Let's Go Traveling – Project-Based Learning in a Taiwanese Classroom

B. T. Wang, C. W. Teng, and Y. H. Lin

Abstract—The aim of this project was to use the concept of Project-based Learning (PBL) in a junior high school English classroom in Taiwan. Through the PBL curriculum design, it is hoped to develop students' creativity, cooperative learning ability and data collection ability. Besides, students' English writing ability and conversation skills can also be improved during this PBL curriculum. During the 9-week lecture, an English class was chosen to conduct the research, and there were 30 ninth-grader students (approximately age 15) who joined this English PBL research. The whole class was divided into 10 groups. Each group was asked to submit the work of English mind mapping, postcard, and traveling journal. At the end of the project, the formative assessments were used to check students' projects. That is, each group had to read the traveling journal aloud in front of the class and the rubrics designed by the English teacher were used to evaluate the students' performances. Also, each student was asked to fill out the self-evaluation form to check his own progress. The results showed that students learned how to use the search engine, like Google or Yahoo through the project. Moreover, their ability of data collection and sorting information was also improved. In addition, the students understood more of foreign countries' culture and tourist attractions. Through the PBL curriculum, students can not only apply what they have learned in the English class to conduct the project, but they can also increase their English learning achievement.

Index Terms—Project-based learning, curriculum design, cooperative learning, English writing ability and formative assessments.

I. INTRODUCTION

Recently, multiple assessments and creative teaching methods have been taken seriously in the educational field [1], [2]. However, most junior high school teachers in Taiwan still use the traditional paper-and-pencil test instead of multiple assessment methods. Probably it is because they need to follow the school schedule, or it is time-consuming to do multiple assessments. But the learner-centered teaching is a trend, and teachers are encouraged to create a learning environment which can not only inspire students' learning motivation, but also develop students' critical thinking ability [3].

Hence, in this paper, we used the PBL method in a junior high school's English classroom. The purpose of this research was to encourage students' to create their own work,

improve their collaborative skills, find information on their own and let them experience different cultures worldwide.

Based on the content of the junior high school English textbook, the teacher designed different English projects, such as writing postcards, traveling journal, etc. The aim was to let the students apply their English knowledge to complete the tasks. Through this PBL curriculum, students can understand the timing of using tenses, format of postcard and envelope, read the journal with appropriate intonation and find information on the Internet. In addition, students learned to work with their group members to accomplish the tasks.

After the 9-week lecture, students' performances were evaluated through three ways: teacher's evaluation, peer-evaluation and self-evaluation. At the end of this PBL research, we would like to investigate the following questions:

1) How well are students' meeting the teacher's requirements and expectations?
2) What needs improvement in this PBL curriculum?
3) What have students learned through the PBL curriculum?

II. LITERATURE REVIEW

A. PBL

PBL is based on the constructivism theory, along with the cognitive psychology and the concept of learning in a context [4]. It refers to a learner-centered approach, and there is a topic for the learners to achieve [5]. Learners can acquire the knowledge by using the methods like discussion, cooperative learning, or data collection [5], [6]. At the end of the project, learners are expected to present the project [5], [6].

The spirit of PBL is that learners can learn by doing and learn by research [7]. The assigned work can be a paper, a model or even a program [7], [8]. The main purpose of PBL is to eliminate students' inert knowledge phenomena, and make students have problem-solving ability [7], [9]. Besides, PBL can provoke students' learning motivation, critical thinking ability, communicative skills, and data collection ability [10]. The educational concepts of PBL can be summarized as follows [7]-[10]:

1) Constructivism theory: instead of receiving knowledge from the instructor, students learn actively. PBL can create a knowledge-construction environment for the learners.
2) Learning by exploring: the tasks are designed as open-ended questions for students to investigate the answers. In the realistic situation, students learn how to gather information and solve problems.
3) Cooperative learning: usually, the students work as a team to solve problems and accomplish the project. Each

student has his individual responsibility in the group and he needs to communicate his ideas with other group members.

Comparing with the traditional teaching methods, PBL seems to be different in the following aspects [11].

1) Teacher's role: instead of being an instructor in class, the teacher in the PBL classroom is more like a curriculum designer, and a guide who inspires students' thought-provoking skills.
2) Learning method: PBL is student-centered while the traditional teaching is teacher-centered.
3) Learning content: the traditional teaching is textbook-based while PBL integrates the textbook, online resources and media.
4) Assessment method: the traditional teaching emphasizes the overall scores; however, PBL cares students' learning process and outcomes from the experience.

In addition, Adria Steinberg mentioned the "Six A's—Criteria for Designing Projects" for teachers to reference when design projects [12]. The six criteria include authenticity, academic rigor, applied learning, active exploration, adult connections and assessment practices.

In short, PBL creates a student-centered classroom, and the teacher provides sufficient help to the students. Through PBL, students can construct the knowledge to accomplish the project in a group. In addition, they also improve the communicative skills with their peers, and share the information at the same time.

B. Cooperative Learning

In today's world, it is difficult for an individual to accomplish a task on his own; therefore, team work has been a trend and the idea of cooperative learning emerged [13]. Cooperative learning provides students an opportunity to work with their classmates instead of accepting information from the teacher. During the team work, students learn how to express their ideas and solve the conflict in the team [14]. Also, students can construct new knowledge and learn new skills in the team. Finally, students' learning motivation can be increased [14], [15].

According to the previous researches, the advantages of cooperative learning can be listed as follows [16]-[18]:

1) Cooperative learning encourages personal experience and knowledge sharing. The team can propose varieties of views and experiences to provoke deeper investigation.
2) Learners in cooperative learning learn and construct their knowledge actively.
3) During the cooperative learning process, learners have to present, express and modify what they have already learned. This enables them to integrate the new knowledge with old.

In cooperative learning, group members depend on one another, and they have to reach a consensus to achieve the goal [13]. Also, each team member's accountability needs to be clarified and teachers need to take this into consideration when grading. The most important is that the teacher has to express the idea of cooperative learning to the whole class, and train the students to work as a team.

When dividing the class into different groups, the teacher needs to think of which method to use. Most researchers suggest the heterogeneous grouping [16]. In heterogeneous grouping, teachers try to balance students' gender and ability in each group. It is expected that the good students can teach the weak students. Also, the different backgrounds make students to respect and understand their group members.

III. RESEARCH DESIGN

A. Participants

An English class in a junior high school in Taiwan was chosen to conduct the research, and there were 30 ninth-grader students (approximately age 15; 17 males and 13 females) who joined this English PBL research. The teacher divided the whole class into 10 groups. Based on the cooperative learning concept, the teacher made the weak students work with the good students. In this way, the good students can teach the weak students and the team can finish the project on time.

B. Procedure

The PBL flowchart in the Taiwanese classroom is shown in Fig. 1. First of all, the English teacher taught the English verb tenses and English letter format in class. At this stage, the English teacher focused on the content in the textbook. Then the English teacher used the heterogeneous grouping to divide the class into different groups. Meanwhile, the groups were assigned tasks, and they started to find the information on the Internet. After that, each group worked on the "mind mapping" and reported their work in class. Next, each group chose a tourist attraction and wrote the traveling journal and postcard. Finally, they finished writing the English envelope and gave presentations in class.
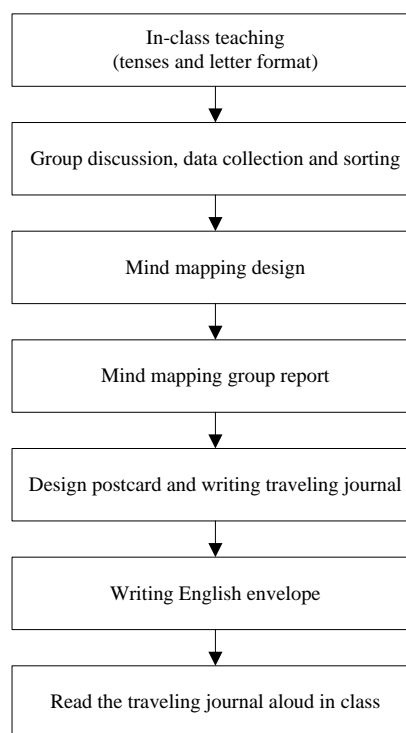

Fig. 1. PBL flowchart.

C. PBL Curriculum Design

By following PBL 6 A's criteria [12], the English teacher designed the projects and the details are listed in Table I.

TABLE I: PBL 6A'S CURRICULUM DESIGN

Categories	Content
Authenticity	One of the assigned project asked students to explore the world, and understand the cultures and features. Besides, writing postcards and English letters let students apply what they had learned in the textbook to the real-world situation.
Academic rigor	The project asked students to use different tenses in different situation which was corresponded to the curriculum goal.
Applied learning	The English journal writing required students to use the vocabulary, grammar, and sentence patterns to complete the project. Also, students applied their information literacy to collect the information.
Active exploration	In order to complete the project, students had to find information on the Internet. In addition, the team members had to share, discuss and integrate the information in the group.
Adult connections	Based on the project topics, parents can provide timely assistance.
Assessment practices	In the PBL, students had to complete postcard writing, English journal writing, mind mapping drawing and gave an in-class presentation. Hence, there are three different rubrics to evaluate students' performances.

D. Instrument

To check students' progress, the formative assessments were included. First, the English teacher designed the rubrics to grade students' work and presentation. Besides, students had to fill in the self-evaluation forms. Moreover, each group could give grades to other groups. Finally, each group needed to submit the traveling journal, project progress journal, and English postcards to the teacher.

IV. RESULTS AND DISCUSSION

According to students' self-evaluation form, what they had learned through the PBL can be concluded as follows:

1) Students learned how to use the Internet tools, such as Google, Yahoo, ChungHua post website, and Google translation software.
2) Students' ability of data collection and integration had been enhanced.
3) Students understood the cultures and tourist attractions better. Fig. 2 showed the example of students' mind mapping work, which proved their understanding of the tourist attraction.
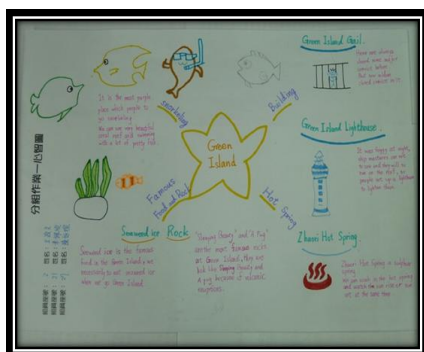

Fig. 2. An example of students' mind mapping work.

4) Students developed team spirit and cooperative skills in the group. Fig. 3 showed the in-class group discussion, and we could see students' active interaction. Also, they were engaged in more complex discussions.

Fig. 3. In-class group discussion.

5) Students can apply their English knowledge, including writing and speaking skills, to the real-world situation. Fig. 4 presented the English envelope written by the students, and Fig. 5 showed the English postcard designed by the students.
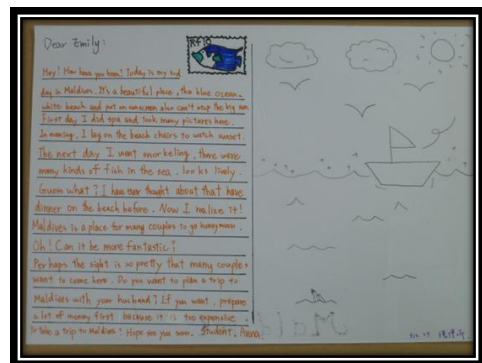

Fig. 4. English envelope.

Fig. 5. English postcard.

Fig. 6. In-class group presentation.

6) Students' learning achievement had been increased. The PBL course inspired their creativity and gave them an opportunity to find out their merits and weaknesses. Based on their self-evaluation forms, students showed positive attitudes toward the PBL.

7) Students learned the English presentation skills. Fig. 6 showed the in-class group presentation. Students needed to prepare the PPT and read the traveling journal aloud in front of the class. This was a student-centered classroom which was totally different from the traditional teaching.

On the other hand, the problems we faced during the PBL can be summarized as follows:

1) The time limitation was a big problem while doing the project. Teacher can just use few minutes to introduce the projects and examples to the students because the teacher needed to meet the school schedule.

2) Before the group presentation, there was not a chance for students to practice, and this resulted in the stage fright.

3) Students failed to control the presentation volume which caused the audience couldn't pay attention to the presentation.

4) Some results of the peer-review were not reliable because some groups didn't follow the grading rules.

5) Even the teacher used heterogeneous grouping, there were still some free-riders in the group.

6) During the group discussion, some students didn't join the discussion and even slept when the teacher was not around.

V. CONCLUSION AND IMPLICATION

Based on the results of this research, the conclusions can be summarized as follows:

1) Before conducting the project, the teacher should design some short-term courses to introduce the project to the whole class. Because the teacher had to follow the school's schedule, she could only do a brief project introduction to the class each time. Some students were kind of lost in the brief introduction, and they can make better projects if they understand the teacher's requirements clearly.

2) Before the group presentation, there should be one class for students to practice with their group members. At the same time, the teacher can give instructions to each group to reduce the worry and increase students' stage performances.

3) Teachers should give students more opportunities to speak English in the regular courses to train their volume and intonation.

4) It is better to post each group's work on the bulletin board before the group presentation. In this way, students can understand each group's topic, and they can pay more attention to the group presentation.

5) During the group presentation, the teacher needs to notice the audience's responses. Once there is someone talking, the teacher has to correct the bad manner.

6) While students carrying out the project, the teacher has to ask students to write the work schedule journal weekly. Also, the teacher should check the journal periodically to reduce the free-rider situation.

7) Teachers can encourage the weak students to learn from their team members and some prizes can be provided to those who help their weak team members.

Through the PBL, the teacher discovered that the new interests and skills in English teaching increased. However, this is just a PBL being carried out in one English class; the effectiveness of PBL can be more reliable if more classes join this project. In the future, there could be a pre-test and post-test to check students' progress in a quantitative way. Moreover, the multiple assessment methods, like individual learning portfolio, can be included to make the project more comprehensive.

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