Development of 4th Year Students’ English Proficiency through Project-Based Learning

Wipanee Pengnate
College of General Education and Languages, Thai-Nichi Institute of Technology
1771/1 Pattanakarn Road, Suanluang, Bangkok, Thailand
wipanee@tni.ac.th

ABSTRACT
The purposes of this research were as follows: 1) to investigate effectiveness of teaching-learning process by using Project-Based Learning for fourth-year TNI students, and 2) to study students’ satisfaction towards teaching-learning process by using Project Based Learning. Research samples were 40 fourth-year TNI students who enrolled in Reading and Writing Skills in English1 (ENL-415) and Academic Writing (ENL-420) courses in the first semester of 2014 academic year. The instrument used for gathering the data were the questionnaires with rating-scale and open-ended questions and interview. Statistic used for analyzing the data were mean, standard deviation and content analysis. Research findings were as follows: Students had a high level of satisfaction towards teaching-learning process by using Project-Based Learning. When considering each aspect, teaching materials and teaching techniques were at high levels. Students had a high level of satisfaction towards three stages of Project-Based Learning. When considering each aspect, Pre-Project Stage, During-Project Stage and Post-Project Stage were at high levels. Students had a high level of satisfaction on their self-assessment towards teaching-learning process by using Project-Based Learning. Results of students’ interviews were listed as follows: Advantages of teaching-learning process by using Project-Based Learning were improvement of four English communicative skills—listening, speaking, reading and writing; and working experiences derived from an interview with an organization. Benefits of teaching-learning process by using Project-Based Learning were to enhance knowledge, thinking skills, attitude, personalities, and practice. Problems and obstacles of teaching-learning process by using Project-Based Learning were time-consuming, process of interview and team working.

Keywords: Project-Based Learning, English Teaching-Learning Process, English Teaching Activities

Introduction
Project-based learning (PBL) is an instructional model that is based in the constructivist approach to learning, which entails the construction of knowledge with multiple perspectives, within a social activity, and allows for self-awareness of learning and knowing while being context dependent (Duffy & Cunningham, 1996). Five criteria for PBL are focused on central to the curriculum, problems that drive the students to struggle with major concepts, the students in constructivist investigation, student-driven, and realistic (Thomas, 2000). Grant (2002) further demonstrates that PBL implementation are an anchor of the activity, a task, an
investigation, provision of resources, scaffolding, collaboration, and opportunities for reflection and transfer. A more radical approach is advocated by Moursund (1999) who reveals that PBL enhances students’ knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks. In this way, students are exposed to a wide range of skills and competencies such as collaboration, project planning, decision making, and time management (Dickinson et al., 1998). Consequently, PBL might increases the motivation of students and students’ engagement of learning. This is similar to Bottoms and Webb (1998) who state that teachers often note improvement in attendance, higher class participation, and greater willingness to do homework through PBL activities. Therefore, when teachers successfully implement project-based learning, students can be highly motivated, feel actively involved in their own learning, and produce complex, high-quality work.

Project-based learning offers a wide range of benefits to both students and teachers. A growing body of academic research supports the use of project-based learning in school to engage students, cut absenteeism, boost cooperative learning skills, and improve academic performance (George Lucas Educational Foundation, 2001). For students, benefits of project-based learning include:

1. Increased attendance, growth in self-reliance, and improved attitudes toward learning (Thomas, 2000)
2. Academic gains equal to or better than those generated by other models, with students involved in projects taking greater responsibility for their own learning than during more traditional classroom activities (Boaler, 1997; SRI, 2000)
3. Opportunities to develop complex skills, such as higher-order thinking, problem-solving, collaborating, and communicating (SRI, 2000)
4. Access to a broader range of learning opportunities in the classroom, providing a strategy for engaging culturally diverse learners (Railsback, 2002)

Additionally, many teachers are pleased to find a model that accommodates diverse learners by introducing a wider range of learning opportunities into the classroom. Teachers find that students who benefit the most from project-based learning tend to be those for whom traditional instructional methods and approaches are not effective (SRI, 2000). A professional development presentation developed by Intel® Teach to the Future (2003) describes a classroom where the teacher is using the project-based learning model effectively. In such a setting:

1. There is a problem with no predetermined answer
2. There is an atmosphere that tolerates error and change
3. Students make decisions with a framework • Students design the process for reaching a solution
4. Students have a chance to reflect on the activities
5. Assessment takes place continuously
6. A final product results and is evaluated for quality

For students accustomed to a more traditional school experience, this means a transformation from following orders to carrying out self-directed learning activities; from memorizing and repeating to discovering, integrating, and presenting; from listening and reacting to communicating and taking responsibility; from knowledge of facts, terms, and content to understanding processes; from theory to application of theory; from being teacher dependent to being empowered (Intel, 2003).
However, it seems that the current state of English language teaching in TNI largely excludes autonomous and self-directed learning approaches. This is asserted by Wiggins (2004) who indicates that traditional teacher-centered instruction via lecture does little to foster essential skill development, seeing as how students are rarely given assignments outside the classroom which could readily translate into real-life practicability. This fails to paint a complete picture of the process of teaching essential skills in universities since they are of no practicality in real world situations.

This study, therefore, attempts to address this gap by introducing PBL as a remedial factor to bridge the gap between theory and practice. PBL as a teaching technique could be a natural extension to many existing English courses. This claim is supported by certain innovative ideas in the field which state that PBL provides opportunities for growing students’ basic skills such as self-directed learning skills among students (Thomas, 2000). This is supported by Harding et al.’s research (2007) who conduct a study on students’ self-directed learning in PBL contexts. In their study, the experimental group consisted of 33 students while the control group consisted of 34 students from the engineering faculty. The study was carried out over a ten-week period. Findings showed that the learners who were instructed in PBL situations obtained higher scores than their counterparts in the control group. Consequently, it might be implied that a well-designed project might encourage active communication and higher-level thinking of the fourth-year TNI students.

Research Objectives

Objectives of this research were:
1. to investigate effectiveness of teaching-learning process by using Project-Based Learning for fourth-year TNI students, and
2. to study students’ satisfaction towards teaching-learning process by using Project Based Learning.

Methodology

Population and Samples

Population of this research was 500 fourth-year TNI students in three faculties of Business Administration, Information Technology and Engineering.

Samples of the research were 40 fourth-year TNI students who enrolled Reading and Writing in English 1 and Academic Writing in English courses in the first semester of 2014 academic year.

Instrumentation

The instruments used in this study were questionnaires and interview as follows:
1. Unstructured Interview
2. Satisfaction Questionnaires
   a. A satisfaction questionnaire towards teaching-learning process by using Project-Based Learning. This questionnaire aimed to assess teaching materials and teaching techniques.
   b. A satisfaction questionnaire towards Project stages which were categorized into Pre stage, During stage and Post stage.
   c. A satisfaction questionnaire towards self-assessment.
Data Analysis

Data analysis from unstructured interview was content analysis. The collected data from questionnaires were analyzed by using computer program. The statistics used for analyzing the data were mean and standard deviation. Data analysis from questionnaires both single item and whole questionnaire presented in a form of rating scale. These rating scales were calculated to find out mean and standard deviation and then translated based on criteria developed by Best (1981) as follows:

\[ 1.00 \leq \bar{x} < 1.50 \] refers students had the lowest satisfaction
\[ 1.51 \leq \bar{x} < 2.50 \] refers students had low satisfaction
\[ 2.51 \leq \bar{x} < 3.50 \] refers students had moderate satisfaction
\[ 3.51 \leq \bar{x} < 4.50 \] refers students had high satisfaction
\[ 4.51 \leq \bar{x} < 5.00 \] refers students had the highest satisfaction

Results

Phase 1: The Results of Satisfaction Questionnaires

Table 1
The Results of Satisfaction Questionnaire towards Teaching-Learning Process by Using Project-Based Learning

<table>
<thead>
<tr>
<th>No.</th>
<th>Aspects</th>
<th>n = 40</th>
<th>( \bar{x} )</th>
<th>S.D.</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Teaching material</td>
<td></td>
<td>4.46</td>
<td>0.51</td>
<td>High</td>
</tr>
<tr>
<td>2.</td>
<td>Teaching technique</td>
<td></td>
<td>4.45</td>
<td>0.49</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>4.45</strong></td>
<td><strong>0.50</strong></td>
<td>High</td>
</tr>
</tbody>
</table>

Table 1 presented that students had a high level of satisfaction towards teaching-learning process by using PBL in overall (\( \bar{x} = 4.45 \)). When considered in each aspect, it found that students had a high level of satisfaction in teaching material and teaching technique (\( \bar{x} = 4.46 \) and \( \bar{x} = 4.45 \) respectively).

Table 2
The Results of Satisfaction Questionnaire towards Project Stages: Pre Stage; During Stage and Post Stage

<table>
<thead>
<tr>
<th>No.</th>
<th>Aspects</th>
<th>n = 40</th>
<th>( \bar{x} )</th>
<th>S.D.</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Pre stage</td>
<td></td>
<td>4.48</td>
<td>0.50</td>
<td>High</td>
</tr>
<tr>
<td>2.</td>
<td>During stage</td>
<td></td>
<td>4.42</td>
<td>0.49</td>
<td>High</td>
</tr>
<tr>
<td>3.</td>
<td>Post stage</td>
<td></td>
<td>4.44</td>
<td>0.49</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>4.43</strong></td>
<td><strong>0.49</strong></td>
<td>High</td>
</tr>
</tbody>
</table>

Table 2 indicated that students had a high level of satisfaction towards Project Stage in overall (\( \bar{x} = 4.43 \)). When considered in each aspect, it found that students had a high level of satisfaction in Pre stage, During stage and Post stage (\( \bar{x} = 4.48 \), \( \bar{x} = 4.42 \) and \( \bar{x} = 4.44 \) respectively).
Table 3
The Results of Satisfaction Questionnaire towards Self-Assessment

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>n = 40</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Choosing the project topic</td>
<td>4.55</td>
<td>The highest</td>
</tr>
<tr>
<td>2.</td>
<td>Identifying objectives of the project</td>
<td>4.41</td>
<td>High</td>
</tr>
<tr>
<td>3.</td>
<td>Planning the project process</td>
<td>4.38</td>
<td>High</td>
</tr>
<tr>
<td>4.</td>
<td>Knowledge of the project background</td>
<td>4.27</td>
<td>High</td>
</tr>
<tr>
<td>5.</td>
<td>Creativity</td>
<td>4.34</td>
<td>High</td>
</tr>
<tr>
<td>6.</td>
<td>Responsibility</td>
<td>4.55</td>
<td>The highest</td>
</tr>
<tr>
<td>7.</td>
<td>Communication</td>
<td>4.21</td>
<td>High</td>
</tr>
<tr>
<td>8.</td>
<td>Answering the inquiries</td>
<td>4.45</td>
<td>High</td>
</tr>
<tr>
<td>9.</td>
<td>Creating friendship</td>
<td>3.79</td>
<td>High</td>
</tr>
<tr>
<td>10.</td>
<td>Self-confidence</td>
<td>4.48</td>
<td>High</td>
</tr>
<tr>
<td>11.</td>
<td>Time management</td>
<td>4.51</td>
<td>The highest</td>
</tr>
<tr>
<td>12.</td>
<td>Project achievement</td>
<td>4.07</td>
<td>High</td>
</tr>
<tr>
<td>13.</td>
<td>Self-improvement</td>
<td>4.21</td>
<td>High</td>
</tr>
<tr>
<td>14.</td>
<td>Team working</td>
<td>4.10</td>
<td>High</td>
</tr>
<tr>
<td>15.</td>
<td>Project satisfaction</td>
<td>4.45</td>
<td>High</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>4.32</td>
<td>High</td>
</tr>
</tbody>
</table>

According to Table 3, students had a high level of self-assessment on their project ($\bar{x} = 4.32$). When considering each item, there were three highest levels of satisfaction on item 1 “Choosing the project topic” ($\bar{x} = 4.55$), item 6 “Responsibility” ($\bar{x} = 4.55$), and item 11 “Time management” ($\bar{x} = 4.51$).

Phase 2: The Results of Unstructured Interview

The results of unstructured interview were categorized into three groups which were advantages of teaching-learning process by using PBL, benefits of teaching-learning process by using PBL, and problems and obstacles during the project.

- Advantages of teaching-learning process by using PBL
  - To improve English communicative skills in a form of listening, speaking, reading and writing
  - To gain a real experience of needs and problems in the workplace from interviewing with an organization
  - To generate students’ leadership skill as the students had to plan all the project process
  - To enhance students’ self-learning
  - To learn how to work as a team- brainstorming, listening to others, planning together and responsible for one owns’ job
  - To learn how to manage working system
  - To learn how to manage the time effectively

- Benefits of teaching-learning process by using PBL
  Main benefits were discussed as follows:
  - Knowledge- students learned how to search for information from
various sources of knowledge.
  o Thinking Skills- students learned critical thinking and analytical thinking to create a project report and presentation.
  o Attitude- students learned new dimension of working from an interview.
  o Personality- students learned how to dress suitably when interviewing with an organization as well as present in front of a class with more self-confidence.
  o Practice- students had an opportunity to practice in forms of reading sources of information, writing a project report, interviewing with an organization and presenting project presentation, working as a team, and listening to other’s opinions.

• Problems and obstacles during the project
  o Time consuming - students had to learn how to do the project while studying ENL-415/ENL-420 courses. Thus, process of the project had to be planned and managed as extra activity outside classroom. Some groups, however, were not able to finish the project on time due to lack of well management.
  o Process of interview - it was compulsory for all students to interview staff and managers from an organization to study about their needs and problems in the workplace. However, there were unexpected change which forced the students to change their organization before an interview time, and had to find out a new organization again.
  o Team working - some groups had a problem of task distribution. In some groups, students who were good at English had more tasks than others. Some students only helped their group by recording video. Further, some students could not help their group members to do the project after class. As a result, these effected on group performance and conflict among group members.

Conclusion

According to the study and data analysis, the results of this study were concluded as follows:

Phase 1: The Results of Satisfaction Questionnaires

Students had a high level of satisfaction towards teaching-learning process by using PBL in overall \( \bar{x} = 4.45 \). When considered in each aspect, it found that students had a high level of satisfaction in teaching material and teaching technique \( \bar{x} = 4.46 \) and \( \bar{x} = 4.45 \) respectively).

Students had a high level of satisfaction towards Project Stage in overall \( \bar{x} = 4.43 \). When considered in each aspect, it found that students had a high level of satisfaction in Pre stage, During stage and Post stage \( \bar{x} = 4.48, \bar{x} = 4.42 \) and \( \bar{x} = 4.44 \) respectively).

Students had a high level of self-assessment on their project \( \bar{x} = 4.32 \). When considering each item, there were three highest satisfaction on item 1
“Choosing the project topic” ($\bar{x} = 4.55$), item 6 “Responsibility” ($\bar{x} = 4.55$), and item 11 “Time management” ($\bar{x} = 4.51$).

Phase 2: The Results of Unstructured Interview

1.1 Advantages of teaching-learning process by using PBL

The majority of the students revealed that advantages of teaching-learning process by using PBL was to improve English communicative skills in a form of listening, speaking, reading and writing. Some students believed that PBL project was to fulfill their experience of needs and problems in the workplace from a real situation. Some indicated that PBL generated a leadership skill. However, the minority of the students concerned on time management.

1.2 Benefits of teaching-learning process by using PBL

Main benefits of PBL were demonstrated into five categories as knowledge, thinking skills, attitude, personality and practice.

a. Problems and obstacles during the project

There were three major problems and obstacles mentioned during the project as time consuming, process of interview and team working.

Discussion

According to the study and data analysis, the results of this study can be discussed as follows:

1. It was found out that students had a high level of satisfaction on teaching-learning process through PBL. This is similar to Yam and Burger (2009)’s statement that to make PBL effective, teachers play important roles in motivating students and creating a classroom environment conducive for students learning. In addition, students’ progress need to be observed so that problems can be detected early (Winn 1995). Therefore, teachers’ support as well as continuous tutorial discussions involving teachers and students is imperative to sustain students’ motivation in the PBL process.

2. The study presented that students had a high level of satisfaction on Project Stages: Pre Stage; During Stage and Post Stage. This result is relevant to the study of Jonassen (2000) who states that the essence of project based learning is its student-centeredness, with students as actors and teachers as directors on an authentically decorated stage. The projects designed by students in project-based learning are intended to have meaning in light of the students’ long-term goals. Consequently, through three-stage model, the students were enhanced to orient to the project and brainstorm ideas, investigate the topic using multiple sources of information, and develop their own final products.

3. It was revealed that students had a high level of satisfaction on self-assessment on their project. Two highest mean scores were at “Choosing the project topic” and “Responsibility”. This is similar to Krajcik et al. (1999)’s study who highlight values of PBL as students develop integrated understanding of materials; students learn to collaborate with each other in solving problems; it promotes independent learning as students assume greater responsibility in their learning.
4. The interview results were demonstrated as follows:

4.1 The remarkable advantages of teaching-learning process through Project-Based Learning were development of communicative skills and real experience from an organization. This is relevant to Blumenfeld et al. (1991); Green (1998); Hadim and Esche (2002) who advocate various benefits associated with PBL approach as PBL is real-life applications of principles learnt from the course, PBL improves students’ motivation and gives students a sense of satisfaction. Besides enhancing students’ participation in the learning process (active learning and self-learning), it also helps to improve communication and collaborative skills that are important in their working life.

4.2 Students noted that teaching-learning process through PBL encouraged their knowledge, thinking skills, attitude, personality and practice. The project they had done was crucial in constructing their knowledge and engagement. This is similar to Biggs and Tang (2007) who point out that learners construct knowledge through their own activities, and building on what they already know. A more radical approach is further advocated by Jonassen (2000) who demonstrates that the projects designed by students in project-based learning are intended to have meaning in light of the students’ long-term goals. To maximize the relevance or meaning of learning, it must be active, constructive, international, authentic and cooperative. Therefore, PBL is a teaching approach that emphasizes student participation in the learning process to construct their knowledge in an active learning environment.

4.3 Problems and obstacles derived during the project as time consuming, process of interview and team working. This is relevant to Frank et al. (2003) who assert that despite numerous benefits of PBL approach, it presents several challenges for the teachers as students’ lack of experience in PBL, and the organization and administration of PBL can be very time-consuming. In addition, students who are inexperienced in collaborative learning environment may find difficulties in working in groups (Johnson and Johnson 1989). In this regards, teacher should provide support for group work and conflict management to facilitate the process.

Acknowledgements

This research is supported by College of General Education and Languages, Thai-Nichi Institute of Technology, Bangkok, Thailand.

References


