Application of Self-Determination Theory in a Project-Based Language Teaching Classroom

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Abstract

This paper investigates whether or not Project-Based Language Teaching (PBLT) can motivate students to study English based on the theoretical perspective of Self-Determination Theory (SDT). SDT postulates three psychological needs which enhance human motivation. That is to say, SDT argues that satisfying the three psychological needs (i.e., for competence, autonomy, and relatedness) can increase intrinsic motivation. On the other hands, PBLT in the second language acquisition (SLA) is regarded as a language teaching including a series of tasks all of which lead to an end-product. In the process of accomplishing the end product, PBLT is considered to have the potential to stimulate students’ three psychological needs. The researcher designed PBLT for 75 first-year university students twice an academic year. Before and after each set of PBLT, the students were given the same questionnaire about the three psychological needs and intrinsic motivation toward English learning. The results showed that: (1) each set of PBLT fulfilled the participating students’ three psychological needs, and (2) enhanced their intrinsic motivation. Finally, some pedagogical implications for future research are explored.

Key words:
Self-Determination Theory (自己決定理論), Project-Based Language Teaching (プロジェクト型言語教育), motivation (動機づけ), SLA (第二言語習得), collaborative learning (協働学習)

1. Introduction

Generally, motivation is said to be important for learners. In the second language acquisition (SLA) research, motivation toward learning a second language (L2) or a foreign language (FL), which is called L2 motivation, has also received a lot of interest for the past several decades. By teachers as well as by researchers, L2 motivation has been widely accepted as one of the key factors that influence the
rate and success of L2/FL learning (Dörnyei, 1998). At the same time, there seems to be a great variety of accounts of how L2 motivation happens in SLA research. Based on a general assumption, L2 motivation is considered to be “a complex, multifaceted construct” and “the diverse approaches highlight different aspects of this complexity” (Dörnyei, 1998, p.117). Although the nature of L2 motivation is regarded as being complex, however, SDT is recognized to be one of essential theories for L2 motivation (Dörnyei, 1998). This is because SDT is a well-developed motivation theory in psychology which assumes the existence of three psychological needs (i.e., for competence, autonomy, and relatedness) as prerequisites for enhancing students’ intrinsic motivation (Noels et al., 2000). Based on Deci and Ryan (1985, 2002), these three psychological needs and intrinsic motivation seem to be key elements for L2 motivation. In order to examine the relationship between the three psychological needs and intrinsic motivation, the present researcher designed two sets of PBLT for the university students. That is because PBLT is seen to be able to stimulate the students’ three psychological needs and enhance their L2 motivation (Fried-Booth, 1986).

Therefore, this paper researches on students’ L2 motivation on the basis of SDT when they are given PBLT. That is to say, the researcher investigates whether or not L2/FL students’ intrinsic motivation increases if PBLT satisfies their three psychological needs. The structure of this paper is as follows. Chapter Two explains the concept of SDT. Chapter Three presents theoretical foundations of PBLT. Chapter Four reports individual procedures and results of implementation of two sets of PBLT. Chapter Five concludes this paper with pedagogical implications.

2. Self-Determination Theory

First, Self-Determination Theory (SDT) including four types of extrinsic motivation and three psychological needs is explained. SDT was introduced as an elaboration of the intrinsic/extrinsic paradigm by Deci and Ryan (Dörnyei, 1998). Intrinsic motivation generally refers to motivation to engage in an activity because the activity is enjoyable and satisfying to do, while extrinsic motivation behaviors are the actions carried out to achieve some instrumental ends such as earning a reward or avoiding a punishment (Dörnyei, 1994). According to Dörnyei (1998), traditionally extrinsic motivation has been seen as something that could undermine intrinsic motivation; in other words, the importance of intrinsic motivation in the language classroom has long been recognized. In the truth, several studies like Brown (1981) have confirmed that students will lose their natural intrinsic interest in an activity if they have to do it to meet some extrinsic requirement.

2.1. Four types of extrinsic motivation

However, Deci and Ryan (1985) argue that different types of extrinsic motivation can be classified along a continuum on the basis of the extent to which actions are internalized into the self-concept. If actions are sufficiently self-determined and internalized, rewards can be combined with or even lead to intrinsic motivation (Deci, & Ryan, 1985; 2002; Ryan & Deci, 2000). That is to say, self-determination itself is seen as a requisite before any behavior to increase intrinsic motivation.
<table>
<thead>
<tr>
<th>Type of Motivation</th>
<th>Anomotive</th>
<th>Extrinsic Motivation</th>
<th>Intrinsic Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Regulation</td>
<td>Non-regulation</td>
<td>External Regultion</td>
<td>Identified Regulation</td>
</tr>
<tr>
<td>Quality of Behavior</td>
<td>Nonself-determined</td>
<td>Self-determined</td>
<td>Integrated Regulation</td>
</tr>
</tbody>
</table>

**Figure 1:** The Self-Determination Continuum with Types of Motivation and Types of Regulation

Source: Adapted from Deci & Ryan (2002, p.16)

As Figure 1 shows, extrinsic motivation is no longer regarded as an opposed counterpart of intrinsic motivation, but is divided into four types along a continuum between self-determined and nonself-determined forms of motivation. The four types of extrinsic motivation are “external regulation, introjected regulation, identified regulation, and integrated regulation” (Deci & Ryan, 2002, p.17). Consequently, based on this concept of Deci and Ryan, SDT can be regarded as one of epochal theories in motivational psychology.

### 2.2. Three psychological needs

Intrinsic motivation requires not only self-determination but also basic psychological needs. The basic psychological needs are constructed of three needs, each of which represents an innate human need. They are the needs for competence, autonomy, and relatedness (Deci & Ryan, 2002). Among the three needs, firstly, ‘the need for competence’ leads students to seek challenges that are optimal for their capacities. In this need, competence refers to feeling effective in one’s ongoing interactions with the social environment and experiencing opportunities to show one’s social capacities, namely “a sense of confidence” (Deci & Ryan, 2002, p.7). Secondly, ‘the need for autonomy’ will contribute to autonomous learning. In this need, autonomy concerns acting from interest and integrated values (Deci & Ryan, 2002). As mentioned above (see 2.1.), the four types of extrinsic motivation are closely related to the degree of self-determination. Besides, offering self-determination to a student is an essential factor to foster the student’s autonomy and self-confidence (Deci & Ryan, 2002). Thirdly, ‘the need for relatedness’ describes the psychological sense of being with others in a safe community. In this need, relatedness refers to feeling connected to others, to caring for each other, and to having a sense of belongingness both with other individuals and with ones’ community (Deci & Ryan, 2002). This relatedness could be promoted in collaborative learning because this learning requires learners to work with others toward their common goal. Hence, offering self-determination to students and satisfying students’ three needs seem to increase intrinsic motivation. In other words, on the basis of self-determination and three psychological needs, SDT is seen to be one of the most influential paradigms.

### 2.3. Empirical research on SDT

In addition to the theory, empirical research on SDT has been conducted. Noels et al. (2000) applied SDT to L2 teaching and learning with Deci and Ryan’s concept, which the three basic needs are
universal and innate requirements. Noels and her colleagues (2000) demonstrated a theoretical framework of SDT for English students who were learning French to improve their learning in terms of a self-determination continuum. Moreover, Hiromori and Tanaka (2006) and Tanaka and Hiromori (2007) investigated the potential of motivating high-school students to learn English as a foreign language (EFL) by the instructions consisting of tasks to stimulate the three psychological needs. Hiromori and Tanaka (2006) argue that the instructions including tasks called Group Presentation Activity have the potential to satisfy these three psychological needs and to increase intrinsic motivation. For example, the needs for competence can be fulfilled with the positive feedback of teachers, classmates, and other people about individual students’ contribution toward and their end-product. The needs for relatedness can be met gradually while students are working in a group collaboratively to reach the goal. And the need for autonomy can be adequately satisfied with the chances of self-determination and the responsibility to complete group work (Hiromori & Tanaka, 2006).

In summary, SDT illustrates different types of extrinsic motivation along a continuum on the basis of the extent to which actions are internalized into the self-concept. Besides, SDT shows that the three needs are innate requirements to increase intrinsic motivation. In addition, the research on SDT reveals that L2/FL instructions can stimulate students’ three needs to enhance their intrinsic motivation.

3. Project-Based Language Teaching (PBLT)

Next, the theoretical foundations of PBLT are presented. Although a variety of terms are used to refer to different types of language teaching including a project as the core element such as project work, this paper uses the term, Project-Based Language Teaching (PBLT).

3.1. Theoretical foundations of PBLT

The structure of PBLT is “a collection of sequenced and integrated tasks” (Nunan, 2004, p.133) that all add up to an end-product in a core element, a project. In the process of PBLT, planning, discussion, research, and reporting are needed for accomplishing the end-product (Beckett, 2002). Furthermore, “the route to the end-product brings opportunities for students to develop their confidence and independence and to work together in a real-world environment by collaborating on a task” (Fried-Booth, 2002, p.6). Specifically, in the light of EFL students in the PBLT classroom, they are expected to collaboratively accomplish their goal of a project through discussion, research, and presentation by using English (Tanaka, 2011). As a result, they could develop their collaboration, motivation, self-confidence, and autonomy as well as language skills through PBLT (Stoller, 2006).

3.2. Relationship SDT and PBLT

The theoretical foundations of PBLT are supported by the research on SDT which Hiromori and Tanaka conducted (see 2.3). The instructions based on SDT conducted in their research, which were called Group Presentation Activity, consisted of various tasks in the group work including planning, discussion, research, and reporting (presentation). Based on Beckett’s (2002) definition, these instructions can be a kind of PBLT. Hiromori and Tanaka (2006) showed that these instructions were
useful for Japanese students to develop their intrinsic motivation toward learning English because of chances of self-determination and responsibility to complete their group work. This group work facilitated by the instructions had the potential for satisfying the needs for competence, autonomy, and relatedness. In addition, during the instructions each of the teachers played a role of facilitator and gave positive feedback to help the students accomplish the group presentation by themselves. As a result, the students’ autonomy and relatedness as well as their self-confidence increased (Hiromori and Tanaka (2006). Based on these findings, PBLT could fulfill the participating students’ three psychological needs and increase their intrinsic motivation.

4. Implementation of PBLT

Based on the theoretical foundations and previous research (see 2 & 3), this chapter describes the implementation of PBLT conducted by the present researcher. To answer the research question, “Does L2/FL students’ intrinsic motivation increase if PBLT satisfies their three psychological needs?”, two sets of PBLT were carried out in 2014 academic year. The goal of PBLT in the first semester (the first PBLT) was that each student gave English presentation of one of the topics which he/she had already learned. That of PBLT in the second semester (the second PBLT) was that each group performed an English drama arranged by the members of each group. The aim for which the goal of the second PBLT changed each individual presentation into each group performance was to fulfill the need for relatedness more adequately than that of the first PBLT. This was because Hiromori and Tanaka (2006) showed that group work had highly promoted the need for relatedness. The participants of individual sets of PBLT were a total of 75 first-year university students who learned EFL in three classes. The attitude survey in April 2014 revealed that more than 70% of the participants did not like English very much.

Concerning the method for collecting the data of the implementation, before and after each PBLT the participating students were asked to return the same questionnaire about the three psychological needs and intrinsic motivation toward English learning. This questionnaire (see Appendix-1), which was almost the same as that of Hiromori and Tanaka (2006), had two parts. The first part had twelve statements, each four of which referred to each psychological need. The second part had five statements, all of which referred to intrinsic motivation. Each statement had seven Likert scales.

4.1. PBLT in the first semester

First, the procedure about the first PBLT is mentioned. This PBLT constituted of six lessons in the second half of the first semester. There were seven steps of the procedure. (1) The participants in each class decided one of the topics which they had already learned in the textbook for their presentation. For example, each participant could choose his/her favorite things, his/her family, his/her hometown, or his/her school life. (2) The students divided into several groups based on each topic, shared and discussed their topic in each individual group, and helped one another research on the same topic. (3) They made their own English presentation referring to their teacher’s and group members’ advice. (4) They revised their English presentation at least twice through corrections by the teacher.

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（5）They prepared one visual aid like a picture or a drawing. （6）They practiced for giving their individual presentations in each pair and in each group. （7）At the sixth lesson, they gave their own presentation in the class and got some positive feedback from their teacher and classmates.

Before the results are reported, whether or not this set of six lessons mentioned above was on the basis of the concepts of PBLT is examined. Based on Tanaka (2011) (see 3.1), this procedure was recognized to include the three critical elements of PBLT, which are discussion, research, and presentation. Moreover, this procedure had the potential to fulfill the three psychological needs. Based on Hiromori and Tanaka’s (2006, 2007) research (see 2.3 & 3.2), several devised ways were found in the procedure of the first PBLT. Deciding a topic, researching on it, and making their own presentation could stimulate the students’ need for autonomy. Discussing the same topic among the group members, helping one another do their own research, and advising about the other members’ presentations could meet the need for relatedness. Besides, giving their own presentation in English and getting positive feedback could help to fulfill the need for competence.

Next, the way of analysis is mentioned. First, the data of the first part of the pre-questionnaire of the first PBLT about three psychological needs were analyzed by factor analysis (extraction method: Maximum Likelihood, rotation: Promax). Since the factor analysis showed three factors (the needs for competence, relatedness, and autonomy), Univariate ANOVA was applied to the data of the pre-questionnaire (May 12, 2014) and the post-questionnaire (July 28, 2014). According to the Univariate ANOVA, significant interaction between the first PBLT and the three factors was showed. Based on the result of significant interaction, simple main effect test was applied (Table 1). As Table 1 shows, significant differences in the three psychological needs were observed in Factor I (the need for competence): $F (1,195) = 240.37$, $p < .01$, Factor II (the need for relatedness): $F (1,195) = 156.62$, $p < .01$, and Factor III (the need for autonomy): $F (1,195) = 195.80$, $p < .01$.

<table>
<thead>
<tr>
<th>Factor</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor I</td>
<td>105.45</td>
<td>1</td>
<td>105.48</td>
<td>240.37**</td>
<td>.00</td>
</tr>
<tr>
<td>Factor II</td>
<td>68.73</td>
<td>1</td>
<td>68.73</td>
<td>156.62**</td>
<td>.00</td>
</tr>
<tr>
<td>Factor III</td>
<td>85.92</td>
<td>1</td>
<td>85.92</td>
<td>195.80**</td>
<td>.00</td>
</tr>
</tbody>
</table>

Note: ** shows there was significant difference between pre- and post-questionnaires ($p < .01$).

Second, the data of the second part of the pre-questionnaire about intrinsic motivation were analyzed by factor analysis (extraction method: Maximum Likelihood, rotation: Promax). Since the factor analysis showed one factor, two-way t-test was applied to the data of the pre-/post-questionnaires.

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>M  SD</td>
<td>M  SD</td>
<td>t</td>
</tr>
<tr>
<td>66</td>
<td>15.98 4.44</td>
<td>25.69 5.19</td>
<td>17.11**</td>
</tr>
</tbody>
</table>

Note: ** shows there was significant difference between pre- and post-questionnaires ($p < .01$).
This t-test showed significant difference between the pre- and the post-questionnaires (Table 2) as follows: $t(65) = 17.11, p < .01$. The effect size of this t-test showed large size ($r = .91$).

4.2. PBLT in the second semester

Like the first PBLT, first, the procedure of the second PBLT is described. This PBLT constituted of eight lessens in the second half of the second semester. Besides, it took about 40 minutes to conduct PBLT in each lesson of 90 minutes. There were seven steps of the procedure. (1) The participants in each class shared the goal of the second PBLT and understood each story of three English dramas, which were Peach Boy, Shining Princess, and the Gigantic Turnip. (2) Individual students in each class decided one English drama and divided into several groups based on each drama. (3) They researched on their decided drama and arranged some parts of the story. (4) They created some lines of the story through discussion and revised some parts of the lines through corrections by the teacher. (5) They prepared some props like horns of demons. (6) They practiced and advised one another about performance in each group. (7) At the eighth lesson, they did group performance of their English drama in the class and got some positive feedback from their teacher and classmates.

Like the first PBLT, the procedure of the second PBLT included the three critical elements of PBLT, discussion, research, and presentation. Moreover, this procedure also had the potential to fulfill the three psychological needs. Deciding an English drama, researching on it, and arranging some parts of the story by themselves could stimulate their need for autonomy. Discussing the lines of their story among the group members, helping one another create the lines and practicing their performance in each group could meet the need for relatedness. Moreover, doing their English drama and getting positive feedback could help to fulfill the need for competence.

Then, like the first PBLT, the data of the first part of the pre-questionnaire of the second PBLT were analyzed by factor analysis (extraction method: Maximum Likelihood, rotation: Promax). The result of the factor analysis showed three factors, which means the three psychological needs. Since the factor analysis showed the three factors, Univariate ANOVA was applied to the data of pre-questionnaire (November 17, 2014) and post-questionnaire (January 26, 2015). Like the analysis of the first PBLT, based on the result of significant interaction, simple main effect test was applied (Table 3). As Table 3 shows, significant differences in the three psychological needs were observed in Factor I (the need for competence): $F(1,189) = 142.38, p < .01$, Factor II (the need for relatedness): $F(1,189) = 214.37, p < .01$, and Factor III (the need for autonomy): $F(1,189) = 123.08, p < .01$.

<table>
<thead>
<tr>
<th>Factor</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor I</td>
<td>66.85</td>
<td>1</td>
<td>66.85</td>
<td>142.38*</td>
<td>.00</td>
</tr>
<tr>
<td>Factor II</td>
<td>100.64</td>
<td>1</td>
<td>100.64</td>
<td>214.37*</td>
<td>.00</td>
</tr>
<tr>
<td>Factor III</td>
<td>88.73</td>
<td>1</td>
<td>88.73</td>
<td>123.08*</td>
<td>.00</td>
</tr>
</tbody>
</table>

Note: ** shows there was significant difference between pre- and post-questionnaires ($p < .01$).

Next, the data of the second part of the pre-questionnaire of the second PBLT were analyzed by
factor analysis (extraction method: Maximum Likelihood, rotation: Promax). The result of the factor analysis showed one factor, which means intrinsic motivation. According to the two-way t-test, there was significant difference between the pre- and the post-questionnaires (Table 4) as follows: \( t(63) = 9.06, p < .01 \). The effect size of this t-test showed large size \( (r = .75) \).

<table>
<thead>
<tr>
<th>N</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>64</td>
<td>17.58</td>
<td>5.70</td>
<td>23.30</td>
</tr>
</tbody>
</table>

Note: ** shows there was significant difference between pre- and post-questionnaires \((p < .01)\).

4.3. Discussion

In this section, the present researcher responds to the research question based on the results of the two sets of PBLT (the first PBLT & the second PBLT) (see 4.1 & 4.2). With regard to the three psychological needs, both sets of PBLT fulfilled the participants’ three needs. Moreover, both sets of PBLT enhanced their intrinsic motivation. Therefore, the research question (Does L2/FL students’ intrinsic motivation increase if PBLT satisfies their three psychological needs?) was answered positively. However, the changes between pre- and post-data for the three psychological needs of the first PBLT and those of the second PBLT were almost the same, although the second PBLT aimed to fulfill the need for relatedness more adequately than that of the first one. It may be possible to say that the first PBLT had had enough influence on the participants to develop their relatedness. In fact, the average of the need for relatedness in the post-questionnaire of the first PBLT was 5.71 (top score: 7.00), although individual averages for the needs for competence and autonomy were 5.36 and 5.33. Therefore, there might have been little promise to develop the relatedness further in the second PBLT.

5. Conclusion

To sum up, on the basis of these findings in Chapter Four it is possible to mention that L2/FL students’ intrinsic motivation can increase if PBLT satisfies their three psychological needs. Moreover, PBLT is seen to have the potential to motivate students to study English based on the theoretical perspective of SDT. Based on this conclusion, it is important for teachers to try to positively stimulate these three psychological needs by applying PBLT to their own classroom. Actually, when teachers plan the use of PBLT, there are some pedagogical implications. It is significant to take into consideration students’ language levels and interests, and share the goal of PBLT with their students. In fact, in the second PBLT of this research some students could not work on English drama with much interest. Furthermore, this research did not examine the relationship between intrinsic motivation and English ability. In the future, it will be necessary to investigate this relationship with SDT and PBLT.
References


Appendix-1

英語学習の取り組みに関するアンケート

I. この授業に対する印象や取り組みについて以下の基準で、該当する数字に○をつけてください。

<table>
<thead>
<tr>
<th>①</th>
<th>②</th>
<th>③</th>
<th>④</th>
<th>⑤</th>
<th>⑥</th>
<th>⑦</th>
</tr>
</thead>
<tbody>
<tr>
<td>全く違う</td>
<td>違う</td>
<td>やや違う</td>
<td>どちらでもない</td>
<td>ややその通り</td>
<td>その通り</td>
<td>全くその通り</td>
</tr>
</tbody>
</table>

1. 先生は、自分たちの授業に関する意見を尊重してくれると思う  (① ② ③ ④ ⑤ ⑥ ⑦)
2. ブレシャーをあまり感じずに勉強することができると思う  (① ② ③ ④ ⑤ ⑥ ⑦)
3. 「できた」という達成感が得られることがあると思う  (① ② ③ ④ ⑤ ⑥ ⑦)
4. 先生や仲間から「よくできた」とほめられるなど、頑張れば良い評価をしてもらえると思う  (① ② ③ ④ ⑤ ⑥ ⑦)
5. 「よくがんばった」という満足感が得られることがあると思う  (① ② ③ ④ ⑤ ⑥ ⑦)
6. 自分の努力が実ったという充実感が得られることがあると思う  (① ② ③ ④ ⑤ ⑥ ⑦)
7. 同じ教室の仲間とうまくやっていると思う  (① ② ③ ④ ⑤ ⑥ ⑦)
8. ペアやグループ活動では、協力し合う雰囲気があると思う  (① ② ③ ④ ⑤ ⑥ ⑦)
9. 和気あいあいとした雰囲気があると思う  (① ② ③ ④ ⑤ ⑥ ⑦)
10. 同じ教室の仲間同士で学び合う雰囲気があると思う  (① ② ③ ④ ⑤ ⑥ ⑦)
11. 授業の進め方などの希望を先生に伝える機会があると思う  (① ② ③ ④ ⑤ ⑥ ⑦)
12. 授業中宿題等について説明があったり質問したりできるので、自宅でも学習しようと思う  (① ② ③ ④ ⑤ ⑥ ⑦)

II. 英語学習に関する動機や理由について、Iと同じ基準で該当する数字に○をつけてください

1. 勉強している時「あっそうだ」「なるほど」とのような発見があるから  (① ② ③ ④ ⑤ ⑥ ⑦)
2. 英語を勉強することで、初めて気づくことがあると嬉しいから  (① ② ③ ④ ⑤ ⑥ ⑦)
3. 英語圏の人々や彼らの生活様式について知るの楽しそうだ  (① ② ③ ④ ⑤ ⑥ ⑦)
4. 英語を勉強すると今までとは違う自分の一面を見発見できるから  (① ② ③ ④ ⑤ ⑥ ⑦)
5. 英語の勉強を続けると、今まで聞き取れなかった単語や内容が分かるようになるのが嬉しいから  (① ② ③ ④ ⑤ ⑥ ⑦)