Application of Self-determination Theory: Helping Japanese University Students with Low English Proficiency Using Appropriate Teachers’ Communication Style

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Abstract

In this study, I have replicated Noels, Clement, and Pelletier’s study (1999) to investigate whether teachers’ communication style can influence the motivation of non-English major Japanese university students with low English proficiency. The results suggest that, even for such students, appropriate teachers’ communication style can be an effective tool for their motivational arousal.

Introduction

Review of the Literature

Motivation is an “abstract, hypothetical concept” which explains “why people decide to do something, how hard they are going to pursue it and how long they are willing to sustain the activity” (Dornyei, 2001, pp.1, 7). Although multiple theories and frameworks in the field of psychology and language acquisition have been formed to explain the components and dimensions of motivation, “very little has been said about how this theoretical knowledge can be applied in the actual classroom” (Dornyei, p. 2).

Self-determination theory (Deci & Ryan, 1985) seems to be one such theory that has applicability in classroom settings. In Self-determination theory, motivation is first divided into two categories: intrinsic motivation and extrinsic motivation. Intrinsic motivation refers to “doing something because it is inherently interesting or enjoyable” (Ryan & Deci, 2000, p.55). This form of motivation is considered to be especially important in learning because it “results in high-quality learning and creativity” (Ryan & Deci, p.55). Extrinsic motivation, on the other hand, refers to the motivation that stems from external reasons. It is divided into several sub-categories (external regulation, introjection, identification, and integration) depending on the extent to which the motivational force is internalized. In the extreme end lies another category called amotivation; a state that lacks motivation. The stages and the sub-stages are considered to be a transient continuum that can fluctuate over time. Ryan and Deci (2000) argue that educators should attempt to make their students internalize the initially external motivational force or to facilitate intrinsic motivation to
achieve successful teaching. In doing so, they stress the importance of fulfilling students’ three basic psychological needs: autonomy, competence, and relatedness. The need for autonomy is one’s need to be in charge of his/her own behavior. The need for competence literally means one’s need to feel competent. The need for relatedness is the desire to have intimate and friendly relationship with others. Self-determination theory posits that when these three psychological needs are fulfilled, learners will be intrinsically motivated (Deci & Ryan, 2000).

Noels, Clement, and Pelletier (1999), within the framework of Self-determination theory, conducted a study on Canadian Anglophone university students studying French in an immersion program. Based on their findings, they conjectured that language teachers’ communication style—supporting students’ autonomy and providing appropriate feedback—can affect students’ intrinsic motivation, which may, in a long run, improve students’ learning. Also, Noels’ several other studies (e.g., Noels, 2001; Noels, Pelletier, Clement, & Vallerand, 2000) show the importance of fulfilling students’ psychological needs in fostering motivation. Even in Japanese university teaching contexts, Hiromori (2005, 2006) found that lessons which fulfill students’ three psychological needs are likely to affect students’ motivation.

These studies suggest that Japanese university English teachers can play a significant role in affecting students’ motivation by fulfilling their psychological needs. However, none of the above studies focus on students with rather low language proficiency. In many Japanese universities, English is one of the compulsory or elective (Sentaku hisshu) subjects that students may have to take regardless of their majors. Even students with low English proficiency or motivation, as a result, end up sitting in English classes, which gives a headache for university English teachers to begin with. In addition, the arrival of the “Daigaku zennyu jidai” (the era of all university applicants accepted. Due to the decrease of teenage population, the total number of applicants being accepted to Japanese universities will be higher than the total number of applicants, which means that all university applicants will be accepted to at least one of the institutions and become university students, as long as they are not being picky.) will only aggravate the situation. In teaching such untraditional students, it is getting increasingly important for university English teachers to find ways to affect these students with low English proficiency, and possibly low motivation.

**Statement of Purpose**

In this study, I focused on non-English major Japanese university students with low English proficiency (Test of English for International Communication (TOEIC) score below 400) and replicated Noels, Clement, and Pelletier’s study (1999) to find out if similar results can be obtained; i.e., whether students’ perception of their English teachers as being controlling (i.e., NOT supporting autonomy) and providing informative and positive
feedback is related to these students' motivation. If there is a significant relationship between the two, such will found a ground to argue that even such students with low proficiency can be helped through lessons that fulfill their psychological needs.

In addition, similar to the replicated study, other relationships—correlation between teachers' communication style and educational variables, and correlation between motivational subcategories and educational variables—were examined.

**Research Questions.** My research questions, therefore, are as follows.

1. What is the relationship between the participants’ (non-English major Japanese university students with low English proficiency; TOEIC score below 400) perception of their English teachers' communication style—teacher control and appropriate feedback—and these students' intrinsic and extrinsic motivation?

2. What is the relationship between the participants' motivation and educational variables—self evaluation, motivational intensity, intention to continue studying, anxiety, institutional control?

3. What is the relationship between the participants' perception of their English teacher' communication style and educational variables?

**Method**

**Participants**

Participants were 88 freshmen students in a university located in Tokyo. The students are non-English major students who were enrolled in the two compulsory TOEIC preparation classes. In the beginning of the semester, these students had taken the adapted semi-TOEIC test, implemented by the university. Based on the results, the students' TOEIC scores were estimated as below 400; thus, they were assigned to these classes.

**Materials**

A 7-point Likert-scale questionnaire was used for the research. Among the seven options ranging either from "Does not correspond at all" (1 point) to "Correspond completely" (7 points), or from "Totally disagree" (1 point) to "Totally agree" (7 points), students were asked to choose an answer that matched with their feelings the most. Also, based on the replicated study, the questionnaire was composed of three scales: intrinsic and extrinsic motivation scale, teachers' communication style scale, and educational variables scale. The questionnaire items were adapted from multiple sources (Pelletier, Tuison, & Haddad, 1997; Noels, Clement, & Pelletier, 1999; Noels, Pelletier, Clement, & Vallerand, 2000; Noels, 2001) and translated into Japanese for the participants.

**Intrinsic and extrinsic motivation.** The first section of the questionnaire was designed to measure students' intrinsic and extrinsic motivation (IM & EM) to study English. The 21
questionnaire items are various responses to the question, "Why are you learning English?" The items were divided into seven sub-sections, depending on what they intend to measure: 1. Amotivation (three items), 2. External regulation (EM, three items), 3. Introjected regulation (EM, three items), 4. Identified regulation (EM, three items), 5. Knowledge (IM, three items), 6. Accomplishment (IM, three items), and 7. Stimulation (IM, three items).

**Perceived teachers' communication style.** The second section of the questionnaire intends to measure students' perceptions of the English teachers' communication style. It was divided into two sub-sections: students' perception of their English teachers as being controlling (NOT fostering autonomy; six items); and students' perception of the teachers as providing feedback in a positive and informative manner (eleven items).

**Educational variables.** The third section of the questionnaire was aimed to measure educational variables "that have been shown to be important in L2 learning" (Noels, Clement, & Pelletier, 1999, p. 27). They are as follows: classroom anxiety, motivational intensity, intention to continue L2 study, self evaluation, and control. Classroom anxiety aims to measure students' anxiety during lessons—both language use and teacher related anxiety. Motivational intensity was aimed to assess the degree of efforts the students felt they had made during learning English. Intention to continue learning English measures the students' intention to continue learning English after finishing the English classes they were enrolled in. Self evaluation was aimed to estimate students' perceived English competence. Control measures students' perception of the language learning environment (both the syllabus and the lessons) as controlling; i.e., inhibiting their autonomy.

**Procedures**

The questionnaire was conducted during regular class hours. Before conducting the questionnaire, the students were informed of the voluntary nature and the anonymity of the questionnaire. Also, they were told that their participation would not affect their course grades and the results obtained would be used merely for academic and educational purposes.

**Analyses**

SPSS Base 14.0 was used for all statistical procedures. First, students' replies to each of the three scales were factor analyzed and factors were extracted. Then the bivariate correlations of the factors among the three scales were calculated.

**Results**

**Factor Analysis**

**Intrinsic and extrinsic motivation.** The dimensionality of the 21 items from intrinsic and extrinsic motivation was analyzed using principle axis factoring analysis. The number of
factors to rotate was checked using the scree test result and the interpretability of the factor solution (Initial Eigenvalues Total being above 1.0 for each factor and cumulative % being above 60%). Based on the checking, five factors were rotated using Promax rotation procedure. The rotation solution, as shown in Table 1, yielded five interpretable factors: 1. accomplishment and knowledge, 2. stimulation, 3. amotivation, 4. identified regulation and introjected regulation, and 5. external regulation. Since three items had an abnormal loading, the analysis was re-conducted after eliminating the three items.

Accomplishment and knowledge accounted for 38.62% of the item variance. Stimulation and amotivation, accounted for 10.54% and 8.04% of the item variance respectively. Identified regulation and introjection, and external regulation, accounted for 6.36% and 4.27% of the item variance respectively. Using .40 as a cutoff point, none of the remaining items loaded on more than one factor.

For the four, among the five, factors, the Cronbach’s $\alpha$ was larger than .80 (accomplishment and knowledge $\alpha = .89$, stimulation $\alpha = .89$, amotivation $\alpha = .89$, identified regulation and introjection $\alpha = .89$, external regulation $\alpha = .77$). Since the Cronbach’s $\alpha$ if item deleted for one of the items that was loading on external regulation was larger than the Cronbach’s $\alpha$ ($\alpha = .77$), the item was deleted, factor analysis was conducted again, and the reliability for the external regulation factor was recalculated. All Corrected Item-Total Correlation scores, which demonstrate the correlations between each item and the total score from the questionnaire, were above .30, which means that all items correlate well with the

\begin{table}
\centering
\caption{Summary of Factor Loadings for Promax Five-Factor Solution for the Intrinsic and Extrinsic Motivation Questionnaire}
\begin{tabular}{lcccc}
\hline
Item & 1 & 2 & 3 & 4 & 5 \\
\hline
118 & .80 & .19 & .00 & -.28 & .05 \\
116 & .75 & .04 & .02 & .05 & .04 \\
113 & .69 & -.21 & -.03 & .19 & -.02 \\
115 & .67 & .07 & -.03 & .15 & -.11 \\
114 & .62 & .01 & .04 & .11 & .02 \\
119 & -.06 & .92 & -.01 & .05 & -.06 \\
120 & .05 & .89 & -.08 & -.04 & -.02 \\
121 & .08 & .89 & .02 & .08 & -.00 \\
101 & .01 & -.02 & .89 & -.08 & .12 \\
103 & .09 & -.00 & .85 & -.10 & -.12 \\
102 & -.07 & -.04 & .84 & .14 & -.11 \\
112 & .02 & .00 & -.07 & .90 & -.07 \\
110 & .07 & -.05 & -.10 & .72 & -.10 \\
108 & -.09 & .20 & .14 & .47 & .27 \\
107 & .17 & .08 & .11 & .44 & .21 \\
106 & .04 & -.10 & -.11 & -.08 & .89 \\
105 & -.02 & .01 & .00 & .11 & .86 \\
\hline
\end{tabular}
\end{table}

\begin{table}
\centering
\caption{Summary of Factor Loadings for Promax Two-Factor Solution for the Perceived Teacher Communication Style Questionnaire}
\begin{tabular}{lcc}
\hline
Item & 1 & 2 \\
\hline
209 & .90 & .03 \\
208 & .78 & -.03 \\
212 & .65 & -.01 \\
207 & .60 & .08 \\
214 & .52 & .02 \\
202 & -.02 & .88 \\
204 & -.01 & .81 \\
203 & -.07 & .80 \\
201 & .19 & .49 \\
\hline
\end{tabular}
\end{table}
scale overall.

**Perceived teachers’ communication style.** The dimensionality of the 17 items from perceived teachers' communication style was analyzed using principle axis factoring analysis. The number of factors to rotate—two factors—was pre-determined based on the hypothesis derived from previous research (Noels, Clement, & Pelletier, 1999). These two factors—control and feedback—were rotated using Promax rotation procedure. Since eight items loaded either on both factors or none of the factors, they were eliminated, and the analysis was conducted again (Table 2). The first factor, feedback, accounted for 32.68% of the item variance. The second factor, control, accounted for 20.60% of the item variance.

For the two factors, the Cronbach's $\alpha$ was larger than .80 (feedback $\alpha = .81$, control $\alpha = .83$). The Cronbach's $\alpha$ if item deleted were all above .70, yet below the Cronbach's $\alpha$. All Corrected Item-Total Correlation scores, which demonstrate the correlations between each item and the total score from the questionnaire, were above .30, which means that all items correlate well with the scale overall.

**Educational variables.** The dimensionality of the 27 items from educational variables was analyzed using principle axis factoring analysis. The number of factors to rotate was checked using the scree test result and the interpretability of the factor solution (Initial Eigenvalues Total being above 1.0 for each factor and cumulative % being above 60%). Based on the checking, seven factors were rotated using Promax rotation procedure. The rotation solution, as shown in Table 3, yielded seven interpretable factors: 1. self evaluation, 2. motivational intensity, 3. control (syllabus related control), 4. anxiety (teacher related anxiety), 5. intention to continue studying, 6. control (lesson related control), and 7. anxiety (anxiety to use language in class). Since two items loaded on none of the factors, they were eliminated and the analysis was conducted again.

The first factor, self evaluation, accounted for 25.20% of the item variance. The second factor, motivational intensity, and the third factor, control (syllabus), accounted for 12.47% and 10.02% of the item variance respectively. The fourth factor, anxiety (teacher), and the fifth factor, intention to continue studying, accounted for 8.11% and 4.81% of the item variance respectively. The sixth factor, control (lesson), and the seventh factor, anxiety (language use), accounted for 4.46% and 2.82% of the item variance respectively. Using .40 as a cutoff point, none of the remaining items loaded on more than one factor.

For the seven factors, the Cronbach's $\alpha$ was larger than .80 (self evaluation $\alpha = .84$, motivational intensity $\alpha = .86$, control (syllabus) $\alpha = .86$, anxiety (teacher) $\alpha = .87$, intention to continue studying $\alpha = .81$, control (lesson) $\alpha = .92$, anxiety (language use) $\alpha = .87$). Excluding the items that are loading on anxiety (language use) and control (lesson), which have only two items respectively, the Cronbach's $\alpha$ if item deleted were all above .70, yet below their Cronbach's $\alpha$. All Corrected Item-Total Correlation scores, which demonstrate the correlations between each item and the total score from the questionnaire, were above...
Table 3
Summary of Factor Loadings for Promax Seven-Factor Solution for the Educational Variables Questionnaire

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>320</td>
<td>.83</td>
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<tr>
<td>319</td>
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<tr>
<td>315</td>
<td>.72</td>
</tr>
<tr>
<td>317</td>
<td>.66</td>
</tr>
<tr>
<td>318</td>
<td>.65</td>
</tr>
<tr>
<td>316</td>
<td>.60</td>
</tr>
<tr>
<td>307</td>
<td>-.09</td>
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<tr>
<td>308</td>
<td>-.08</td>
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<tr>
<td>309</td>
<td>-.06</td>
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</tr>
<tr>
<td>301</td>
<td>.02</td>
</tr>
<tr>
<td>302</td>
<td>-.07</td>
</tr>
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</table>

Table 4
Correlations between Perceived Teachers' Communication Style and Motivational Subtypes (N=88)

<table>
<thead>
<tr>
<th>Perceived Teachers' Communication Style</th>
<th>Control</th>
<th>Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amotivation</td>
<td>.26</td>
<td>-.29*</td>
</tr>
<tr>
<td>External regulation</td>
<td>-.01</td>
<td>.03</td>
</tr>
<tr>
<td>Identified and introjected regulation</td>
<td>-.22</td>
<td>.27</td>
</tr>
<tr>
<td>Accomplishment and knowledge</td>
<td>-.16</td>
<td>.27</td>
</tr>
<tr>
<td>Stimulation</td>
<td>-.20</td>
<td>.36*</td>
</tr>
</tbody>
</table>

*p<.05.

.30, which means that all items correlate well with the scale overall.

Correlation Coefficients among the Inter-factors

Correlation coefficients were computed among the inter-factors: 1. the two factors for
Table 5
Correlations between Motivation Subtypes and Educational Variables (N=88)

<table>
<thead>
<tr>
<th></th>
<th>Self E</th>
<th>Mot I</th>
<th>Continue</th>
<th>Anxiety (teacher)</th>
<th>Anxiety (language use)</th>
<th>Control (syllabus)</th>
<th>Control (lesson)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amotivation</td>
<td>-.35*</td>
<td>-.20</td>
<td>-.58*</td>
<td>.35*</td>
<td>.18</td>
<td>.06</td>
<td>.14</td>
</tr>
<tr>
<td>External regulation</td>
<td>.01</td>
<td>-.08</td>
<td>.03</td>
<td>-.04</td>
<td>-.14</td>
<td>-.06</td>
<td>-.04</td>
</tr>
<tr>
<td>Identified and introjected regulation</td>
<td>.29</td>
<td>.37*</td>
<td>.66*</td>
<td>-.25</td>
<td>-.07</td>
<td>-.13</td>
<td>-.17</td>
</tr>
<tr>
<td>Accomplishment and knowledge</td>
<td>.16</td>
<td>.27</td>
<td>.44*</td>
<td>-.28</td>
<td>.10</td>
<td>-.17</td>
<td>.02</td>
</tr>
<tr>
<td>Stimulation</td>
<td>.35*</td>
<td>.26</td>
<td>.51*</td>
<td>-.23</td>
<td>-.15</td>
<td>-.18</td>
<td>-.02</td>
</tr>
</tbody>
</table>

*p < .05.

Table 6
Correlations between Perceived Teachers' Communication Style and Educational Variables (N=88)

<table>
<thead>
<tr>
<th>Perceived Teachers' Communication Style</th>
<th>Control</th>
<th>Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self evaluation</td>
<td>-.10</td>
<td>.32*</td>
</tr>
<tr>
<td>Motivational intensity</td>
<td>-.14</td>
<td>.15</td>
</tr>
<tr>
<td>Continue</td>
<td>-.16</td>
<td>.17</td>
</tr>
<tr>
<td>Anxiety (teacher)</td>
<td>.26</td>
<td>-.24</td>
</tr>
<tr>
<td>Anxiety (language use)</td>
<td>.48*</td>
<td>-.28</td>
</tr>
<tr>
<td>Control (syllabus)</td>
<td>.14</td>
<td>-.25</td>
</tr>
<tr>
<td>Control (lesson)</td>
<td>.24</td>
<td>-.08</td>
</tr>
</tbody>
</table>

*p < .05.

the perceived teachers' communication style and the five factors for motivation; 2. the five factors for motivation and the seven factors for educational variables; 3. the two factors for perceived teachers' communication style and the seven factors for educational variables. The Holm's sequential Bonferroni procedure was used to control for Type I error.

As shown in Table 4, two, out of the ten correlations were statistically significant among the factors for perceived teachers' communication style and motivation. Eight, out of the 35 correlations were statistically significant among the factors for the motivation and educational variables (Table 5). Two, out of 14 correlations were statistically significant among the factors for perceived teachers' communication style and the educational variables (Table 6).

**Discussion**

**Relationship between Perceived Teachers' Communication Style and Student Motivation**

*Teacher feedback and motivation.* There was a statistically significant positive correlation
between teacher feedback and stimulation. Also, a statistically significant negative correlation between feedback and amotivation emerged. In addition, while they were not statistically significant, the correlations between feedback and other forms of motivation excluding external regulation were somewhat high. The result shows the size of the impact teacher feedback may have on student motivation.

**Teacher control and motivation.** While no statistically significant negative correlation was found between perceived teacher control and higher forms of motivation, the positive correlation between control and amotivation was somewhat high, which implies that teacher control can have some minor negative effect on motivation.

**Relationship between Student Motivation and Educational Variables**

**Amotivation and educational variables.** There was a statistically significant negative correlation between amotivation and two educational variables—self evaluation and intention to continue studying English. Also, a statistically significant positive correlation between amotivation and anxiety (teacher) was seen. While the cause and effect relationship is not clear in this type of correlation study, the results are in line with Self-determination theory; that it is important to fulfill students’ need for competence in order to motivate them.

**Higher forms of motivation and educational variables.** There was a statistically significant positive correlation between stimulation and self evaluation. Also, the correlation between identified and introjected regulation and motivational intensity was statistically significant in the positive direction. Similarly, identified and introjected regulation, accomplishment and knowledge, and stimulation correlated with intention to continue studying in a statistically significant positive direction.

**Relationship between Perceived Teachers’ Communication Style and Educational Variables**

**Teacher feedback and educational variables.** There was a statistically significant positive correlation between feedback and self evaluation. In combination with the finding in the relationship between higher form of motivation and self evaluation explained above—a significant positive correlation between stimulation and self evaluation—we may say that it is important to raise students’ self evaluation through feedback in order to affect higher forms of motivation.

**Teacher control and educational variables.** There was a statistically significant positive correlation between teacher control and anxiety (language use). This suggests that teacher control can raise students’ anxiety and inhibit their will to use language in classrooms.

**Conclusion**

The results suggest that positive and informative teacher feedback can affect the motivational level of Japanese university students with low English proficiency. Teacher
control, on the other hand, can raise students' teacher related anxiety, and may have a minor negative effect on student motivation; thus, its use should be carefully managed.

There are several limitations to this study. First, since it is a correlation study, we can only conjecture the cause and effects of the correlated variables. Also, seemingly due to the small sample size, there was an abnormality in the loading on one of the factors. In addition, similar to Noels, Clement, and Pelletier's study (1999), the study focuses merely on two of the three important basic psychological needs that Self-determination theory posits—autonomy and competence—and disregards the remaining one; relatedness.

In future studies, a larger sample size with more sophisticated statistical measures can be used. Also, the relatedness variable should be measured in conjunction with the other variables. While admitting such shortcomings, the results of this study can be encouraging for Japanese university English teachers who face the daily difficulty of teaching students with low proficiency and motivation.

References