A multivariate analysis of Japanese university student motivation and pedagogical activity preferences

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The 1990s saw an interest in expanding the traditional dual-faceted definition of motivation into a broader multi-faceted theory. A number of researchers in the field of English as a Second Language (ESL) have followed the initial call of Crookes and Schmidt (1991) to expand upon the integrative (to become a member of the target community) and instrumental (for work or practical purposes) paradigm of motivation. Since then Dörnyei (1994), Gardner and Tremblay (1994), Oxford and Shearin (1994), Tremblay and Gardner (1995), and Schmidt, Boraie and Kassabgy (1996) have done so theoretically and empirically.

In order to bring more understanding of just how motivational preferences can be interpreted for application to a classroom setting, researchers have recently started investigating motivation in relationship to pedagogical activity preferences (Jacques, 2001), and strategy use and pedagogical preferences (Schmidt & Watanabe, 2001). However, little research into relationships between motivation and pedagogical activities (Ockert, 2006; Ockert, 2008; Ockert & Johnson, 2004) has been done thus far in the Japanese EFL environment. Therefore, two survey pilot study results are presented. As such, the data analysis represents a preliminary stage in the development of both surveys since they have yet to be statistically normed (Reid, 1990). However, the re-
results have revealed relationships within factors on both scales. As Schmidt and Watanabe (2001) have noted, “links between motivation and students’ attitudes towards different aspects of language pedagogy have been left largely unresearched” (p. 316). Hopefully, other researchers will join in this intriguing area of investigation and share their results.

**Literature review**

**Motivational theories: integrative / instrumental and intrinsic / extrinsic**

Despite Gardner’s (2001) assertion of the differences between motivation and the integrative and instrumental orientations, some scholars have written that the integrative and instrumental orientations are synonymous with intrinsic and extrinsic motivations respectively (e.g. Dickinson, 1995). However, Schmidt, Boraie and Kassabgy (1996) suggest that both the integrative and instrumental orientations are extrinsic because they indicate that the language is being learned in order to satisfy some goals not simply because of an intrinsic interest in the language itself. Honda (2005) writes, “it might be argued, however, that the integrative orientation is similar to intrinsic motivation in that it refers to positive attitudes toward the activity and the learning process” (p. 42).

Deci and Ryan’s (1985) Self-Determination Theory (SDT) has provided a consistent theoretical framework for motivation research in a wide range of fields. SDT provides a framework of extrinsic and intrinsic motivational orientations, with several subcomponents of each, along with amotivation—the desire not to engage in an activity (Deci & Ryan, 2002). In Japanese EFL related studies, SDT based surveys have been used to explore anxiety, intrinsic motivation and gender (Yashima et al., 2009), changes in motivation (Sakai & Koike, 2008), learner differences (Honda, 2005), intrinsic and extrinsic motivation and learner proficiency (Honda & Sakyu, 2004) and demotivation (Kikuchi & Sakai, 2009).

**Relevant motivational factors in ESL research**

The motivational items in Schmidt and Watanabe’s (2001) ‘Cooperativeness’ factor consists of the following statements: I learn best in a cooperative environment, My teacher’s opinion of me in this class is very important, and My relationship with the other students in this class is important to me. They found that ‘Challenging’ approaches as a factor group correlated highest with the motivational orientation of all learner groups in their study. In addition, their results found a ‘Cooperativeness’ motivational orientation correlated highly with ‘Challenging’ activities. Also, on their instructional activities scale, there is a ‘Cooperative Learning’ factor consisting of the following three items: I like language learning activities in which students work together in pairs or small groups, I prefer to work by myself in this language class, not with other students (reverse coded), and I prefer a language class in which the students feel they are a cohesive group. For reference, the four ‘Challenging’ activity items are: During this class, I would like to have no English spoken, In a class like this, I prefer activities and material that really challenge me to learn more, I prefer a language class in which there are lots of activities that allow me to participate actively, and I prefer to sit and listen, and don’t like being forced to speak in language class (reverse coded).

**Classroom activities**

Willis (1996) describes task-based activities as “activities where the learner uses the target language for a communicative purpose in order to achieve an outcome” (p. 23). The author further defines task-based activities under various categories such as listing, ordering/sorting, comparing, problem solving, sharing personal experiences, and creative tasks.

Using Carreira’s (2005) insightful analysis, the activity factor group items in Jacques’ (2001) and Schmidt and Watanabe’s (2001) papers are compared to those used herein. For example, their results contain the item Grammar should be an important focus in this class, which grouped with Reading and writing should be an important focus in this class, forms the factor ‘Traditional Approach’ (Jacques, 2001). These two items, plus the item Vocabulary should be an important focus in this class, came under the factor ‘Traditional Approach’ in Schmidt and Watanabe (2001). The factor results in both papers contain items related to grammar, reading, and writing. In the case of Schmidt and...
Watanabe, vocabulary, was also included.

Furthermore, Jacques (2001) and Schmidt and Watanabe (2001) found a factor that they named ‘Challenging Approaches’. This factor consists of the following items: I prefer a language class in which there are lots of activities that allow me to participate actively, I prefer to sit and listen and don’t like being forced to speak in language class (reverse coded) and In a class like this, I prefer activities and material that really challenge me to learn more. Also, their results for pedagogical activities contain a factor which they labeled ‘Cooperative Learning’, containing the following items: I prefer to work by myself in this language class, not with other students (reverse coded), I like language learning activities in which students work together in pairs or small groups and I prefer a language class in which the students feel they are a cohesive group.

Scale construction

Oppenheim states, “the writing of successful attitude statements demands careful pilot work, experience, intuition and a certain amount of flair” (cited in Dörnyei, 2001, p. 203). In order to develop the motivation scale, the author visited scales used by Dörnyei (2001), and Noels, Clément and Pelletier (1999). To develop the pedagogical activities scale, the author relied on definitions of activities by Nunan (2004) and Willis (1996) (see Appendices A and B).

Gardner and Tremblay state that “… items are developed to be appropriate to the context in which the study is being conducted…People are encouraged not to simply take a set of items and administer them unthinkingly in any context” (cited in Dörnyei, 2001, p. 190). For example, often students in Japan must take standardized exams such as STEP Eiken, the TOEIC or TOEFL tests. Students may take extra courses to learn the skills needed for success on these tests (Hef- ferman, 2003). The items on the scales used for this research were designed and selected using the expert rating approach (Brown, 2001) with Japanese learners and cultural situation in mind.

Research questions and hypotheses

Research questions

Based on the information above, several research questions were raised: Will the motivation survey response analysis create distinct intrinsic and extrinsic groups? Second, will the pedagogical activities group by what several authors consider TAs and C/TBAs? And, do these students have preferences for certain pedagogical activities? As a whole, do these students prefer one pedagogical approach to the other?

Hypotheses

The above research questions led to the following hypotheses:

- Hypothesis 1: The motivation survey factor analysis results will form groups of intrinsic and extrinsic factors.
- Hypothesis 2: The pedagogical activities survey factor analysis results will form groups of TAs and C/TBAs.
- Hypothesis 3: The participants in this survey will prefer C/TBAs to TAs. The use of factor analysis will distinguish between the two forms of teaching and reveal which methodology students prefer based on factor group size.
- Hypothesis 4: The participants will prefer to work socio-collaboratively.

Methods

Students

The participants were ninety-eight male and six female first year students (N=104) at a private university in Japan. Based on their entrance scores, the lowest 15% are lower intermediate (LI); the middle 70% are intermediate (IM); and those in the upper 15% are upper-intermediate (UI) in English ability. The surveyed students were all in the first semester of their first year. This paper presents results for intermediate level students.

Instrumentation

Two survey instruments were created for this study. The motivation survey (see Appendix
A) consists of sixteen statements, the first eight of which are hypothesized to be intrinsically motivated (IM) statements and the latter eight to be extrinsically motivated (EM) statements. The classroom activities survey (see Appendix B) consists of twelve statements, the first six are hypothesized traditional activities (TAs) and the second six are hypothesized communicative and task-based activities (C/TBAs). The motivation survey uses a five-point Likert scale corresponding to (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree. The classroom activities questionnaire uses a five-point Likert scale, corresponding to (1) strongly dislike, (2) dislike, (3) neutral, (4) like, and (5) strongly like.

Pilot testing
A group of three male and three female students who were not among the students to be surveyed were asked if they understood all of the items. The meaning of Item 11, *Tasks that are intellectually challenging*, confused one student. Therefore, the author was available to explain the meaning of questionnaire items before administering the survey and to answer any questions students may have while completing the survey.

Procedures
The surveys were administered to students in three of the author’s required courses. The survey was administered as a paper version and students were encouraged to ask any questions after the instructions were read aloud. Participation was voluntary.

Analysis
Principal component and Likert scale analyses
As computed by the Statistical Package for the Social Sciences (SPSS), principal component and Likert scale analyses were performed on the data. The table below shows the factor groups of the motivation survey.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Groups</th>
<th>EM Work (n=71)</th>
<th>IM Leisure (n=16)</th>
<th>EM Praise (n=10)</th>
<th>IM Fun (n=6)</th>
<th>EM Tests (n=1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7) I study English because being able to use English is important to me.</td>
<td>.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13) In the future, English will be helpful/useful to me.</td>
<td>.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14) English is important to me because I might need it later for my job.</td>
<td>.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16) I study English because I must study English.</td>
<td>.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) English is important to me because I want to make friends with foreigners.</td>
<td>.65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) English is important to me because I want to study overseas.</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) English is important to me because I want to read books in English.</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) English is important to me because I like English movies or songs.</td>
<td>.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) I study English because it will make my teacher proud of me/praise me.</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10) I study English because it will make my parents proud of me/praise me.</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15) I study English because all educated people can use English.</td>
<td>.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) I enjoy studying English.</td>
<td>.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Language learning often makes me happy.</td>
<td>.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) Language learning often gives me a feeling of success.</td>
<td>.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11) I study English because I want to do well on the TOEIC test.</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12) I study English because I want to do well on the TOEFL test.</td>
<td>.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis with Varimax rotation and Kaiser normalization.
analysis capitalizes on both the similarities and differences of survey responses between an individual respondent’s responses and in relation to all other respondents as a whole. Individuals who respond similarly form a factor group (Brown, 2001; Kachigan, 1991). On the other hand, the Likert scale analysis uses a simple calculation of the means using Microsoft Excel software. This simple procedure involves “adding up whatever numbers are involved and [dividing] them by the total number of numbers” (Brown, 2001, p. 119).

**Results**

The factor analysis results provide sub-groups within both of the theorized categories, with the exception of Item 7. It appears to be an extrinsic item.

Table 1 shows the results of the factor analysis, resulting in five factor groups. The factor labeled ‘IM Fun’ has items related to the intrinsic enjoyment of language learning: 1) I enjoy studying English; 5) Language learning often makes me happy; and, 6) Language learning often gives me a feeling of success. The ‘IM Leisure’ factor contains items related to intrinsic motivation with an integrative orientation: 2) English is important to me because I want to make friends with foreigners; 3) English is important to me because I want to study overseas; 4) English is important to me because I want to read books in English; and, 8) English is important to me because I like English movies or songs.

The first extrinsic factor, ‘EM Work’ contains items related to External Regulation/Aмотivation: 7) I study English because being able to use English is important to me; 13) In the future, English will be helpful/useful to me; 14) English is important to me because I might need it later for my job; and, 16) I study English because I must study English. The second, ‘EM Praise’, contains items of an intrinsic ‘sense of Self’ nature based on how they are perceived by others: 9) I study English because it will make my teacher proud of me/praise me; 10) I study English because it will make my parents proud of me/praise me; 15) I study English because all educated people can use English. The third extrinsic variable, ‘EM Tests’, consists of two instrumental orientations: I study English because I want to do well on the TOEIC test; and, 12) I study English because I want to do well on the TOEFL test.

These five factor groups almost perfectly bear out the hypothesis of the first eight items being intrinsic motivational orientations and the second eight items being extrinsic motivational orientations. The largest group, ‘Work’ contains three hypothesized extrinsic items, while four hypothesized intrinsic items make up the second largest group, ‘Leisure’.

Hypothesis 1: The motivation survey factor analysis results will form groups of intrinsic and extrinsic factors, appears to be rather accurate at this stage of scale development.

The results in Table 2 help answer Hypotheses 2 and 3. First, the single exception to Hypothesis 2: The pedagogical activities survey factor analysis results will form groups of TAs and C/TBAs, is Item 11, Tasks that are intellectually challenging. It correlates with traditional activities Dialogue/reading practice from the text and Translation exercises, arguably activities that the students find more difficult than the others.

The ‘TAs Listening’ factor contains the two items for listening skills on the survey: 1) Lecture (listen to the teacher and stay in my seat); and, 2)
**Listening exercises.** The next factor, ‘TAs Brains’, is composed of tasks that may be considered difficult tasks: 3) Dialogue/reading practice from the text; 5) Translation exercises; and, 11) Tasks that are intellectually challenging. The third traditional factor, ‘TAs Writing & Grammar’ simply consists of the two exercises involving writing: 4) Writing exercises; and, 6) Grammar drills/practice.

The first and largest factor group, ‘C/TBAs Active Pair and Teamwork’, consists of the three items: 7) Small-group/team activities; 10) Activities where I am moving in the room; and, 12) Pair-work. The second C/TBAs factor group is ‘Inquisitiveness’, which has two problem solving activity types: 8) Info-seek/finding information activities; and, 9) Problem-solving activities. Therefore, Hypothesis 3: The participants in this survey will prefer C/TBAs to TAs, shows accurate results with Activities 7, 10, 12 in ‘Active Pair and Teamwork’, the first factor group, which comprises the greatest number of respondents. Therefore, this construct appears to be valid in the minds of the students surveyed. The second largest group, ‘Intellectual Stimulation’, contains Activities 3, 5, and 11, Tasks that are intellectually challenging. So, since the largest factor group contains three C/TBAs, Hypothesis 3 has proven to be accurate, too.

Table 3 shows the mean score for the twelve pedagogical activities. The individual groups of students as organized by the factor groups from Table 2 with the corresponding number of participants in each factor group at the top.

Hypothesis 4 stated the participants would prefer to work socio-collaboratively, and to determine preferences, the mean score for each activity on the scale was calculated. The higher mean score for Item 7) Small group/team activities and Item 12) Pair-work preference indicates these students prefer socio-collaborative activities. Some may believe that since the results are mostly between three and four, this hypothesis was not strongly supported. However, Reid (1990) noticed a phenomenon whereby native speakers of English “used the entire range of the 5-point Likert scale … while the Japanese students tended to respond more toward the mean: That is, they responded to the Strongly Agree or Strongly Disagree categories only rarely” (p. 336). Therefore, it might be reasonable to assume that the ‘highs’ for Group, Moving and Pair work may in fact be too low. Furthermore, the lows for Writing, Translation and Grammar may actually be lower.

### Table 3. Motivation factor groups and pedagogical activity mean scores \((N=104)\)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Work ((n=71))</th>
<th>Leisure ((n=16))</th>
<th>Praise ((n=10))</th>
<th>Fun ((n=6))</th>
<th>Tests ((n=1))</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Lecture</td>
<td>3.5</td>
<td>3.8</td>
<td>3.8</td>
<td>3.5</td>
<td>3</td>
</tr>
<tr>
<td>2) Listening</td>
<td>3.4</td>
<td>3.3</td>
<td>3.6</td>
<td>3.7</td>
<td>4</td>
</tr>
<tr>
<td>3) Dialogue</td>
<td>3.1</td>
<td>3.4</td>
<td>2.8</td>
<td>2.8</td>
<td>3</td>
</tr>
<tr>
<td>4) Writing</td>
<td>3</td>
<td>3.6</td>
<td>2.8</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>5) Translation</td>
<td>3.1</td>
<td>3.3</td>
<td>2.7</td>
<td>3.7</td>
<td>3</td>
</tr>
<tr>
<td>6) Grammar</td>
<td>3</td>
<td>3.4</td>
<td>3.5</td>
<td>3.5</td>
<td>2</td>
</tr>
<tr>
<td>7) Group</td>
<td>3.7</td>
<td>3.8</td>
<td>4</td>
<td>3.5</td>
<td>2</td>
</tr>
<tr>
<td>8) Info-seek</td>
<td>3.2</td>
<td>3.5</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) Problem</td>
<td>3.3</td>
<td>3.7</td>
<td>3.5</td>
<td>3.5</td>
<td>3</td>
</tr>
<tr>
<td>10) Moving</td>
<td>3.3</td>
<td>3.6</td>
<td>4.1</td>
<td>2.5</td>
<td>3</td>
</tr>
<tr>
<td>11) Intellect</td>
<td>3.2</td>
<td>3.4</td>
<td>3.3</td>
<td>2.8</td>
<td>4</td>
</tr>
<tr>
<td>12) Pair work</td>
<td>3.6</td>
<td>3.7</td>
<td>3.8</td>
<td>3.2</td>
<td>2</td>
</tr>
</tbody>
</table>

**Discussion**

The majority of students in this study have interest in learning English for utilitarian purposes such as work, which can be considered an extrinsic and instrumental goal. These students prefer to work with others and be active in the classroom. Another smaller group has an intrinsic interest in learning English for travel and leisure purposes. They also enjoy working in groups, but also show a preference for lecture, too. Some students enjoy the praise of others such as parents and teachers, prefer to work in groups and be active in the classroom. A small minority actually enjoys learning English and shows a preference for translation and listening activities. A single student indicated the desire to study for a standardized tests, and likes intellectually challenging approaches such info-seek and listening activities.

The three statements in C/TBAs Factor 1, ‘Active pair / Team work’, appear to tap into two of the constructs in the results for Jacques’
and Schmidt and Watanabe’s instructional activities scale. These JSEs appear to prefer C/TBAs with others while moving for the intrinsic enjoyment of the activities themselves, since the majority intends to use English for instrumental purposes such as work.

Of interest may be the low number of students in the factor group ‘Tests’. As mentioned above, some universities in Japan—including the university where this research was conducted—offer special courses for test preparation. Yet, few students appear to want to learn English for this purpose.

**Male students may have a preference for being active while learning English**

The students who answered these surveys are a sample of convenience; therefore, the results may not be applicable to the general population of Japanese university students (Brown, 2006). However, is the question of the activity of young males in the classroom merely a matter of nature (Gurian, 1998), a matter of socialization, or should it receive more scrutiny? Recent research by Yashima et al. (2009) states, “women were shown to have a higher level of self-regulation in learning English, which confirms that gender is a crucial dimension of learner profiles” (p. 58). If this is the case, the evidence herein indicates that, at least for this group, the male students would prefer to be out of their seats rather than in them while learning English. In the author’s opinion, taking advantage of this innate need for activity could greatly empower language professionals by channeling male energy with an organized, outcome-based pedagogy.

**Conclusion**

This paper reported the findings of a motivation-al survey and a survey of pedagogical activities in the early stages of development. Data from this pilot study indicates that there are similarities and differences in the classroom activities that students prefer based on their motivational orientations. In the author’s opinion, finding that these students prefer to be active while learning deserves further investigation. If that construct can be identified as valid and reliable, it may help educators understand how their students prefer to learn, enabling curriculum developers and classroom practitioners to create more effective lessons. In addition, the research results herein demonstrate that even with limited knowledge of the research process, educators can gain a better understanding of their students with a bit of fortitude and support from their friends and colleagues.

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David Ockert works at two junior high schools developing multi-media based socio-collaborative projects to increase the intrinsic motivation of young Japanese learners of English in order to promote their willingness to communicate. In the past, he has taught K – 12, university, and graduate level business management prep courses and worked for SHARP Electronics in the Digital Documents Systems Section of the Information and Communication Systems Group on a quad-lingual translation device, working with the team to take the product for demonstration before the President and Board of Trustees. He really enjoys making ideas tangible.

### Appendix A. The Motivation Survey

What is your attitude toward learning English? Please circle the number of the answer that best matches your opinion:

1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

1. I enjoy studying English.
2. English is important to me because I want to make friends with foreigners.
3. English is important to me because I want to study overseas.
4. English is important to me because I want to read books in English.
5. Language learning often makes me happy.
6. Language learning often gives me a feeling of success.
7. I study English because being able to use English is important to me.
8. English is important to me because I like English movies or songs.
9. I study English because it will make my teacher proud of me/ praise me.
10. I study English because it will make my parents proud of me/ praise me.
11. I study English because I want to do well on the TOEIC test.
12. I study English because I want to do well on the TOEFL test.
13. In the future, English will be helpful/ useful to me.
14. English is important to me because I might need it later for my job.
15. I study English because all educated people can use English.
16. I study English because I must study English.

### Appendix B. The Pedagogical Activities Survey

What classroom activities do you enjoy or find motivating? Please circle the number that best matches your opinion:

1 = strongly dislike, 2 = dislike, 3 = neutral, 4 = like, 5 = strongly like

1. Lecture (listen to the teacher and stay in my seat)
2. Listening exercises
3. Dialogue / reading practice from the text
4. Writing exercises
5. Translation exercises
6. Grammar drills / practice
7. Small-group / team activities
8. Info-seek / finding information activities
9. Problem-solving activities
10. Activities where I am moving around in the room
11. Tasks that are intellectually challenging
12. Pair-work
Advert