

Analyzing Students' Reflection on PBL

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Abstract: The purpose of this study to analyze reflection papers that students participated in the program on environment education with Filipino students. The author conducted international collaborative project-based learning program for several years. He recognized that students could develop competencies through working on several activities in this program. The theme of the program is for students to understand environmental issues related to their lives. Japanese and Filipino students collaboratively participated in the program last February for nine days in Japan. They visited a marginalized village, a dam, a Japanese shrine, a garbage processing factory, and an elementary school to understand how environmental issues affect our lives. After the program, Japanese students wrote up reflection paper, and the author analyzed it qualitatively. Three elements can influence students learning: (1) interacting with local people enlightened Japanese students' perspectives; (2) working with Filipino students put them into cross-cultural context; (3) collaborating among Japanese students made them understood how to manage program activities effectively. Students do not have consciousness on environmental issues before the program. However, through the participation of the program, they realized importance of studying environment relation to their lives. Direct experiences, such as interviewing local people, visiting real sites, and presentation of their experiences, are substantial impact on students learning. The program has finished the first half, based on this result, the author tries to improve future activities.

Keywords: PBL, collaboration, reflection, experiential learning, cross-cultural

INTRODUCTION

“Active learning” and “global human resource” are buzzwords in Japanese higher education. Faculty members recognized importance of dialogic teaching, active participation, and deep learning that key elements of active learning. Most universities have shifted toward nurturing students as global human resources that can communicate with heterogeneous people to achieve a certain goal. However, one-way teaching and passive learning have not been eliminated at most university lessons.

There is, however, one exception. Unique feature of Japanese higher education is “Seminar class.” Seminar class is compulsory subject that every student must take for two years at Faculty of Informatics, Kansai University. Students are required to conduct research, write a paper, and present their analysis in the seminar class. Topics are based on faculty's specialty, such as computer science, sociology, economics, education, etc. The author's specialty is educational technology so that international collaborative educational program is designed to incorporate concepts of active learning and global human resources. The program includes both virtual communication through the Internet and direct experience of local site visits. Students learn

better if they have agency and work with heterogamous people. It is one-year program collaborating with Filipino students to learn environmental issues. The program started January 2018 by communicating Filipino students by Skype, and will end in November 2018. Therefore, this is a mid-term report how students reflect on their activities in the program.

PBL AS ACTIVE LEARNING

PBL is considered a kind of active learning to develop students' agency and active participation toward learning. PBL is acronym representing different concepts. In this paper, PBL stands for three concepts; “problem-based learning,” “place-based learning,” and “project-based learning.”

Problem-based learning

Problem-Based Learning (PBL) is an instructional method in which complex real-world problems are used to enhance student learning. In addition, PBL can promote the development of critical thinking skills, problem-solving abilities, and communication skills. It can also provide opportunities for working in groups, involving in planning how to solve, trying to solve in real situation, and presenting what is learned

(Duch et al, 2001). The problem must be rooted in real life context, ill-structured so that there is no one correct solution. The environmental problems are appropriate as topics in PBL. Students need to collect information from various places, and discuss with group.

Place-based learning

Place-Based Learning (PBL) refers that students, teachers, and adults in the community work together, and investigate the problems that occurred in the community related to the social, cultural, and natural environment (Sobel 2005). With PBL, students can learn more about the natural world in which they live.

The PBL framework shifts the educational system from an outdated industrial input-output linear model to the more dynamic interdisciplinary approach of the 21st century digital age based in action research (Fly 2010). In the PBL, the goal is to create opportunities for students to think collaboratively, collect, analyze, synthesize, and critique data, address community opportunities and concerns, and create knowledge and innovative ideas. Another major goal of PBL is the communication skills. In PBL students develop communication skills by reporting their research findings through publications and presentations to their peers and the community. PBL creates an environment that fosters genuine relationships not only between teachers and students, but also between community people and students (Stein *et al.* 2000).

Project-based learning

Project-based Learning (PBL) is an educational approach, designing learning activities and real tasks that offer challenges for students. Students themselves find out themes to work with, conduct activities to solve for a period of time. PBL is generally done by groups of students working together toward a common goal. In this case, students work on environmental project to work together with Filipino students. Through project activities, students develop skills including communication and presentation skills, organization and time management skills, research and inquiry skills, self-assessment and reflection skills, group participation and leadership skills, and critical thinking.

CASE STUDY: THE INTERNATIONAL COLLABORATIVE PROGRAM

The current program is extension of the collaborative program between Kansai University, Osaka, Japan and University of Hawaii. The previous program started in 2016 for two years, funded by Japan-United States Friendship commission. It is essential to get funding to start collaborative program between two universities. STEM education is

promoted by the US government to enhance science and technology. Theme of the program was environmental learning in which students learn environmental issues in both mountain and ocean areas. The environmental study is a part of STEM education (Kubota *et al.* 2016; Kubota *et al.* 2017). Japanese government promotes STEM education as well. Japan Science and Technology Agency (JST) provides “SAKUA Exchange program in Science” to enhance the exchange of youths in Asian countries and Japan. This international collaborative program is supported from JST.

The international collaborative program (ICP) started with De La Salle University in January 2018. Japanese students major in Informatics, while Filipino students major in early childhood education. Both students did not have interest in environmental issues at the beginning. The program is envisioned as an educational, cultural, and intellectual exchange, involving students from Japan and the Philippines, to learn about environmental issues. The program is a collaborative partnership between the Educational Leadership and Management Department of the College of Education, De La Salle University and Faculty of Informatics, Kansai University. It is supported by a year-long conversation among students and faculty through the use of collaborative online technology.

Both students introduced each other through the Skype meeting and upload self-introduction videos on Facebook. After introducing each other, Japanese students presented environmental issues in Japan. The skype meetings were held every Wednesday to get to know each other. Two faculty members and 8 students visited Japan in February. They stayed 9 days to explore environmental issues with Japanese students.

Both Japanese and Filipino participants stayed cottage and university seminar house during the program so that they communicated each other more deeply to understand. In the field, Japanese students had to explain about the place they visited, and to translate interviews into English on site. The program lasts until November 2018. The Japanese students will visit the Philippines to conduct research at dump site, organic farm, and other environmental related areas. At the end of the program, the students will conduct workshop on environmental issues to elementary pupils.

In addition, students visited and interviewed elderly, local villagers about how changes in the village affected their lifestyles. They learned about traditional fishing practices and the impact of natural disasters on the area. At night, students prepared local Japanese cuisine outdoors, using firewood and traditional cooking practices.

Through experiencing the previous programs with Hawaii students, the program follows four principles for effective implementation.

(1) Weekly online meetings between Japanese and Filipino students

Considering one-hour time difference between Japan and the Philippines and different class schedules, the Skype meeting time was fixed at 6PM Wednesday. The Skype conferences are held every week so that both groups became accustomed to participating in video meetings. Videoconference guidelines were provided to students to help them prepare for the Skype conferences and allow two-way discussions to occur on various topics, using PowerPoint and other visual aids.

School calendars are also different between two countries. Filipino students have summer break from April and May, the Skype meeting was canceled during these months. The Skype meeting started in June again, and some more Filipino students joined.

(2) English communication classes for Japanese students

Japanese students study English for six years in junior high and high school. However, the focus of their English classes is to prepare for university examinations. Therefore, the emphasis is on reading, writing and grammar, with minimal opportunity to listen and speak English. In addition, students are reluctant to make mistakes when speaking English in front of their peers. However, to work collaboratively on this project, Japanese students had to improve their English communication skills. To reach this goal, an English oral communication class was conducted prior to the joint field visits. Consequently, the Japanese students were less hesitant and more willing to engage in Filipino students in English conversation.

(3) Supported by senior students

In the third-year of the project, two senior and three graduate students, with prior experience in the program, are supporting the junior students' activities. However, coaching by the senior students is difficult task. If the senior students provide too much advice, the juniors would lose ownership. If the seniors let the juniors act freely, the program could fail. The senior students expressed their concern about the extent of their roles when assisting the juniors during the program. This is a good experiential learning opportunity for senior students to acquire social skills such as advising, mentoring and providing leadership.

(4) Various instructional applications and devices for supporting collaborative activities

Information and communication technologies (ICTs) support the program (Wang *et al.* 2001). The

students used technology applications, such as Skype, Facebook, and Google Documents. Each application has its positive and negative attributes. The students needed to learn which applications worked best in which context, and to make appropriate choices. In addition, through preparation and fieldwork, students acquired effective communication skills and document management practices.

METHODS

The purpose of this research is to analyze the reflection papers that students participated in the program on environment education with Filipino students. The Filipino students visited Japan to study environmental issues to conduct fieldwork with Japanese students in mountain and garbage processing factory.

The program on collaborative learning was 9 days. Both Japanese and Filipino students stayed together at the university seminar houses and mountain cottages to work collaboratively in the field. They interviewed local people how the people dealt with environmental issues and visit some places related to environmental issues. At the end of the program, the Japanese students wrote reflection. The author collected reflection as qualitative data to analyze. Qualitative research method was applied to identify what students could learn through experience of the program.

RESULTS AND DISCUSSION

After the program conducted in Japan, Japanese students wrote up reflection paper, and the author analyzed it qualitatively. Three elements can influence students learning: (1) interacting with local people enlightened Japanese students' perspectives; (2) working with Filipino students put them into cross-cultural context; (3) collaborating among Japanese students made them understood how to manage program activities effectively.

(1) Interacting with local people enlightened Japanese students' perspectives

Since the students thought they had not learned environmental issues at school, they reflected that field visit was enlightened activities. Before meeting local people, the students took for granted that the local people hated urban people because the urban people always exploited from the local. The urban people got foods and electricity from the local area, while nothing goes from urban to local. The urban people just consume electricity, eat foods, and use logs. When the students interviewed the local people, they thought that the local people hated the urban people. Therefore, the students were afraid of meeting the local people at first. However, the students were

deeply welcomed by the local people when they visit houses.

The students realized how much the mountain area had been deteriorated last 50 years by interviewing the local people. The surrounding was beautiful by the students' view, but the students understood how much the nature changed to worse after developing area, such as dam construction. The students became more sensitive about environment issues, and changed their behaviors, such as sorting out garbage.

(2) Working with Filipino students put the Japanese students into cross-cultural context;

The Japanese students were shy to speak English so that they were reluctant to talk to the Filipino students at the beginning. On the other hand, since it was the first time that the Filipino students visited Japan, they got bewildered in Japanese environment. However, since both students stayed together for 9 days, they have gradually communicated each other in both verbally and non-verbally.

Japanese students reflected on the process how the Filipino students got used to Japanese way. When the Japanese students fetched the Filipino students at the airport, they felt difficulty to lead Filipino group. The Filipino students got used to follow Japanese ways. The Japanese students learned importance of speaking English and realized how much interesting to communicate by English. Both students developed trust through communicating each other.

(3) Collaborating among Japanese students made them understood how to manage program activities effectively.

It is the first experience that students stay together for nine days. They discovered new aspects of other students. The Japanese students had responsibility to manage the program smoothly. If the students did passively participate in the program, it would not work out well. They noticed their attitudes that they sometimes thought that someone would do the work since it was not his work. However, they gradually understand this kind of attitude got the program worse. Through the activities, they regretted that they should have changed this kind of attitudes. They realized they have to work together collaboratively to make the whole program success.

They have reflection session every day at the end of the activities. Each student could reflect on himself at the beginning. However, they gradually became conscious on the whole process of the program, and made great effort toward the program. They understood that they should reflect on their activities from panoramic position, and find out how they can make all participants actively involved in the program.

The students do not have consciousness on environmental issues before the program. However, through the participation of the program, they realized importance of studying environment relation to their lives. Direct experiences, such as interviewing local people, visiting real sites, and presentation of their experiences, are substantial impacts on students learning. The program has finished the first half, based on this result, the author tries to improve future activities.

FUTURE DIRECTION

This is a mid-term presentation of 2018 international collaborative program. After IcoME2018, the Japanese students will visit the Philippines at the end of August to conduct the environmental program together with De La Salle University students. Through two experiences of the fieldwork in both countries, both students will be expected to widen their skills and knowledge. The international collaborative program such as this program will be expected to develop more and more. It is important to accumulate experiences to improve the programs.

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