estimation. A significant chi-square value was found ($p < .001$) which indicates that the observed matrix and the estimated matrix differ and that this difference is due to sampling variation (Schumacker & Lomax, 1996, p. 124)(see Table 4). The preferred statistically nonsignificant chi-square would indicate that there is model fit (although other models may be found to also have model fits) (Schumacker & Lomax, 1996, p. 125). The normed chi-square, calculated as the chi-square statistic divided by the associated degrees of freedom, can also be used as an index of model fit, with a ratio of less than 5 suggesting an adequate fit (Sasaki, 1993, p. 331). The chi-square/df ratio for this model is 1.39 indicating an adequate fit. Other goodness-of-fit (GOF) indices are formulated to range in value from 0, meaning *no fit*, to 1, meaning *perfect fit*, with values .90 or higher considered acceptable (Schumacker & Lomax, 1996, p. 120). The GOF criteria for this EQS analysis (see Table 4) did not reach or exceed the acceptable level, but was very close at .891.

In Figure 1, as mentioned above, the paths point from CELT to Motivation and from Anxiety to Motivation and are fixed, thus making CELT and Anxiety covariates in the equation. The critical paths, or paths of interest, are the paths with arrows pointing from Motivation to Effort, Motivation to Attitudes, and Motivation to Desire.

Table 4 Goodness-of-fit Indices for the Motivation Model (N = 106)

chi-square		285.465
$p <$.001
chi-square/degrees of freedom	285.465/205 =	1.39
Bentler-Bonett Normed Fit Index		.704
Bentler-Bonnet Nonnormed Fit Index		.877
Comparative Fit Index		.891

Direct Effects

Desire (standardized coefficient = .89), and Effort (standardized coefficient = .89) had strong path estimates from Motivation while the path to Attitudes (standardized coefficient = .42) from Motivation was less strong. The parameter between CELT (standardized coefficient = .46) and Motivation showed that these variables shared some variance. Anxiety (standardized coefficient = .18) had a very weak relationship with Motivation.

Discussion

Our quest for a better understanding of Japanese university students' engagement in EFL learning has brought us to a model, albeit a limited one, of the students' motivation. With the students' language proficiency, a product of their experience, and their language classroom anxiety, a product of their personalities, held constant, we can see that the students' motivation, or what we have labeled as motivation, is substantially related to three variables, their self-assessed effort to learn the language, their desire to speak to native speakers, and their attitudes toward the English language.

Examination of the means for the CELT sub-tests and for each indicator (questionnaire item) of the three variables show that the students are rather low in proficiency and that although the students do not see themselves as energetic learners, they do covet interaction with native speakers and think that English is an important and valuable language. The implication that we need to encourage more student effort in learning seems obvious.

The means for the anxiety indicators reveal that the students' language learning anxiety is not high. It should be noted that anxiety does not appear in this context to be an important factor in motivation. Berwick and Ross (1989) describe Japanese university freshmen as "exam-worn" survivors with little or no motivation to learn or study once university entrance examinations are over (p. 206). It may be that the stakes for success or failure are no longer high for students in a Japanese university milieu.

A little facilitative anxiety may need to be induced in the students. It was observed by one of the researchers that some of her students at the Tokyo women's university who were

anxious about an upcoming homestay in the U.S. and worried about their speaking skills decided to take extra conversation classes.

Berwick and Ross (1989) note that motivation increases in adult post-university learners who take English conversation classes to help them in their work-related or travel purposes. Motivation may also increase in third or fourth-year students who are preparing for employment interviews and who may wish to add English proficiency test scores to their resumes.

The path coefficients or parameter estimates for this structural equation model provide information on the reliability and validity of our instruments (Sasaki, 1993, p. 338). The coefficients, ranging from .27 to .87, for the paths from the first-order variables (CELT, Effort, Attitudes, Desire, and Anxiety) to the measured variables suggest that these observed variables are reliable measures of what they were hypothesized to measure. The paths from the second-order variable, Motivation, to the first-order variables, Effort and Desire, had relatively high estimates, both .89, suggesting high validity for these hypothesized factors. The path from Motivation to Attitudes, and the path from CELT to Motivation, .42 and .46 respectively, were only moderately strong, thus indicating relatively lower validity for these factors.

The instruments, CELT and the 19-item Motivation Questionnaire, are reliable and valid only for the sample of students in this study. Since the chi-square statistic was found to be significant, we cannot generalize our findings to the whole population of Japanese EFL students nor ensure the reliability and validity of the instruments if they are used with other populations.

Limitations

Several limitations of this study should be noted:

1. Although structural equation modeling requires a large sample size, we were unable to meet this design requirement. Future studies should meet this assumption.
2. The assumption of multivariate normality was not strictly met.
3. Since the questionnaire items, except the Anxiety items, were worded positively, there is a possibility of a response set in the data. The students may have been trying to answer consistently; their responses to the five Attitudes items were uniformly positive. The histograms of the measured variables for Attitudes show that the data were slightly negatively skewed. This may, however, show this population sample as it really is—a group with positive attitudes.
4. The final Motivation Questionnaire data used in the SEM analysis were comprised of only 4 components and 19 items, resulting in a rather limited model of motivation.

Conclusion

The researchers have discovered a little more about our students' motivation for EFL learning, and we have established the reliability and provided some support for the validity of

the 19-item Motivation Questionnaire and the CELT for our population of learners. Our cross-sectional, small sample-size study was exploratory in practice and limited in findings. However, these findings, especially the strong relationships between Motivation and Effort, and between Motivation and Desire to Speak to Native Speakers of English, might encourage teachers to reexamine how their own students' motivational factors in EFL learning affect their language development. A next step may be a longitudinal study using pre- and post- proficiency tests in order to observe how and if student engagement and persistence in EFL learning change over time and instructional experience.

Other ways of investigating and reaching a deeper understanding of the complexity and uncertainty in the human endeavor of language learning may include exploring motivation using a qualitative approach. For example, motivation in learning, reevaluated as social identity and investment in learning, can be examined within a social context framework (e.g., McKay & Wong, 1996; Peirce, 1995).

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References

- Ary, D., Jacobs, L., & Razavieh, A. (1990). *Introduction to research in education* (4th ed.). Harcourt Brace.
- Bentler, P. M., & E. J. C. Wu. (1995). EQS (Mac Version 5.0) [Computer software]. Encino, CA: Multivariate Software, Inc.
- Berwick, R., & Ross, S. (1989). Motivation after matriculation: Are Japanese learners of English still alive after exam hell? *JALT Journal*, 11 (2), 193-210.
- Clement, R., & Kruidenier, B. G. (1983). Orientations in second language acquisition: The effects of ethnicity, milieu, and target language on their emergence. *Language Learning*, 33 (3), 274-291.
- Crookes, G., & Schmidt, R. W. (1991). Motivation: Reopening the research agenda. *Language Learning*, 41 (4), 469-512.
- Griffiee, D. T. (1997). Validating a questionnaire on confidence in speaking English as a foreign language. *JALT Journal*, 19 (2) 177-197.

- Harris, D. P., & Palmer, L. A. (1986). *Comprehensive English language test*. New York, NY: McGraw-Hill Book Company.
- Johnson, J. (1996). Learning orientations, motivation and EFL proficiency in first-year Japanese university students. *Temple University Japan Working Papers in Applied Linguistics*, 8, 50-58.
- Johnson, J., & Takeo, M. (1996). Learning orientations and motivational strength in Japanese university students. *Temple University Japan Research Studies in TESOL*, 3, 1-10.
- Kunnan, A. J. (1994). Modelling relationships among some test-taker characteristics and performance on EFL tests: an approach to construct validation. *Language Testing*, 1 (3), 225-252.
- Kunnan, A. J. (1998). An introduction to structural modeling for language assessment research. To appear in *Language Testing*.
- McGroarty, M. (1996). Language attitudes, motivation, and standards. In S. L. McKay & N. H. Hornberger (Eds.) *Sociolinguistics and language teaching*, (pp. 3-46). Cambridge: Cambridge University Press.
- McKay, S. L., & Wong, S. C. (1996). Multiple discourse, multiple identities: Investment and agency in second-language learning among Chinese adolescent immigrant students. *Harvard Educational Review*, 66 (3), 577-608.
- O'Bryen, P. (1996). Using questionnaires to assess motivation in second language classrooms. *University of Hawai'i Working Papers in ESL*, 14 (2), 73-125.
- Oxford, R. (1987). Comprehensive English Language Test. In C. J. Alderson, K. J. Krahnke, & C. W. Stansfield (Eds.) *Reviews of English language proficiency tests*, pp. 22-24. Washington DC: TESOL.
- Oxford, R., & Shearin, J. (1994). Language learning motivation: Expanding the theoretical framework. *The Modern Language Journal*, 78 (1), 12-28.
- Peirce, B. N. (1995). Social identity, investment and language learning. *TESOL Quarterly*, 29, 9-31.
- Sasaki, M. (1993). Relationships among second language proficiency, foreign language aptitude, and intelligence: A structural equation modeling approach. *Language Learning*, 43 (3), 313-344.
- Schmidt, R., Boraie, D., & Kassabgy, O. (1996). Foreign language motivation: Internal structure and external connections. *University of Hawai'i Working Papers in ESL*, 14 (2), 1-72.
- Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). HarperCollins College Publishers.
- Zeller, R. A., & Carmines, E. G. (1980). *Measurement in the social sciences*. Cambridge: Cambridge University Press.

Appendix A. English Version 45-item Motivation Questionnaire

Japanese Questionnaire Item No./English Questionnaire Item No.

EXTRINSIC MOTIVATION

- 1/1 Learning English will help me understand my culture better.
15/2 Learning English will help me on English proficiency tests like the EIKEN, TOEIC, and TOEFL.
12/3 Being able to speak English is valuable.
45/4 If I acquire English, I will have more job opportunities.
29/5 I want to learn English because it is useful when travelling in many countries.
14/6 I want to make foreign friends.
44/7 Being able to speak English will make me appear more "international."
28/8 Being able to speak English will impress other people.
43/9 My parents want me to study English.
13/10 I want to be able to write letters in English.
27/11 I want to keep a diary in English.
11/12 I am learning English because I want to spend a period of time in an English speaking country.
10/13 Being able to speak English will help me associate equally with foreigners.

INTRINSIC MOTIVATION

- 9/14 I think it is worthwhile to study English.
26/15 I enjoy learning English very much.
42/16 Learning English is a challenge that I enjoy.
25/17 Speaking English is exciting.
41/18 I can become more open when I speak English.
8/19 I am keen on studying English.
40/20 Speaking English with native speakers is enjoyable.
24/21 Learning English is important for me because I want to use English in my future job.

ATTITUDES TOWARD THE ENGLISH LANGUAGE

- 7/22 English is a very important subject.
6/23 Japanese people find value in being able to speak English.
39/24 English is necessary in today's "international" world.
2/25 English is a challenging subject.

MOTIVATIONAL STRENGTH

- 5/26 I prepare for my English class(es).
33/27 I practice English whenever I have an opportunity to speak it with a native speaker(s) of English.
23/28 I try to use English in daily life.
38/29 I always try to find out the meaning of English words that I don't know.
22/30 I plan to continue studying English for as long as possible.
21/31 I look for as many opportunities to use English as I can.
37/32 I try to learn English not only in the classroom but also from other sources such as radio and TV English programs.
20/33 I try to learn English not only in the classroom but also from other sources such as English newspapers and magazines.
19/34 I try to learn English not only in the classroom but also from other sources such as English films and videos.
36/35 I review what I have learned in my English class(es).
30/36 I spend extra time to improve my English.

EXPECTANCY/CONTROL

- 18/37 My English class(es) will help me improve my English.
31/38 If I do well in my English class(es), it will be because I try hard.
4/39 I expect to do well in my English class(es) because I am good at learning English.
17/40 If I learn a lot in my English class(es), it will be because of the teacher(s).

ANXIETY

- 32/41 I feel uncomfortable if I have to speak in my English class(es).
- 35/42 It embarrasses me to volunteer answers in my English class(es).
- 16/43 I am afraid other students will laugh at me when I speak English.
- 3/44 I often have difficulty concentrating in English class(es).
- 34/45 I don't like to speak often in my English class(es) because I am afraid of what my classmates will think of me.

OPEN ENDED QUESTIONS

- 1. What do you think would make you really want to study English hard?
- 2. What kind of attitude do you think you need to have in order to improve your English?
- 3. What type of English class motivates you to study English?
- 4. What kinds of things would you like to study in English?

Appendix B. Japanese Version 45-item Motivation Questionnaire

英語学習に関するアンケート

A. 下記の文章を読み、なるべく正直にあなた自身に該当する度合（5 = 全くそのとおりである / 全くそう思う 4 = そのとおりである / そう思う 3 = どちらとも言えない 2 = そうではない / そうは思わない 1 = 全くそうではない / 全くそう思わない）に○印をつけてください。なお、このアンケートの結果は、クラスの成績等には一切影響はありません。

	全くそのとおりである (全くそう思う) 5	そのとおりである (そう思う) 4	どちらとも言えない (そうでもない) 3	そうではない (そうは思わない) 2	全くそうではない (全くそう思わない) 1
1 英語の勉強は自分の国の文化を理解するのに役立つ。	5	4	3	2	1
2 英語は挑戦しがいのある科目である。	5	4	3	2	1
3 英語のクラスで授業に集中するのは、自分にとって難しい。	5	4	3	2	1
4 英語の勉強は得意なので、英語のクラスで良い成績を上げられると思っている。	5	4	3	2	1
5 英語の授業の予習をする。	5	4	3	2	1
6 日本人は『英語が話せる』と言うことは、価値があることだと思っている。	5	4	3	2	1
7 英語はとても重要な科目である。	5	4	3	2	1
8 英語の勉強を一生懸命にしている。	5	4	3	2	1
9 英語を勉強することは価値があると思う。	5	4	3	2	1
10 英語が話せると外国人と対等に付き合える。	5	4	3	2	1
11 いつか英語圏に行きたいので英語の勉強をしている。	5	4	3	2	1
12 英語が話せると言うことは価値がある。	5	4	3	2	1
13 手紙を英語で書けるようになりたい。	5	4	3	2	1
14 外国人と友達になりたい。	5	4	3	2	1
15 英語の勉強は英検やTOEIC/TOEFLなどの検定試験に役立つ。	5	4	3	2	1
16 自分の英語を聴いて、他の学生が笑うのではないかと心配してしまう。	5	4	3	2	1
17 英語の授業で自分が多くのことを学べるか否かは、教師次第である。	5	4	3	2	1
18 英語の授業は自分の英語力を高めるのに役立つ。	5	4	3	2	1

	全くそのとおりである (全くそう思う)	そのとおりであ (そう思う)	どちらとも 言えない	そうではない (そうはわない)	全くそうではない (全くそう思わない)
19 映画やビデオを利用して、授業以外でも英語の勉強をしている。	5	4	3	2	1
20 英字新聞や英語の雑誌を利用して、授業以外でも英語の勉強をしている。	5	4	3	2	1
21 英語を使える機会をできるだけ多く探すようにしている。	5	4	3	2	1
22 できる限り英語の勉強は続けるつもりである。	5	4	3	2	1
23 毎日の生活の中で英語を使うように心がけている。	5	4	3	2	1
24 将来、仕事で英語を使いたいので英語の勉強は重要である。	5	4	3	2	1
25 英語を話すことはエキサイティングなことである。	5	4	3	2	1
26 英語を学ぶことはとても楽しい。	5	4	3	2	1
27 日記を英語で書けるようになりたい。	5	4	3	2	1
28 英語が話せるとかっこいい。	5	4	3	2	1
29 いろいろな国を旅行する時に英語は役立つので学びたい。	5	4	3	2	1
30 自分の英語力を高めるために特に時間を作って勉強している。	5	4	3	2	1
31 英語のクラスで良い成績を上げられると言うことは、(つまり)自分が一生懸命努力したということである。	5	4	3	2	1
32 英語のクラスで英語を話さなければならないのは、自分にとって苦痛である。	5	4	3	2	1
33 ネイティブスピーカーと英語を話すチャンスがあれば、進んで話す練習をする。	5	4	3	2	1
34 英語のクラスで他の学生が自分の事をどう思うだろうと考えると、(英語を)あまり話したくない。	5	4	3	2	1
35 英語のクラスで自分から進んで答えるのは恥ずかしい。	5	4	3	2	1
36 英語の授業で習ったことは復習をする。	5	4	3	2	1
37 ラジオやテレビの英語のプログラムを利用して、授業以外でも英語の勉強をしている。	5	4	3	2	1
38 分からない単語があるとかならずその意味を、なにかの方法で理解するようにしている。	5	4	3	2	1
39 英語は今日の国際社会で必要なものである。	5	4	3	2	1
40 ネイティブスピーカーと英語を話すのは楽しい。	5	4	3	2	1
41 英語で話すとき自分をより正直に表現できる。	5	4	3	2	1
42 英語を勉強することは私にとって楽しいチャレンジである。	5	4	3	2	1
43 親の希望で英語を勉強している。	5	4	3	2	1
44 英語が話せると何かより国際人になったように自分が見える。	5	4	3	2	1
45 英語を身につけると就職に有利である。	5	4	3	2	1

B. 下記の質問を読み、良く考えて答えて下さい。余白が足りない場合は裏のページを使ってください。

46. What do you think would make you really want to study English hard?
『本当に一生懸命英語を勉強したい。』という気持ちを自分に起こさせるものは、何んだと思いますか。
47. What kind of attitude do you think you need to have in order to improve your English?
英語の実力を上げるには、自分はどのような態度/姿勢で勉強に取り組む必要があると思いますか
48. What type of English class motivates you to study English?
どのような英語のクラスがやる気を起こしますか。
49. What kinds of things would you like to study in English?
英語で何かを学ぶしたら、どんなことを学びたいですか？

Thank you very much for your time and cooperation!

Appendix C. Final 19-item Motivational Questionnaire

English Questionnaire Item No.

SELF ASSESSED EFFORT

28. I try to use English in daily life.
31. I look for as many opportunities to use English as I can.
33. I try to learn English not only in the classroom but also from other sources such as English newspapers and magazines.
34. I try to learn English not only in the classroom but also from other sources such as English films and videos.
36. I spend extra time to improve my English.

ATTITUDES TOWARDS THE ENGLISH LANGUAGE

8. Being able to speak English will impress other people.
14. I think it is worthwhile to study English.
22. English is a very important subject.
23. Japanese people find value in being able to speak English.
24. English is necessary in today's "international" world.

DESIRE TO SPEAK TO NATIVE SPEAKERS

6. I want to make foreign friends.
13. Being able to speak English will help me associate equally with foreigners.
18. I can become more open when I speak English.
20. Speaking English with native speakers is enjoyable.
27. I practice English whenever I have an opportunity to speak it with a native speaker(s) of English.

ANXIETY

41. I feel uncomfortable if I have to speak in my English class(es).
42. It embarrasses me to volunteer answers in my English class(es).
43. I am afraid other students will laugh at me when I speak English.
45. I don't like to speak often in my English class(es) because I am afraid of what my classmates will think of me.