CHUGOKUGAKUEN J. 2014
Vol. 13, pp. 9-14

CHUGOKUGAKUEN Journal
http://www.cjc.ac.jp/

Original Article

Exemplifying the Language and Content Learning, Cognitive and Social Benefits of Project-Based Language Learning Through a Mini-Research Project

Paul Moritoshi

Department of English Communication, Chugoku Junior College, Okayama 701-0197, Japan

The Project-Based Language Learning (PBLL) approach to the instruction, study and practice of foreign languages and course content requires students to work in small groups to complete an assignment over an extended period of time. To successfully complete the assignment students must apply target language and course content knowledge and skills as well as cognitive and social skills in a holistic, integrated and authentic manner. This paper exemplifies how the wide range of positive learning outcomes already associated with PBLL and documented in foreign language learning literature are elicited at various stages of a mini-research project conducted at Chugoku Junior College.

Key Words: Project-Based Language Learning, Language Knowledge and Skills, Content Knowledge and Skills, Cognitive Skills, Social Skills

Introduction

Project work is a well established form of activity within general education which requires students to work, often in small groups, to complete an assignment. The task usually takes the form of a question to be answered, a decision that must be made, a tangible piece of work for students to create or a problem to be solved. To complete the task successfully, students will often have to apply academic course content knowledge and skills which the project has been specifically designed to elicit. They will also need to use a range of cognitive processes such as critical thinking, analysis, decision-making, problem identification and solution and resource management. In group projects they will also need to socialize with their teammates, which will make demands on social skills such as cooperation, collaboration and compromise. Furthermore, pre-existing knowledge, skills and experience from other settings can be transferred to the learning context and in the process become further developed or consolidated. The overarching aims of such projects are generally to promote learning, a sense of inquiry and a capacity for autonomous learning, and often also to enhance affective factors such as motivation, interest, engagement and a sense of course ownership.

The use of project work within foreign language courses is known by various names but for simplicity here I will use 'Project-Based Language Learning' (PBLL). Despite several pedagogic differences due to the nature of the subject area, project work within foreign language classrooms makes the same academic, cognitive and social demands on students as it does for other disciplines and displays the same potential for an array of positive outcomes, as shown by Stoller [1].

In her paper, Stoller [1] outlines the numerous foreign language and content learning, cognitive, affective and social benefits that PBLL can

Corresponding author.
Paul Moritoshi
Department of English Communication, Chugoku Junior College, 83, Niwase, Kitaku, Okayama 701-0197, Japan
Tel; +81 86 293 1100 Fax; +81 86 293 2941
E-mail: paulmoritoshi@cjc.ac.jp

potentially confer and makes a cogent case for how the approach naturally lends itself to eliciting them. However, she does so without reference to the specifics of any particular project, leaving the reader with a strong understanding of the positive outcomes in theory, but with no example of how they might be achieved in practice. This paper seeks to fill that gap by explaining how a mini-research project at Chugoku Junior College elicited many of the positive outcomes she highlights. First I will reproduce the results of Stoller's [1] analysis which concisely presents the positive outcomes most frequently reported in foreign language learning literature, then I will describe how the mini-research project and its various sub-tasks naturally elicited or produced many of those outcomes.

Documented positive outcomes of PBLL

Stoller [1] presents a strong theoretical basis for the inclusion of project work in foreign language classrooms and supports her case by citing, in tabular form, numerous academic papers spanning decades and from a diverse range of national contexts. That table is reproduced below in Table 1. Note that, to avoid confusion with the disparate referencing systems, I have changed the label given to each supporting paper from a letter (in the original work) to a number here in order to conform to this journal's referencing guidelines. The table shows, in rank descending order of frequency, the beneficial outcomes commonly reported in foreign language learning literature.

The positive outcomes which Stoller highlights in her analysis can be loosely categorized in to 5 domains:

- foreign language learning (items in ranks 1 and 3)
- academic content learning (items in rank 5)
- social (items in rank 4)
- cognitive skills (items in rank 8)
- affective (items in ranks 2, 6 and 7)

As I proceed through the explanation of the project and the various sub-tasks which students had to complete, I will make reference to these various domains to show how this project in particular (and PBLL in general) lends itself to a wide range of positive learning outcomes.

The mini-research project

This project, for freshman in the Oral English A course (n=15), was conducted during the first half of the spring semester, 2011. It required students to conduct small-scale research in groups of three or four to investigate whether students on campus were living a healthy lifestyle by collecting data on eating, exercise and relaxation behaviors. This theme was chosen because it linked directly to the topical content of unit 3 in their textbook [18], which they had just studied, so offered opportunities for them to apply the related target language and content knowledge. The groups would then have to formulate lifestyle advice for the student body based on the results of their research.

Step 1: Make project teams

The first step was for the students to make project groups. However, even with something as seemingly simple as this, cognitive and social demands are still being made on students. Each has friends they would prefer to work with and occasionally others they would prefer not to work with. However, the requirement to form small groups sometimes means that a friend is excluded and needs to join another group. This sometimes elicits one student saying something like "ごめんね" (sorry) to their friend for not being included in their group. This evidences the social skill of sensitivity to others.

Understanding that this might be hurt people's feelings they wanted to use the completely random (and thereby fair) method of 'rock, paper, scissors' know as 'じゃんけん' to decide teams but I banned this practice throughout the project because it obviates participants from any cognitive or social processes. I wanted them to practice the cognitive skill of making decisions based on reasoning, rather than relying on random chance, and also to manage the consequences of their decisions through the use of social skills. It is true that this method of forming groups does sometimes result in groups within which one member does not get on well with another, but in such cases they have to develop the social skills of cooperation, at some level, in order to complete the project successfully.

Table 1 The most frequently cited positive outcomes of PBLL (Stoller [1])

		Publications About Project-Based Learning															
Rank	Reported benefits	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]
1	Authenticity of experience and language	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
2	Intensity of motivation, involvement, engagement, participation, enjoyment, creativity		✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓
3	Enhanced language skills; repeated opportunities for output, modified input, and negotiated meaning; purposeful opportunities for an integrated focus on form and other aspects of language		✓	✓		✓	✓	✓		✓		✓		✓	✓	✓	✓
4	Improved ability to function in a group (including social, cooperative and collaborative skills)			✓		✓	✓	✓		✓	✓	✓	✓		✓		
5	Increased content knowledge	✓	✓	✓					✓		✓	✓					✓
6	Improved confidence, sense of self, self-esteem, attitude toward learning, comfort using language, satisfaction of achievement		✓	✓			✓				✓		✓	✓	✓		
7	Increased autonomy, independence, self-initiation, and willingness to take responsibility for own learning			✓				✓	✓	✓	✓		✓				
8	Improved abilities to make decisions, be analytical, be critical, solve problems	✓					✓	✓	✓							✓	

Key: [2] Allen (2004); [3] Carter & Thomas (1986); [4] Coleman (1992); [5] Ferragatti and Carminati (1984); [6] Fried-Booth (1982); [7] Gardner (1995); [8] Gu (2002); [9] Gu (2004); [10] Ho (2003); [11] Lee (2002); [12] Legutke (1984); [13] Legutke (1985); [14] Levine (2004); [15] Padgett (1994); [16] Sheppard and Stoller (1995); [17] Stoller (1997)

Step 2: What do you already know?

Once the project teams are formed, students needed to start learning and thinking about the topic of what constitutes a healthy or unhealthy lifestyle. First, students used textbook and supplementary activities to learn about the three components of a healthy lifestyle: eating, exercise and relaxation behaviours (i. e. content knowledge), as well as related vocabulary and grammar (language knowledge). The activities also helped students to exchange basic information about their own lifestyles through conversation (a language skill).

To extend this knowledge base, students were asked to discuss "What do you already know about (un) healthy lifestyles?" They shared their relevant knowledge, information and experiences with their teammates during a discussion in which the target language was used in an authentic (i. e. natural) way to meet the communicative need of information exchange. This expanded both the language and content

knowledge in each group, though these additional linguistic and content items differed between groups as each team's discussion took them in different directions. The act of discussion itself involves the language skills of listening and speaking and recalling relevant previous knowledge, information and experience so involves linguistic and cognitive processes.

Students were also asked to make notes of the points made during the discussion. Note-taking is an academic skill which they have to some extent developed as a junior and senior high school student, so this is a transfer of skills from one context to another.

Step 3: Design a questionnaire

Next, the teams were tasked with designing a questionnaire to collect data on students' eating, exercise and relaxation behaviours. Designing a valid questionnaire is not as straightforward as many novices believe [19] so some instruction was given in how to word items unambiguously and how to design quantitative answer options and spaces for qualitative responses. This can be described as content knowledge, with its application being a content skill.

After the instruction, each team pooled and reviewed their notes from step 2 (collaboration) and decided which aspects of lifestyle they would like to investigate. The process of choosing which questions to ask was not only a cognitive one (decision-making) but also a social one as it was a collaborative decision often requiring negotiation and compromise.

Students then had to make the questionnaire in MS Word format. While students could type, they were unfamiliar with many of the more advanced word processing functions such as multiple columns, page/section breaks and list numbering, needed to lay out the questionnaire properly. Thus, many students acquired new content knowledge and skills relating to information technology (IT) which can be transferred to other contexts.

Students had to submit their draft questionnaires by e-mail by a deadline so that I could check and print them ready for step 4: field testing. Setting deadlines for various stages of the project required students to take responsibility for their own work and autonomous learning and to manage their resources effectively.

Step 4: Field test the questionnaire

Since this was the first time for students to design a questionnaire, it seemed like a good idea to field test their instruments with their classmates before collecting data among the wider student body. Highlighting the need for field testing or piloting as part of the research process also constitutes additional content knowledge.

Step 5: Improve the questionnaire

Field testing the questionnaires highlighted problems with the wording of items, answer options and layout which students then corrected. This stage required students to re-assess the target language they had used in their first draft (language knowledge) and to edit their forms (IT skills). The new questionnaires were submitted by e-mail for rechecking and reprinting.

Step 6: Administer the questionnaire

Students then administered their questionnaires in groups around the campus with the goal of reaching 30 participants or more. This, it was explained, is the minimum number of participants needed to attain valid statistical results (content knowledge). There was a strict rule of using English only, even with participants who were not English majors, although the researchers were allowed to explain the purpose of the questionnaire to the participants in Japanese before administering the form. The interaction practiced speaking and listening skills. The fact that respondents were mostly not English majors also meant that the researchers had to employ a range of communicative strategies such as clarification, circumlocution and paraphrase. These strategies form strategic competence which is itself one aspect of communicative competence [20]. These communicative strategies are generally acquired through real world experience, not via classroom activities which lack genuine communicative need [21], so providing opportunities to apply them in this real-world setting was beneficial to students' language skills development. Though communication was often not smooth, if the students' laughter was any measure, they seemed very much to be enjoying the challenge of trying to explain the questions and understand the responses.

Step 7: Data input and graphical representation of results

As with MS Word, students were unfamiliar with the Excel application and learned how to input data (additional content knowledge). They had to apply content knowledge to choose the most appropriate type of chart to represent the results for each item then create the chart. Though this is done largely by the software, there is still an element of individual creativity in laying out the labels, axes and keys.

Step 8: Consider your results

Once each group had its results, it had to try to interpret them. What did the results show about students' lifestyles and what, if any, practical advice could the researchers offer to help students improve their health through simple and inexpensive lifestyle changes? This stage used analytical and critical thinking (cognitive skills) as students discussed their ideas (language skills). It also applied content knowledge relating to healthy and unhealthy lifestyle practices with respect to diet, relaxation and exercise.

Step 9: Design and produce a research poster

Next students had to 'publish' there research in the form of a poster which they had been told would be put up inside the entrance to the library for all students and staff to see. Knowing that their work would be seen by their peers motivated the students to produce very colourful, well designed posters explaining the research, then presenting the results and associated advice. This design process utilised creativity, transferable (content) IT skills, language knowledge (grammar, vocabulary and spelling), language skills (speaking, listening and writing) and content knowledge relating to the topic. Once students had designed the poster on the computer they e-mail edit to me for checking and printing.

Step 10: Prepare a poster presentation

Having finished the research and produced the explanatory poster, students had to use their data, results and posters as the basis for a poster presentation in which they would present their methodology, results and conclusions in the form of the advice they had formulated.

Each group member had to participate in the presentation, but it was left to the groups to decide (cognitive skill) how to organise the division of labour. Each team member then wrote (language skill) the script for their part of the presentation, which necessitated the use of the health-related target language within a scaffold of general English (language and content knowledge). I then checked the scripts prior to the presentation day so that students would feel more confident in their English.

Step 11: Give the poster presentation

Each student group then gave its poster presentation to the class. This provided opportunities for speaking and listening, as well as various presentation skills including eye contact and body position. Students had to answer a few basic questions at the end of each presentation, which further tested their content knowledge of the topic and research methods. By the time students gave their presentations they were very familiar with the language they would need during the presentation.

Step 12: Display the posters

To end the project, students saw their research posters displayed in the library for all to see. Their comments included "They look good" and "Yours is very colourful". Though no formal measure was taken, students seemed very satisfied with the end product and happy to have it publically displayed.

Summary of pedagogic outcomes

Through this project spanning eight weeks (16 lessons) students had opportunities to acquire and practice target language and content knowledge relating to the lifestyle behaviours of diet, exercise and relaxation as well as to research methods and information technology. They also applied the language skills of speaking, listening, writing, discussion, negotiation and presentation and utilised pre-existing personal knowledge, skills and experience transferred from other contexts. A range of cognitive skills including decision-making, critical thinking, problem-identification and solution were also brought in to play. Finally various social skills were developed including sensitivity to others, collaboration and compromise. These were all applied within a context which had at its heart the need for

authentic target language use to fulfil clear and often spontaneous communicative needs rather than simple rote grammar practice.

In relation to the affective domain, students experienced taking more responsibility for their own learning. While not all of the students took well to this, most responded positively and their comments at seeing their posters displayed was indicative of a sense of achievement.

Conclusion

This paper has described a mini-research project which freshman conducted in to the lifestyle of students on campus to determine what practical advice they could give to make students' lifestyles healthier. The project was designed specifically to provide opportunities for students to apply the target language and content knowledge and skills covered to that point in the course, as well as to develop their cognitive and social skills.

By breaking the project down into stages, describing each in turn and how the related sub-tasks collectively elicited most, if not all of the various positive outcomes highlighted by Stoller [1], this paper has demonstrated that Project-Based Language Learning is a viable approach to foreign language teaching and learning.

Although Stoller [1] highlights the more commonly reported positive outcomes associated with PBLL, her analysis is by no means completely up-to-date or comprehensive. Since her paper was published in 2006, a growing body of evidence has continued to accrue in support of the outcomes she identified. Furthermore, her list of potential benefits is not an exhaustive one. A wider review of PBLL-related literature has revealed many more positive outcomes. These will be dealt with in a separate paper.

References

1. Stoller F: Establishing a theoretical foundation for Project-Based Learning in second and foreign language contexts; in Project-Based Second and Foreign Language Learning: Past, Present and Future, Information Age Publishing, USA (2006) pp. 19–40.
2. Allen LQ: Implementing a culture portfolio within a constructivism paradigm. Foreign Language Annals (2004) **37** (**2**), 232–239.
3. Carter G and Thomas H: "Dear Brown Eyes" —Experiential learning in a project-oriented approach. English Language Teaching Journal (1986) **40** (**2**), 196–204.
4. Coleman JA: Project-Based Learning, transferable skills, information technology and video. Language Learning Journal (1992) **5**, 35–37.
5. Ferragatti ML and Carminati E: Airport: An Italian version. Modern English Teacher (1984) **2** (**4**), 15–17.
6. Fried-Booth DL: Project work with advanced classes. ELT Journal (1982) **36** (**2**), 98–103.
7. Gardner D: Student-produced video documentary privates a real reason for using the target language. Language Learning Journal (1995) **12**, 54–56.
8. Gu P: Effects of project-based CALL on Chinese EFL learners. Asian Journal of English Language Teaching (2002) **12**, 195–210.
9. Gu P: Tech view: Leaving the bathtub to make waves. Essential Teacher (2004) **1** (**4**) 32–35.
10. Ho R: Project approach: Teaching 2nd Ed. ERIC Document Reproduction Service No. ED 478 224 (2003).
11. Lee I: Project work made easy in the English classroom. Canadian Modern Language Review (2002) **59**, 282–290.
12. Legutke M: Project Airport: Part 1. Modern English Teacher (1984) **11** (**4**), 10–14.
13. Legutke M: Project Airport: Part 2. Modern English Teacher (1985) **12** (**1**), 28–31.
14. Levine GS: Global simulation: A student-centred, task-based format for intermediate foreign language courses. Foreign Language Annals (2004) **37** (**1**), 26–36.
15. Padgett GS: An experiential approach: Field trips, book publication, video production. TESOL Journal (1994) **3** (**8**), 8–11.
16. Sheppard K and Stoller FL: Guidelines for the integration of student projects into ESP classrooms. English Language Forum (1995) **33** (**2**), 10–15.
17. Stoller F: Project work: A means to promote language and content. English Teaching Forum (1997) **35** (**4**), 2–9.
18. Helgesen M, Brown S and Wiltshier J: English Firsthand Success. Pearson Longman, Hong Kong (2010).
19. Gillham B: Developing a Questionnaire. 2nd Ed, Continuum, London (2007).
20. Canale M and Swain M: Theoretical Bases of Communicative Approaches to Second Language Teaching and Testing. Applied Linguistics (1980) **1**, 1–47.
21. Stern HH: The formal-functional distinction in language pedagogy: a conceptual clarification. Paper read at the 5th AILA Congress Montreal, (August 1978) Mimeo.

Accepted March 31, 2014.