Exploring the Components of Foreign Language Learning Motivation in Japan: A Preliminary Survey of High School Students in Hyogo Prefecture

Hiroaki TANAKA

Graduate School of Education, Hiroshima University

Abstract

The purpose of this study was to conduct a preliminary survey to describe the nature of foreign language learning motivation of high school students in Japan. The subjects were 102 high school students in Hyogo prefecture, and they were asked to complete a questionnaire. The questionnaire contains a wide range of theories proposed so far in motivational studies. After a hypothetical model of motivation was constructed using an Exploratory Factor Analysis, the model was then validated by Confirmatory Factor Analysis. As a result, a 4-factor model ("core motivation", "instrumental/extrinsic motivation", "attribution toward achievement", and "anxiety toward showing English proficiency") was adopted. The results suggested that in order to fully understand the nature of motivation, an inclusive study is needed. It might also be possible to assume that motivation consists of several variables which have a double structure rather than a single structure. Finally, implications for teaching are discussed concerning motivational strategies and a shorter form of the questionnaire which would be more practical in a classroom situation.

1. Introduction

The question of why some learners succeed in acquiring foreign language and some do not has drawn significant attention. Interest in the study of motivation in the foreign language learning context has blossomed, and motivation is said to play a major role in this process. In Japan, how to develop students' motivation to learn English gains more attention by educational practitioners these days, because of the introduction of a new course of study, which puts emphasis on communicative activity and learner autonomy. Although motivation has been an object of study for a long time, little is known concerning the way to motivate students to learn
English. Therefore, in order to achieve this goal, what is necessary at first, is to collect information about students' motivational variables to learn English, because without knowing what kind of motivation students have, the goal would become difficult to reach.

2. Background study

Though motivation is a widely used term, it has been defined in many ways. Dörnyei (1998) states that motivation is responsible for determining human behaviour by energizing it and giving it direction.

Numerous researches have attempted to construct a complete picture of motivation. Gardner, for example, has examined the issue on theoretical and empirical bases from the social psychological point of view (Gardner, 1979, 1985; Gardner & MacIntyre, 1993a, 1993b). The basic principle of Gardner's view of motivation and second language acquisition is that attitude and motivation influence second language acquisition. Other researchers such as Dörnyei, Oxford, and Schmidt introduced a broad concept of motivation, called a multifactor model of motivation, building on cognitive psychology and even on Gardner's theoretical underpinning (for example, Oxford & Shearin 1994, 1996; Dörnyei, 1994, 1998, 2001; Schmidt, Boraie, & Kassabgy, 1996). Though they proposed a wide variety of motivational variables, some of which they agreed on and some they did not, the basic tenet is the same: too much emphasis on a social psychological approach to motivation should be avoided. Recently Gardner proposed an extended model that integrates a multifactor model into his socio-educational model (for example, Tremblay & Gardner 1995; Gardner, Tremblay & Masgoret, 1997; Gardner, Masgoret, & Tremblay, 1999). In the Japanese EFL context, examinations on the validity of Gardner's approach were made (Chihara & Oller, 1978; Takanashi, 1991; Kamiyama, 1999), which obtained mixed results: the role of attitude and integrative motive were not clear. On the other hand, several studies dealt with a multifactor model (Matsukawa & Tachibana, 1996; Takagi 2000; Kimura, Nakata & Okumura, 2001). However, little is known about how it can be validated in order to fit into Japanese EFL learning context.

Furthermore, a number of studies explored motivational variables, but the results were inconsistent. There are several reasons for this inconsistency, one of which could be attributed to a data analysis procedure commonly used in motivational research: Exploratory Factor Analysis. Exploratory Factor Analysis is a data analysis for making a hypothesis, and the solution of the analysis is quite instable. Therefore it is important to examine the validity of a hypothesis made by Exploratory Factor Analysis, and for this purpose, Confirmatory Factor Analysis can be used (Kano, 2000).

In short, three points were discussed.
1. The nature of Japanese students' motivation to learn English is still under debate.
2. The validity of a multifactor model of motivation in the Japanese English language
learning context is not clear.

3. The hypothetical model made by Exploratory Factor Analysis has not been validated. Therefore, for the purpose of achieving a broader understanding of motivation, this study was conducted to integrate some leading theories in multifactor model and a part of Gardner's theories using both Exploratory Factor Analysis and Confirmatory Factor Analysis.

3. The purpose and the procedure

The present study was designed to investigate the components of motivation of high school students studying English as foreign language in Japan on the basis of 12 major motivational theories. 102 students (32 male, 60 female, 10 unknown) from two public high schools in Hyogo prefecture participated in the study. The ages of the subjects ranged from 15 to 18 years. Ideally this kind of study should be done on a large number of students with a wide variety of backgrounds. However, in terms of the preliminary nature of this study and feasibility, this study was conducted on 102 high school students.

The material used in this survey was a questionnaire. It was originally made by Schmidt, Boraie & Kassabgy (1996), and revised for this study in order to adapt it to the English language learning context in Japan. The original questionnaire consisted of a wide range of motivational theories not only from Gardner but also from a multifactor model, especially with a cognitive approach. However, some items do not fit into the Japanese context well, so those were revised or omitted. The theories included in this questionnaire were as follows. 1. expectancy/value model, 2. attribution theory, 3. goal-setting theory, 4. self-efficacy, 5. equity theory, 6. amotivation, 7. peer pressure, 8. attitude toward American/British culture, 9. attitude toward the American/British, 10. motivational intensity, 11. intrinsic motivation, 12. extrinsic motivation. The questionnaire consisted of 51 items and six-point Likert scales were used to eliminate neutral responses.

Descriptive statistics were calculated. Then, Exploratory Factor Analysis and Confirmatory Factor Analysis were performed using SPSS10.0 J for Windows and AMOS 4.

4. The result and discussion

After calculating descriptive statistics of this sample, Exploratory Factor Analysis was conducted to identify the component of motivation and the results are shown in table 1. Maeda & Yamato (2000) and Maeda (2001) were referred to when the analysis was undertaken.

Before carrying out Exploratory Factor Analysis, we examined the degree to which the distribution was normal, because the inclusion of skewed variables in the data disturbs the precise analysis. As a result, the variables that were far from a normal distribution were deleted in terms of skewness and kurtosis. The rest of the variables were factor analyzed.
The Maximum Likelihood Method and Oblique Promax Rotation were adopted. Though the Eigen value was set at 1.00 and a scree plot was examined to identify the latent variables, goodness-of-fit index showed that the mathematical model of Exploratory Factor Analysis does not fit the data. It means that the result does not have acceptable validity.

Table 1: The result of Exploratory Factor Analysis

<table>
<thead>
<tr>
<th>Items</th>
<th>Core motivation</th>
<th>Instrumental extrinsic motivation</th>
<th>Attribution toward achievement</th>
<th>Anxiety toward showing English proficiency</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q30 I am learning English because I want to spend time in an English speaking country.</td>
<td>0.635</td>
<td>0.425</td>
<td>-0.164</td>
<td>-0.045</td>
<td></td>
</tr>
<tr>
<td>Q37 I enjoy learning English very much.</td>
<td>0.627</td>
<td>0.089</td>
<td>0.170</td>
<td>0.011</td>
<td></td>
</tr>
<tr>
<td>Q6 I really want to learn more English than I have in the past.</td>
<td>0.613</td>
<td>0.208</td>
<td>0.135</td>
<td>-0.035</td>
<td></td>
</tr>
<tr>
<td>Q32 Learning English is a hobby for me.</td>
<td>0.606</td>
<td>0.196</td>
<td>-0.136</td>
<td>0.038</td>
<td>.701</td>
</tr>
<tr>
<td>Q2 I participate in English classes actively.</td>
<td>0.604</td>
<td>-0.376</td>
<td>0.231</td>
<td>0.212</td>
<td></td>
</tr>
<tr>
<td>Q12 I am learning English to become more educated.</td>
<td>0.588</td>
<td>0.145</td>
<td>-0.094</td>
<td>0.019</td>
<td></td>
</tr>
<tr>
<td>Q14 I will choose English class if English is an optional course.</td>
<td>0.523</td>
<td>-0.059</td>
<td>0.237</td>
<td>-0.006</td>
<td></td>
</tr>
<tr>
<td>Q7 I often think about how to learn English better.</td>
<td>0.464</td>
<td>0.095</td>
<td>0.014</td>
<td>0.366</td>
<td></td>
</tr>
<tr>
<td>Q15 I feel uncomfortable if I have to speak English in my class.</td>
<td>-0.327</td>
<td>0.018</td>
<td>-0.271</td>
<td>0.268</td>
<td></td>
</tr>
<tr>
<td>Q22 Increasing my English proficiency will have financial benefits for me.</td>
<td>0.026</td>
<td>0.884</td>
<td>0.133</td>
<td>-0.024</td>
<td></td>
</tr>
<tr>
<td>Q21 If I learn English better, I will be able to get a better job.</td>
<td>-0.010</td>
<td>0.669</td>
<td>0.047</td>
<td>0.197</td>
<td>.719</td>
</tr>
<tr>
<td>Q40 Everybody in Japan should be able to speak English.</td>
<td>0.166</td>
<td>0.553</td>
<td>0.011</td>
<td>-0.034</td>
<td></td>
</tr>
<tr>
<td>Q42 I want to learn English because it is useful when traveling abroad.</td>
<td>0.251</td>
<td>0.492</td>
<td>0.053</td>
<td>-0.053</td>
<td></td>
</tr>
<tr>
<td>Q4 English classes in school will definitely help me to improve my English.</td>
<td>0.137</td>
<td>0.033</td>
<td>0.703</td>
<td>-0.046</td>
<td></td>
</tr>
<tr>
<td>Q46 If my English proficiency develops, it will be because of the teacher</td>
<td>-0.331</td>
<td>0.186</td>
<td>0.659</td>
<td>0.240</td>
<td>.619</td>
</tr>
<tr>
<td>Q3 If I do well in English classes, it will be because I try hard.</td>
<td>0.218</td>
<td>0.082</td>
<td>0.534</td>
<td>-0.142</td>
<td></td>
</tr>
<tr>
<td>Q17 I don't like to speak often in English class because I am afraid my teacher will think that I am not a good student.</td>
<td>-0.058</td>
<td>0.206</td>
<td>-0.182</td>
<td>0.668</td>
<td></td>
</tr>
<tr>
<td>Q18 I'm afraid that other students will laugh at me when I speak English.</td>
<td>0.017</td>
<td>-0.023</td>
<td>-0.035</td>
<td>0.646</td>
<td>.606</td>
</tr>
<tr>
<td>Q19 I think I can learn English well, but I don't perform well on tests and examinations.</td>
<td>0.224</td>
<td>-0.133</td>
<td>0.182</td>
<td>0.522</td>
<td></td>
</tr>
</tbody>
</table>

Note: In table 1, the underlined parts on question items are the variables used in the final model of Confirmatory Factor Analysis. The underlined numbers showed more than .400 factor loading.
Thus, Stepwise Variable Selection in Exploratory Factor Analysis (SEFA) was used. After interpreting the data and analyzing goodness of fitness of the model ($\chi^2 = 109.765$, $df = 116$, $p = .645$, CFI = .989, RMSEA = .023), 17 items were eliminated and a four-latent factor model was found valid.

Factor 1 consisted of 8 variables. 3 of the 8 variables (items 2, 7, 14) concerned to positive and active attitude toward learning, and 3 of them (items 12, 32, 37) related to intrinsic motivation in addition to motivational intensity (item 6). Positive and active attitudes toward learning and motivational intensity are one of the motivational components Gardner proposed, and it has been argued that intrinsic motivation has a comparatively strong relationship with achievement. Therefore, considering the important role toward achievement factor 1 played, it is labeled “core motivation”. Though a value component (item 30) showed appreciable loading both on factor 1 and factor 2, for the purpose of interpretation of the data, it is adequate for it to be included in factor 2.

“Core motivation” included not only the components of motivation in the socio-educational model, but also intrinsic motivation. Noels (2001) also proposed that motivation was a multi-faceted concept. Considering that these results show motivation is a complex aggregate of variables, it can be said that an attempt to explain motivation by a single theory is a difficult task. In order to describe and explain the picture of motivation, an integrated approach which combines the multi-factor model of motivation with aspects of the socio-educational model should be adopted.

3 of the 4 items (item 21, 22, 42) that loaded on factor 2 were concerned with instrumental motivation. Though it was ambiguous what item 40 represented, if we understood that this item was related to extrinsic reasons for studying English, this factor can be labeled as extrinsic/instrumental motivation.

Factor 3 consisted of 4 items that related to achievement in English and school attainment records. It was named as “attribution toward achievement”.

Factor 4 was labeled “anxiety toward showing English proficiency”, because the items represented anxiety when exhibiting ability in English.

Secondly, Confirmatory Factor Analysis was calculated. Most of the surveys using questionnaires as a measurement adopt only Exploratory Factor Analysis, and they do not follow the Confirmatory Factor Analysis. However, it was argued that Exploratory Factor Analysis was the analysis procedure to construct a hypothesis, and should be followed by Confirmatory Factor Analysis in order to validate the hypothesis. Furthermore, Confirmatory Factor Analysis provides the criteria to limit the number of observed variables and allow the researchers more comprehensible interpretation of the model. Thus, Confirmatory Factor Analysis was computed in order to examine the validity of the results of Exploratory Factor Analysis and to construct a small and more interpretable model.

Maximum likelihood method was used to estimate missing values, and to calculate goodness
of fitness between the model and data. The result, however, did not support the model. After modification, the model can be regarded as an acceptable one in terms of the goodness of fit index ($x^2 = 102.846, df = 82, p = .060, CFI = .994, RMSEA = .050$) and interpretation of it. The result is shown in figure 1.

"Core motivation" highly correlated with "instrumental/extrinsic motivation" ($r = .61$) and "attribution toward achievement" ($r = .65$), though the relationship between "instrumental/extrinsic motivation" and "attribution toward achievement" was low ($r = .12$). Learners who find a subjective value toward English language learning or who develop a sense of self-confidence in their English proficiency can constitute "core motivation", and vice versa. "Attribution toward achievement" showed a negative relationship with "anxiety toward showing English proficiency". It indicated that learners, who have a negative evaluation of their own proficiency, and are afraid of examinations or even speaking in front of their classmates, could have a low sense of "attribution toward achievement", and vice versa. "Anxiety toward showing English proficiency correlated negatively with "attribution toward achievement" ($r = -.37$). Therefore, these results suggested that each motivational component is not independent but rather they relate to each other to construct one complex unit.

These correlational relationships also implied the possibility that the internal structure of motivation could be a double structure. It means that motivation roughly consists of two elements; one is the core of motivation, and the other is peripheral. The peripheral elements of motivation are "instrumental/extrinsic motivation" and "belief toward English achievement" which have comparatively strong relationships with each other while they also relate to the central element, called "core motivation".

In summary two points were discussed.
1. The need to examine the concept of motivation inclusively.
2. The possibility of the existence of a central element of motivation, named "core motivation".

4. Implication for teaching
As for results from Confirmatory Factor Analysis and Exploratory Factor Analysis, two points regarding implications for teaching are discussed.

First, for developing motivational strategies to facilitate students’ core motivation, an indirect method could be effective. Core motivation which is related to a positive attitude toward English language learning and intrinsic motivation is regarded as a central element of motivation. It seems to be difficult to facilitate core motivation by external factors such as by a teacher in a direct way, because core motivation appears to be generated from within the learner. Accordingly an indirect method can be used. As can be seen from Figure 1, core motivation has relatively strong correlations to “belief toward English achievement”. Students’ core motivation could be facilitated by the teachers’ encouragement to attribute students’ achievement to their own effort, and enrollment in the class. It may improve students’ attribution toward achievement and then in turn, develop core motivation. From this point of view, in order to develop students’ core motivation, it is important for teachers to make an indirect approach.

Second, two kinds of factor analysis indicated that 15 items could explain 4 latent variables. It suggested that a shorter version of the questionnaire could be developed on the basis of the results.

In school, a number of surveys have been conducted by teachers to identify students’ motivation to learn English, such as multiple choice questionnaires, compositions, interviews, and causal conversations with students. However, most of them do not appear to be systematic, and sometimes are based on ad hoc decisions, and as a result, the nature of motivation is not fully understood. Motivational research, on the other hand, has focused mainly on the theoretical part of motivation (Crooks & Schmidt, 1991; Yamamori, Isoda, Hiromori & Tanabe, 2002). In terms of the questionnaire method, this is also the case. A number of the questionnaires have been designed for the purpose of motivational research, but quite a few for classroom research conducted by educational practitioners. The reason for this is that they sometimes include more than 50 items: too many items to be used by the teachers. It takes a long time for students to complete the questionnaire and also long time to calculate the data. Furthermore, this type of questionnaire often contains a limited number of the motivational variables, and the multi-faceted nature of motivation may not be explained fully in terms of classroom application. 4 factors presented in this study, “core motivation”, “instrumental/extrinsic motivation”, “attribution toward achievement”, and “anxiety toward showing English proficiency” are an integrating form of 12 major theories of motivation in accordance with English language learning context in high schools in Japan. On the basis of these results developing a short version of the questionnaire can be possible. For example, core motivation is measured by the sum of 5 items (Q6, Q12, Q14, Q32, Q37). Students who have a high level of core motivation are supposed to obtain a high mark. In the same way, the total score of Q21, Q22, Q40 and Q42 reflects instrumental/extrinsic motivation; Q3, Q4 and Q46 show attribution toward achievement; and Q17, Q18 and Q19 demonstrate anxiety toward showing English proficiency.
proficiency. However it should be noted that the sum of all 15 items is not treated as the total motivational score, because such generalization may result in the ignorance of students' individual differences (Yamamori, Isoda, Hiromori & Tanabe, 2002). In this way, it is possible to make a profile of students in terms of the strength of their motivational variables.

The shorter version of the questionnaire is an integrating form of 14 major motivational theories into 4 factors using Exploratory Factor Analysis and Confirmatory Factor Analysis with keeping acceptable validity. Furthermore, since the short version consists of only 15 variables to measure total motivation of students, it does not take too long time for students to finish it.

References


Appendix