Learners' Perception towards Project-Based Learning in Encouraging English Skills Performance and 21st Century Skills

Nualpen Puangpunsi

puangpunsi_n@silpakorn.edu
Faculty of Animal Sciences and Agricultural Technology Silpakorn University

---

Abstract

Meaningful learning should bring learners to meet their entire goals—both an achievement in academic skills and everyday life skills. This current study focused on the implementation of project-based learning (PBL) in an EFL classroom for young adult learners at a university level. The study aimed at the development of students' performance in English skills and enhancement of 21st century skills through working processes of project work. Feedback from participants on the adoption of PBL in English learning was revealed in the study. A total of 104 participants, working in small groups, developed a piece of project work for 15 weeks. Data obtained from a questionnaire pointed out the positive feedback on the integration of project-based learning in English class activity. The study also found that PBL played the role in the enhancement of English skills improvement and the 21st century skills acquisition. Majority of participants mentioned that project-based activity engaged them to develop collaboration and teamwork skills, flexibility and adaptability skills and increased the better level of responsibility in learning. Furthermore, the students stated that they were satisfied with the integration of PBL in English learning class. Overall, an integration of PBL in a classroom allows learners to accomplish meaningful goals and overcome some difficulties in learning.

Keywords: Project-based learning, 21st century skills, English skills development, Gen Z learners

Introduction

Today's world has changed continuously in every dimension of living which affects directly the global population who needs to adjust themselves and to accommodate the living styles in this 21st century. The fast-moving world of technology and information has made an extreme alteration to society. To meet the needs of living styles today, Kozinsky (2014) stated

that citizens of the 21st century commonly demand the following skills: critical thinking, collaboration, digital literacies, leadership, creativity, and imagination to accompany the ways of living in the globalization era. Consequently, it is important to make significant modifications to serve the needs of people in parallel with the rapid advancement of digital technologies.

In terms of education, the Gen Z population which is well-known as a master of digital technologies is becoming the largest group of learners. When the fast-moving forward of technology has strongly influenced their ways of living, the smartphone has become a fundamental tool for a variety of daily activities; for instance, they use a smartphone as media to explore the world, research for information, enjoy entertainment, and to keep connection. Palacios (2019) stated the Gen Z learners have a deep affinity with technology. As can be seen, most learners today cannot stand learning in a conventional classroom where teachers play a role as the center of the class. Those Gen Z learners refuse to be only passive learners in a classroom. On the other hand, they prefer taking part in a classroom and participating in the learning process, and not just sitting and listening to what they have heard. According to the study of Barnes and Noble College (2015), it was reported that 51% of Gen Z students indicated that they learned best by doing and enjoyed the challenge of being part of a classroom. In addition, 80% said they preferred studying with friends. This means that it is more challenging for learners in the digital age to access various sources of information, then take trials and errors and seek for the right answer by themselves. In the meantime, they value face-to-face interaction and collaboration in learning environment.

Owing to the infinity of learning in the 21st century, learners might start learning from their most interesting topic. Then they themselves search for information and approve it. Therefore, it is important for the teachers of Gen Z to realize that the learning styles of the 21st century learners are totally different from those in the former generations. Beers (2011) pointed out that the goals of teaching in the 21st century are to support students to learn how to think, inquire, question, solve problem and apply these skills in new situations with new information. An up-to-date conceptual depth in teaching, meaningful contextual scope and challenged teaching methodology are required from those teachers in order to construct the classroom that responds to the need and nature of learners, then brings learners to accomplish the entire goal of learning. Anazifa and Djukri (2017) stated that the implementing of project-based learning and problem-based learning models in a classroom can develop the 21st century skills to students. It can be noted that the important purpose of teaching and learning activity

for the Gen Z learners is to encourage them to be skillful citizens who are able to earn their living in this digital age and promote the capacity for lifelong learning.

Since project-based learning is well-known as a practical approach that supports a learning-by-doing strategy, the author agreed that it would foster a better learning environment and create a positive attitude towards English learning for the students. For this reason, this current study put the emphasis on an introduction of project-based learning activity to students who were studying English as a required course at a university in academic year 2019. The study aimed to investigate how the utilization of project-based learning activities promote the 21st century skills and a better performance in English learning for those students. Another purpose of the current study was to reveal the students' perception towards the use of project-based activities in an English learning class. A 15-week study was conducted to ascertain the answers to following research questions: 1) What skills of English and living in the 21st century did participants perceive that they have developed through the use of project work in an English class? 2) How were participants satisfied with the implementation of project work in the English class? and 3) What benefits and difficulties did participants experience while working on the projects?

Findings will serve as empirical evidence for teachers in designing an appropriate teaching activity for EFL learners in order to enable them to achieve the practical goals in language learning and generate the flexible living lifestyles in this changing environment.

Review of Literature

Project–Based Learning (PBL)

PBL is an active student-centered form of instruction which is characterized by a student's autonomy, constructive investigation, goal-setting, collaboration, communication and reflection within real-world practices by presenting learners with problems or a certain situation and motivating learners to identify and carry out the solutions. It provides opportunities for students to carry out learning activities by working on collaborative projects (Basilotta Gomez-Pablos et al., 2017; Choi, Lee & Kim, 2019; Kokotsaki et al., 2016). Besides, project work encourages students to gather more in-dept knowledge and sharpen their skills in research. Moreover, students can develop creativity by doing projects and solving problems (Anazifa & Djukri, 2017; Kean & Kwe, 2014). Fundamentally, PBL puts an emphasis on having the students experience real-life situations or current issues. Then,

students acquire their knowledge by developing questions about the situations and issues they have confronted and then research for the best answer under the teacher's supervision. Bender (2012) described the significant steps of implementing PBL in a classroom as: 1) introduction and team planning; 2) initial research phase in terms of gathering information; 3) project creation and development and initial evaluation of presentation; 4) second research phase; 5) final presentation development; and 6) publication of products or artifacts. A teacher would introduce these steps to students and allow them to work on projects, together with teacher's facilitation.

PBL in a Classroom

A number of studies have shown the positive effectiveness of an adoption of PBL in a classroom. Boot (1986) mentioned in his study that PBL actually covers three stages: beginning in the classroom, moving out into the real world, and returning back to the classroom. In a PBL classroom, students have an opportunity to achieve both academic content and life skills through the project process, which usually starts with identifying questions. Then they are driven to study with their team using a variety of tasks in order to find out the most effective solutions to address those questions. As Essien (2018) concluded the importance of PBL in her study, PBL connects academic situations to the real world by offering a stimulation of certain problems to the classroom.

In a PBL classroom, real-world topics are used to stimulate students to experience authentic tasks with the implementation of integrated skills and real-life information. Since PBL allows students to work in groups, they will be able to experience the benefits of engaging in problem solving and team building situations (Fujioka, 2011; Stoller, 1997). As PBL puts the emphasis on group learning, group collaboration and taking on social responsibility are practiced to bring about the goal accomplishment. Moreover, it also improves their problem-solving skills, critical and creative skills, communication skills, ability to adapt to changes, and self-evaluation (Khoiri et al., 2013).

Similarly, the implementation of PBL in a language classroom promotes a meaningful learning process for the learners. Students do not perceive only the academic content or theory from a textbook, but they also experience authentic communication skills in real-life situations. For instance, students have an opportunity to practice communication skills, group participation, leadership skills, time management and presentation skills (Stivers, 2010). PBL does not only enhance students learning quality in terms of enthusiasm, confidence, creativity,

self-directed and collaborative learning ability, but it also encourages motivation and satisfaction in teaching for teachers (Astawa et al., 2017). The utilization of project work in class helps to reinforce social relationships among team members and promotes active involvement of cooperation among learners. Learners are more active in the class with PBL (Coleman, 1992; Kimsesiz et al., 2017; Pinter & Cisar, 2018). In addition, an implementation of a project work enables learners to improve their digital literacy skills, particularly the skills of evaluating and using an appropriate content in a certain field. That is to say, project-based learning is highly compatible with the development of digital literacy among learners (Nani & Pusey, 2020).

In addition, a PBL classroom allows students to complete authentic activities by participating in meaningful activities and improving language skills. It develops students' confidence, independence and motivates the engagement and enjoyment in doing project work among students (Fried-Boot, 2002; Lam, 2011; Stoller, 2006). Furthermore, students with a project-based task have an opportunity to get new experiences and entrepreneurship work throughout the learning process and enables them to achieve vital, cognitive and self-control skills, forming attitudes in learning and the ability to use technology in learning. It also allows them to build up motivation and autonomy, expand intellectual development, and improve a variety of skills and knowledge (Aniroh, 2018; Hamurcu, 2003; Shih & Tsai, 2017).

In accordance with Aksela and Haatainen (2019), it was revealed that PBL is very useful for teachers. It promotes students' or teachers' learning and motivation, collaboration and a sense of community at the school level, student-centered learning and brings versatility for teachers' instruction in the classroom. To sum up, while students are working on their project in a PBL classroom, teachers act as the coaches who facilitate and monitor their students. They teach the students how to question, develop their hypotheses and find out the best strategy to the specific problem. Students mostly acquire the knowledge by themselves through the working process. It is not only academic achievement, as students also develop their interpersonal skills and other social skills until the end of project work.

The Role of PBL in English Skills Development

The EFL classroom is different from other classrooms. It aims to enhance the ability in using language as a tool in the real-world communication. An achievement in the learning is not an acquisition of certain knowledge, but the improvement of language skills, communication skills and life skills is mainly needed.

As PBL puts emphasis on authentic activities, it provides opportunity for learners to experience the authentic situations in learning environment. In a language classroom, PBL encourages students to develop their communication skills via the natural integration of language skills and it also promotes a higher level of thinking than just learning vocabulary and structure (Fragoulis, 2009; Simpson, 2011). Kavlu (2017) stated in her study that PBL can help students improve English skills in the real-world context and make the EFL classroom more colorful and attractive. It also involves language learning with technology and allows learners to be creative and up to date (Gonzalez et al., 2017). Combining project-based learning with English learning enables students to connect language skills to their real-life interests and prepares students for real-world events (Foss et al., 2007; Lam, 2011).

It can be concluded that PBL provides a number of benefits to the EFL learners. However, careful management and explicit goals of learning are crucial for the classroom. Teachers should be well equipped with needed skills and the ability to support their students throughout the learning process.

The 21st Century Skills

Living lifestyles in the 21st century have been changed dramatically since the rapid advancement of technology which affects global citizens' ways of living. To illustrate, the advancement of the Internet and smartphone allows us to access a variety of sources worldwide. With only one click on a search engine, a great diversity of information is listed and welcomed for researchers to experience the connected information. The 21st century is a period of transformation in which technology is used as the main tool for people to accomplish fundamental century skills—learning and thinking skills, technology literacy and leadership skills (Castells, 2010; McCoog, 2008).

According to Trilling and Fadel (2012), the three main categories of 21st century skills comprise learning and innovation skills, digital literacy skills, and life and career skills. In addition, its framework focuses on the 7Cs, which include critical thinking, creativity and innovation, collaboration, cross cultural understanding, communication, computing technology and career learning. In terms of education, the 4Cs—critical thinking, communication, collaboration and creativity—are specifically considered as the fundamental skills for learners of the 21st century (National Education Association, 2014), together with the support from technology which serves as an essential tool to shape and enhance the learning environment in this period of time (Boholano, 2017). In addition, the inter-

disciplinary skills commonly considered as essential for the 21st century are problem-solving, ICT operations and concepts, communication, collaboration and information literacies (Suto & Eccles, 2014).

It can be concluded that three main skills which are accepted as being fundamental skills for living as 21st century citizens are 1) Learning and innovation skills, including abilities in communication and thinking, 2) Digital literacies with the emphasis on the mastering of information technology (IT) and ethically appropriate management of information, and 3) Life and career skills, together with the ability to live and work as global citizens (Cretu, 2017; Dede, 2009; Lamb et al., 2017; McCoog, 2008; Reynold et al., 2017).
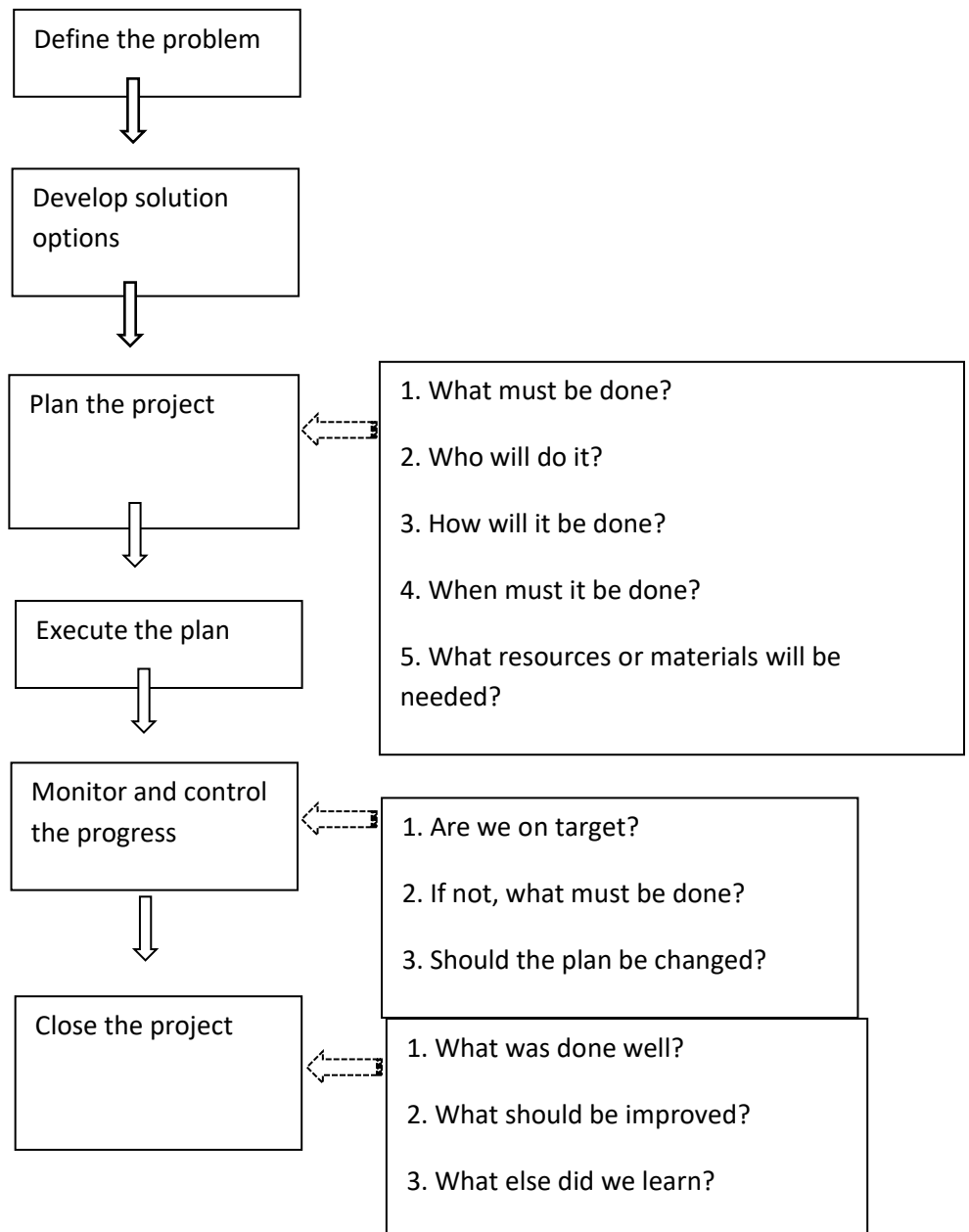
To achieve the goal of living in the era of global change, it is necessary for each individual to integrate the aforementioned 21st century skills and demonstrate how they work vitally in real-life situations. Fortunately, the young population of this century is masters of technology; hence, they are talented in researching and learning the related information from various sources. Otherwise, the collaboration between academic skills and life skills is still essential.

Materials and Methods

Theoretical Framework of PBL

As PBL puts the emphasis on a student-centered approach, it is believed that students are able to acquire the true meaning of knowledge when they experience real-world situations and work on those challenges. Stanley (2016) stated six key steps of implementing PBL in a classroom, which include defining the problem, developing the solutions, planning the project, executing the plan, monitoring and controlling the project progress and closing the project. With an appropriate duration of project work, it encourages students to earn a variety of skills and knowledge competence.

Figure 1

Steps in Managing a Project

```
┌─────────────────────┐
│  Define the problem │
└─────────────────────┘
          ⇓
┌─────────────────────┐
│  Develop solution   │
│  options            │
└─────────────────────┘
          ⇓
┌─────────────────────┐        ┌──────────────────────────────────┐
│  Plan the project   │ ⇐----- │  1. What must be done?           │
└─────────────────────┘        │  2. Who will do it?              │
          ⇓                    │  3. How will it be done?         │
┌─────────────────────┐        │  4. When must it be done?        │
│  Execute the plan   │        │  5. What resources or materials  │
└─────────────────────┘        │     will be needed?              │
          ⇓                    └──────────────────────────────────┘
┌─────────────────────┐        ┌──────────────────────────────────┐
│  Monitor and control│ ⇐----- │  1. Are we on target?            │
│  the progress       │        │  2. If not, what must be done?   │
└─────────────────────┘        │  3. Should the plan be changed?  │
          ⇓                    └──────────────────────────────────┘
┌─────────────────────┐        ┌──────────────────────────────────┐
│  Close the project  │ ⇐----- │  1. What was done well?          │
│                     │        │  2. What should be improved?     │
└─────────────────────┘        │  3. What else did we learn?      │
                               └──────────────────────────────────┘
```

The present study drew upon a PBL theoretical framework as it allows students to experience an authentic learning environment. The study covered 15 weeks of the second semester in academic year 2019. At the beginning of the study, the concept of PBL and goals of the activity were introduced to the participants. Then, they were assigned to work in a group of four to five. Meanwhile, each member of a group was requested to clarify his/her job

description in group work. The main goal of this PBL implementation was to provide students with an opportunity to develop English skills and promote the 21st century skills through project work. While students played the significant role in carrying out the project work, the participating teacher encouraged them to focus on the activity and provided feedback on project development. The schedule for the current project-based learning activity was planned and used as the guideline for the teacher and students in the study.

Participants

The 104 participants (87 females and 17 males) consisted of university students who enrolled in an English course as the required course for a degree. Basically, participants were majoring in the field of agricultural science; therefore, they had fundamental background knowledge in science and agriculture. Consequently, the course integrated reading comprehension skills and speaking skills with their knowledge in agricultural science. According to the university placement test, the participants' proficiency in English skills varied from the beginners level to the B1 level, based upon the standard of CEFR. Before the process of project started, PBL framework and its aims were clarified to participants whose feedback and suggestion were gathered to describe pros and cons of using PBL in a language learning.

Research Design

This study employed both a qualitative and quantitative research design using a survey research method to determine the students' perceptions towards the use of PBL in promoting English language learning and the 21st century skills in the EFL classroom.

Instruments

A questionnaire was developed along with the lesson's objectives, aiming to gather information about the students' feedback on the use of PBL. The first part of the questionnaire, consisting of two questions with twelve checkboxes, was used to inquire about participants' perception towards the role of PBL in the development of English skills and the 21st century skills. Secondly, twelve questions on the Likert rating scale, named as 'very unsatisfied' to 'very satisfied', were used to document participants' satisfaction level on the implementation of project work in the learning activity. Thirdly, two open-ended questions were designed for students to provide their ideas about the benefits and difficulties experienced from the

integration of project work in the English class. It is noted that the questionnaire was anonymously introduced to the participants at the end of project work. Semi-structured interview was also used to investigate further opinions about the study.

Data Analysis

Data gathered from the survey questionnaires were carried out by MS Excel 2010 version for descriptive statistical analysis (mean scores, standard deviation and percentages). The respondents' opinions on the advantages and obstacles taken from the use of project work in English learning was classified into different categories.

Information on students' satisfaction level of project-based activity implementation was interpreted using the following class interval, which was calculated using the following statistical formula.

$$\frac{(upper\ bound - lower\ bound)}{number\ of\ class} = \frac{(5-1)}{5} = 0.8$$

As a result, the meaning of received satisfaction levels included;

4.21- 5.00 =   Students were very satisfied with the implementation of PBL.

3.41 -4.20 =   Students were satisfied with the implementation of PBL.

2.61- 3.40   = Students were neither satisfied nor unsatisfied.

1.81- 2.60   = Students were unsatisfied with the implementation of PBL.

1.00 -1.80   = Students were very unsatisfied with the implementation of PBL.

Findings and Discussion

Findings from the questionnaire were presented and discussed in order to answer the research questions, as follows:

Table 1

Students' Perception of English Skills Development through PBL Activity

English skills	No. of students (N = 104)	Percentage
Speaking skills	83	79.80
Report writing	24	23.08
Critical reading	18	17.31

Grammatical structure	17	16.35
Reading and listening comprehension	12	11.54
Vocabulary	7	6.73

To answer the research question: what English skills did participants assess they developed well through the project work?, as far as the development in English skills is concerned in the current study, the findings showed the major group of participants (79.80%) agreed that they could develop better in speaking skills, including a variety of activities such as giving an oral presentation, expressing their ideas and giving information from project work. This means that the development in presentation skills and the ability to use language in communication have been improved through PBL activity. The result was significantly important for EFL teachers because it is not common for students who have low confidence in English speaking and shy to use English in their communication. Another language skill that students felt they improved well in was the ability in writing. That is to say, they felt more confident in the ability to use appropriate words and form a meaningful paragraph with accuracy of grammatical structure. At the bottom end, vocabulary was found to have the least improvement, as it was a part of every skill that students needed.

Similarly, Kettanum (2015) discovered that the 21 participants in his study felt more confident about their ability in English as they progressed in the project work, and they could communicate in English better. Artini et al. (2018) pointed out that project-based learning was influential in a significant improvement in the ability to speak and to write in English language classes.

In addition, reading skills (critical reading and reading comprehension) also received positive feedback with respect to its improvement. Students agreed that they had to read a lot, both in English and in Thai, in order to gather related information and select which information they needed for the project. The main source for students while they were searching for information was open websites on the Internet, and some sources included written books. It can be concluded that PBL showed the alternative capacity to enhance better English skills among learners; however, it depends on the project's purpose which is clearly set in the beginning.

Table 2

Students' Perception of the 21st Century Skills Promotion through PBL Activity

21st century skills	No. of students (N = 104)	Percentage
Collaboration and teamwork skills	81	77.8
Flexibility and adaptability	60	57.7
Problem-solving skills	59	56.7
Critical thinking skills	57	54.8
Media and technology literacies	57	54.8
Information literacy	56	53.8
Communication skills	56	53.8

To answer research question: what 21st century skills did participants acquire from the adoption of PBL?, according to the survey, 77.8% of the respondents (N = 81) agreed that the adoption of a project-based learning activity enabled them to develop better skills in collaboration and teamworking. As group work was required in running the project work, it allowed students to work and share responsibilities within the group throughout the period of project work. This is consistent with Essien (2018), who found that PBL enables students to improve collaboration skills when they participated in a group session. They actively expressed themselves to be a part of group work, even though some of them had a low level in English skills. When students worked together in a group, they were approached by other members to take action with the assigned job. Similarly, Natividad and Batang (2018) pointed out that the young adult learners can learn a foreign language through the use of spoken language, working in group, using hands-on materials and learning through visual materials.

The findings also indicated that most respondents agreed that they could gain more flexibility and adaptability (57.7%), problem-solving skills (56.7%), media and technology literacies (54.8%), critical thinking skills (54.8%), information literacies (53.8%), and communication skills (53.8%), respectively, during the project work. The study of Akindele (2012) stated that although the students admitted there were conflicts while working as a group, they were encouraged to become more creative, gain better self-esteem and face and solve difficult problems during the project work. Therefore, PBL provides an opportunity to

learners to learn the ways to be a member of society and model the basic skills for future living, which is one of the valuable goals of education.

Table 3

Students' Perception of PBL Implementation

No.	Perception	S.D.	Mean score	Satisfactory level
1	Our team members have learned and shared a lot of lessons from the project work.	0.75	4.47	very satisfied
2	Our team is able to solve problems while we are working on project.	0.84	4.39	very satisfied
3	The team showed high potential through project work.	0.90	4.39	very satisfied
4	I have gained interpersonal skills from this project work.	0.75	4.34	very satisfied
5	I could perform excellent teamworking skills.	0.90	4.33	very satisfied
6	Learning by doing this project challenged me to develop my English skills.	0.70	4.27	very satisfied
7	Project work activates my enthusiasm for participating class activities.	0.77	4.25	very satisfied
8	I have developed my information searching skills.	0.80	4.23	very satisfied
9	Project work promotes a positive learning environment.	0.78	4.14	satisfied
10	I felt more confident in my English performance.	0.78	4.12	satisfied
11	I increased my responsibility and confidence level by working on this project.	0.73	4.09	satisfied
12	We have accomplished the project as we planned in the beginning.	0.78	4.02	satisfied

To answer the question: how were participants satisfied with the implementation of project work in English class?, the study showed a high level of satisfaction among

respondents which can be inferred that the project activity encouraged positive perception in the promotion of 21ˢᵗ century skills and encouraged a positive attitude toward English language learning. The highest score of satisfaction was the opportunity to work in group which enabled learners to learn from team members (mean = 4.47) and find the best alternative solution in order to achieve the goal project work (mean = 4.39). In addition, in an EFL classroom, project work challenged learners to develop their English skills (mean = 4.27) and enhanced better confidence in English (mean = 4.12). Overall, a number of respondents put a stronger emphasis on its potential benefits of building an alternative relationship in social skills, as well as the ability in long life learning. Similarly, Stein (1995) pointed out that project-based activity incorporates teamwork collaboration, problem solving, negotiating and other interpersonal skills, which are important in future living.

In addition, Kavlu (2017) described teachers' feedback to the use of PBL as being that is not only to enhance students' language skills, but also their social communicative skills. This is consistent with Macadangdang (2019), who stated that students' proficiency in problem solving skills increased when students acquired better knowledge and understanding in English and math. Moreover, the improvement of reading comprehension skills was influenced by the proficiency in the problem-solving abilities of students. One of the interesting findings is the potential for project work to increase better responsibility and confidence in learning behaviors, together with the ability to cope with difficulties that occurred in the working process. Teachers, meanwhile, acted as the project facilitators to support and accommodate the students throughout the project working.

Additionally, two open-ended questions were anonymously introduced to students in order to reveal both the benefits and obstacles that they experienced from the project work. Since this study needed to acquire exact feedback from participants, both the questions and answers were presented in Thai language.

Question 1: *What is/are the benefit(s) you obtained from working on the project work?*

The comments reflected a number of answers that clarified positive feedback to an opportunity to work in a team. For instance; "*I learned to be more flexible while I was working with my teammate.", "I have increased better responsibility to the assigned job and volunteered to help my team.", "Our group had a great plan and we could produce the perfect job.", "I feel more confident in idea sharing and public speaking.", "I have learned how to deal with uncomfortable situations.", "My friends helped me a lot in improving my English*

and they made me more confident". In addition, technology was mentioned as a necessary tool in this activity. For example, "*I used a variety of technology to help me search for information.", "I learned practical knowledge while I was looking for information.",* and interestingly, *"I gained more beneficial ideas in agriculture, both from my group and my classmates that I could adapt to my farm."* Development in English skills was one of the significant benefits which participants were impressed with, e.g., *"I gained more confidence in my English speaking.", "I have improved my English, especially reading and speaking skills.", "I have learned a lot of vocabulary, especially in terms of agriculture." "PBL reduces the anxiety in oral presentations because I had to practice it several times."*

Question 2: *What is/are the difficulty(ies) you experienced in this project work?*

Some obstacles in doing project work were also mentioned in this study. Most of the participants worried about the accuracy of English in their work; *"I'm not good in English speaking, so it was difficult to deliver the messages to audiences.", "I was usually nervous to present the project because I'm not confident in my English.", "I couldn't think about words in English.", "It was difficult to build the sentences in the English language.*" Furthermore, time management was raised as one of the problems in group working; *"It was difficult to find a schedule that we could work together.", "The group members didn't have enough time to meet and do the project.", "I couldn't finish the project on time."* Other comments were about relationships with the team members and insufficient information about the project.

According to the participants' feedback, it revealed that PBL played a significant role in enhancing both English skills and the 21st century skills, whereas they still confronted some problems in the project work. PBL enhanced more a positive perception of English improvement and allowed them to solve the problems that had occurred. Yang (2016) claimed that PBL had positive effects on non-English major students' speaking ability and it also showed their development at technology skills. Similarly, Febriana (2017) concluded that the application of PBL in a class can positively improve the social behaviors and learning outcomes of students on the subject of food poisoning. It can also be pointed out that an introduction of PBL to the English class allows learners to experience authentic situations of learning for which they need to integrate a variety of skills, knowledge and language skills, thus participants had a positive perception of the current approach in learning procedures.

Conclusion and Recommendations

Project Based Learning has been highlighted as an essential pedagogic methodology in preparing learners for the future. The positive perception, such as creating a cooperative learning environment, enhancing better confidence and broadening learning opportunities, motivates students to participate in learning activities and meet the goals of learning. Particularly in a language classroom, the integration of project-based activities provides an opportunity for students to experience the authentic use of language skills in virtual real-life situations and build up better confidence in using language for communication purposes. According to the findings of this study, PBL is strongly recommended to a classroom teacher to implement for classroom activities. This would promote a friendly learning environment for the classroom and increase the confidence among learners, as they have an opportunity to accomplish the learning process by themselves.

In terms of the 21st century skills, PBL prepares students for future living with fundamental life and social skills. These will enable them to analyse the optimum conditions for their living. An implementation of PBL in the classroom stimulates productive learning behaviors; for instance, learners are responsible to create, manage, plan, and search for answers in order to bring their project work to meet its goals. Likewise, learners acquire receptive behaviors from the experience in working as part of a team and dealing with obstacles during the working processes. It is believed that miscellaneous life skills are practiced automatically through the working project process, and this certain achievement would be a useful guideline to support lifelong learning in the future.

To sum up, PBL is named as a meaningful pedagogy for the classroom environment. It also facilitates the learning process as learners use their knowledge within context of a task and apply the optimum life skills to the work. It stimulates them to experience a real-life situation and learn how to cope with it.

Limitations

In the present study, only students' perception and feedback on using project-based learning activity in learning procedures were observed. However, the achievement in English learning has not been studied yet. For further study, both the achievement in English skills and students' perception should be revealed in order to examine how PBL develops the potential in English skills, together with encouraging a positive perception among students.

Acknowledgements

References

Akindele, D. O. (2012). Enhancing Teamwork and Communication Skills among First Year Students at the University of Botswana. *TESOL Journal, 6*, 2-15.

Aksela, M. & Haatainen, O. (2019). *Project-based Learning (PBL) in Practice: Active teachers' views of its advantages and challenges*. Retrieved from https://www.researchgate.net/publication/ 333868087_project-based_learners_ pbl_in_ practise_ active_teachers'_ views_of_its'_ advantages_and_challenges

Anazifa, R. D. & Djukri. (2017). Project-Based Learning and Problem-Based Learning: Are they effective to improve student's thinking skills? *Jurnal Pendidikan IPA Indonesia*, *6*(2), 346-355

Aniroh, K. (2018). Cultural Traits in Language Teaching: A Review of English Language Teachers and Entrepreneurs. *TESOL International Journal, 13(4)*, 9-25.

Artini, L. P., Ratminingsih, N. M., & Padmadewi, N. N. (2018). Project Based Learning in EFL Classes: Material development and impact of implementation. *Dutch Journal of Applied Linguistics*, *7*(1), 26-44. https://doi.org/10.1075/dujai.17014.art

Astawa, N. L. N. S. P., Artini, L. P., & Nitiasih, P. K. (2017). Project-based Learning Activities and EFL Students' Productive Skills in English. *Journal of Language Teaching and Research*, *8*, 1147-1155. Retrieved from http://www.academypublication.com/ojs/index.php/jltr/article/view/jltr08061147115 5

Basilotta Gomez-Pablos, V., Martin del Pozo, M., & Garcia-Valcarcel, A. (2017). Project-Based Learning (PBL) through the Incorporation of Digital Technologies: An Evaluation Based on the Experience of Serving Teachers. *Computer in Human Behavior*, 68, 501-512. https:// doi.org/10.1016/j.chb.2016.11056

Barnes & Noble College. (2015). Getting to Know GEN Z: *Exploring middle and high schoolers' expectation for higher education*. Retrieved from https://www.bncollege.

com /wp-content/uploads/2018/09/Gen-Z-Report.pdf

Beers, S. (2011). *Teaching 21st Century Skills: An ASCD Action tool.* USA: ASCD publication

Bender, W. N. (2012). *Project-Based Learning: Differentiating Instruction for the 21st Century*. California: Corwin.

Boholano, H. (2017). Smart Social networking: 21st Century teaching and learning skills. *Research in Pedagogy*, *7*(1), 21-29. DOI: https//doi.org/10.17810/2015.45

Castells, M. (2010). The Rise of Network Society. *The Information Age: Economy, society, and culture*. (2nd ed.). Oxford, UK: Wiley-Blackwell.

Choi, J., Lee, J. H., & Kim, B. (2019). How does Learner-Centered Education Affect Teacher Self-Efficacy? The Case of Project-Based Learning in Korea. *Teaching and Teacher Education*, *85*, 45-57.

Coleman, J. A. (1992). Project-based Learning, Transferable Skills, Information Technology and Video. *Language Learning Journal*, *5*, 35-37.

Cretu, D. (2017). Fostering 21st century skills for future teachers. *The European Proceedings of Social & Behavioral Sciences*, 672-681. DOI: https//doi.org/10.15405/epsbs.2017. 05.02.82

Dede, C. (2009). *Comparing Frameworks for 21st Century Skills*. Retrieved 15 October, 2019 from http://sttechnology.pbworks.com/f/Dede_(2010)_Comparing%20 Frameworks% 20for%2021st%20Century%20Skills.pdf

Essien, A. M. (2018). The Effect of Project-Based Learning on Students' English Language Ability. *The 2018 International Academic Research Conference in Vienna*. 438-443.

Febriana, R. (2017). The Effectiveness of Project Based Learning on Students' Social Attitude and Learning Outcomes. *Journal Pendidikan Teknologi dan Kejuruan*, *23*(4), 374-382

Foss, P., Carney, N., McDonald, K., & Rooks, M. (2007). Project-Based Learning Activities for Short-term Intensive English Programs. *Asian EFL Journal*, *23*, 1-9. https://www.asian-efl-journal.com-834/teaching-articles /2007/ 10/ project-based-learning-activities-for-short-term-intensive-programs/#squelch-taas-tap-content-0-3.

Fried-Booth, D. L. (2002). *Project work (2nd ed.)*. New York: Oxford University Press.

Fragoulis, I. (2009). Project-Based Learning in the teaching of English as a Foreign Language in Greek Primary School: From theory to practice. *English Language Teaching*, *2*(3), 113-114.

Fujioka, K. (2011). Integrating Project Work in the EFL Classroom. *JALT 2011 conference proceedings.* 408-415. Tokyo: JALT.

Gonzalez, D. K., Molina, J. C., & Cardona, B. S. R. (2017). Project-Based Learning to Develop Oral Production in English as a Foreign Language. *International Journal of Education and Information and Technologies*, *11*, 87-96.

Hamurcu, H. (2003). Project-Based Approach to Teaching Science in Preschool Education. *Eurasian Journal of Education Researcher, 13*, 66-72.

Kalvu, A. (2015). Project-Based Learning Assessment Methods Comparison in Undergraduate EFL Classes. *International Journal of Social Sciences & Educational Studies, 1(4),* 47-56.

Kalvu, A. (2017). Implementation of Project-Based Learning in EFL Classroom in Fezalar Educational Institution. *International Journal of Social Sciences & Educational Studies, 4(2),* 67-79.

Kean, A. C. & Kwe, N. M. (2014). Meaningful Learning in the Teaching of Culture: The Project-Based Learning Approach. *Journal of Education and Training Studies*, *2*(2), 189-197.

Kettanun, C. (2015). Project-Based Learning and its Validity in a Thai EFL Classroom. *Procedia: Social and Behavioral Sciences*. *192*. 567-573.

Kimsesiz, F., Dolgunsoz, E., & Konca, M. Y. (2017). The Effect of Project-Based Learning in Teaching EFL Vocabulary to Young Learners of English: The Case of Pre-School Children. *International Journal of Languages' Education and Teaching*, *5*(4). 426-439.

Kokotasaki, D., Menzies, V., & Wiggins, A. (2016). Project-based learning: a review of the literature. *Improving schools*., *19*(3). 267-277. https://doi.org/10.1177/1365480216659 733.

Kozinsky, S. (2014). How Generation Z is Shaping the Change in Education. Retrieved 4 Nov, 2019 from https://www.forbes.com/sites/sievakozinsky/2017/07/24/how-generation-z-is-shaping-the-change-in-education/#439006eb6520.

Lam, N. T. V. (2011). Project-Based Learning in Teaching English as a Foreign Language. *VNU Journal of Science, Foreign Languages, 27*, 140 -146.

Lamb, S., Maire, Q. & Doecke, E. (2017). *Future Frontiers Analytical Report Key Skills for the 21st Century: an evidence-based review.* New South Wales: Victoria University.

Loveless, A. & Williamson, B. (2013). *Learning Identities in a Digital Age: rethinking creativity, education and technology*. New York: Routledge Taylor & Francis Group.

Macadangdang, D. B. (2019). Problem Solving Proficiency and Reading Comprehension Skills of College Students and Selected Correlates. The *Asian EFL Journal*, *23*(3.3), 52-79.

McCoog, I. J. (2008). *21st Century Tteaching and Learning*. Retrieved from eric.ed.gov/PDFS/ED502607.pdf

Nanni, A. & Pusey, K. (2020). Leveraging Students' Digital Literacy through Project-Based Learning. *The Asian EFL Journal*, *24*(1), 141-164.

Natividad, A. D. & Batang, B. L. (2018). Student Perceptual Learning Styles and Attitudes Towards Communicative Language Teaching. *TESOL International Journal*, *13*(4), 104-120.

Palacios, A. P. (2019). *Learning Styles of Generation Z Latinos: A mixed-methods exploratory study of two cohorts of Business university students* (Doctoral thesis). Retrieved from https://athenaeum.uiw.edu/uiw_etds/355/

Pinter, R. & Cisar, S. M. (2018). Measuring Team Member Performance in Project Based Learning. *Journal of Applied Technical and Educational Sciences Engineering, Vocation and Environmental Aspects*, 8(4). http://doi.or/10.24368.jates.v8i4.56.

Reynolds, R., Notari, M., & Tavares, N. J. (2017). Twenty-first Century Skills and Global Education Roadmaps. In Chu, S. Kai Wah, Reynolds, R.B, Tavares, N.J., Notari, M., & Lee, C. Wing Yi, (Eds.), *21st Century Skills Development Through Inquiry-Based Learning: From Theory to Practice*. (pp.17-32). Singapore: Springer.

Shih, W. L. & Tsai, C. Y. (2017). Students' Perception of a Flipped Classroom Approach to Facilitating Online Project-Based Learning in Marketing Research Courses. *Australian Journal of Educational Technology*, *33*(5), 32-49. https://doi.org/10.14742/ajet.2884

Simpson, J. (2011). Integrating Project-Based Learning in an English Tourism Classroom in a Thai University. *Australian Catholic University, Doctoral Thesis*. Sydney, Australia.

Stanley, T. (2016). *Creating Life-Long Learners: Using Project-Based Management to Teach 21st Century Skills*. USA: Corwin A Sage Company.

Stoller, F. (1997). Project Work: A Means toP language content. *English Teaching*

Forum (Online), 35(4). Retrieved from http://exchanges.state.gov/ forum/vols/ vol135/no4/p2.htm

Stoller, F. (2006). Establishing a Theoretical Foundation for Project-based Learning in Second and Foreign Language Contexts. In Essien, A.M. (Eds). The effect of project-based learning on students' English language ability. *The 2018 International Academic Research Conference in Vienna*. 438-443.

Suto, I. & Eccles, H. (2014). The Cambridge approach to 21st Century skills: definitions, development and dilemmas for assessment. Retrieved from https://www.cambridge assessment.org.uk/Images/461811-the-cambridge-approach-to-21st-century-skills-definitions-development-and-dilemmas-for-assessment-.pdf

Trilling, B. & Fadel, C. (2012). *21st Century Skills: Learning for Life in Our Times*. New Jersey: John Wiley & Sons.

Wrigley, H. (1998). Knowledge in Action: The Promise of Project-Based Learning. Focus on Basics: Connecting Research and Practice. Retrieved from http://www.ncsall.net /index.html@id=384.html

Yang, D. (2016). *Effect of Project-Based Learning on Speaking ability of Non-English Major Chinese Students* (Master thesis), Suranaree University of Technology, Thailand.

Appendix A: Scheduled Lesson Plan

Based on the theorical framework of PBL, which focuses on providing an opportunity for students to acquire knowledge and experiences from learning, the schedule was designed and used throughout the course time. Both the students and teacher played different roles in this current project work. However, the expected outcomes were used as the course guideline. The schedule that was planned and used in this study is shown below.

Week	Steps of Project Work	Activities	Expected Skill Development	
			English Skills	**21st Century Skills**
1	Define the Problem	1.Identify the problems in agriculture and discuss (whole class). 2. Brainstorm for its causes and effects to farmers.	- Ideas expression - Vocabulary	- Information literacy - Collaboration & teamwork skills - Critical thinking - Communication skills

		3. Assign students to work in group and select a certain problem for their group. 4. Discuss the selected problem (in group)		
2	- Develop Solution Options - Plan the Project	1. Researched the information related to the selected problem. 2. Present a brief information to the class and discuss. 3. Brainstorm the most appropriate solution/project of the problem (in group). 4. Draft the outline of project work (in group) and present to the class.	- Asking and giving information - Critical reading/ listening	- Digital literacies - Collaboration skill - Learning & innovation skills - Life &career skills - Problem solving skills - Information literacy - Communication skills
3-13	- Execute the Plan - Monitor and Control the Progress	1. Develop a project work as its plan. 2. Report the progress of project to the class (every two weeks). 3. Develop a piece of written report of the project students.	- 4 main skills in English (Reading, Writing, Speaking, Listening) - Grammatical structure - Vocabulary - Critical reading and listening	- Teamworking skills - Media & technology literacies - Searching for information - Problem solving skills - Flexibility & Adaptability - Communication skills
14	Close the Project	1. Present the complete version of the project work to class. 2. Discuss and exchange ideas (whole class) about the project work. 3. Evaluate the project, according to the given rubric.	- 4 main skills in English (Reading, Writing, Speaking, Listening) -Presentation Skills	- Collaboration skills - Media & technology literacies - Communication skills - Problem solving skills - Information literacy
15	Evaluate the Project work	Give feedback to the project works (whole class).	- Speaking skills - Vocabulary	- Critical thinking skills - Communication skills

Appendix B: Questionnaire- Checklist survey

1. According to the implementation of project work in the classroom, what skills do you agree that you well developed? (You may select more than one answer.)

   1.1 English Skills

   ☐ Speaking skills   ☐ Report writing

   ☐ Critical reading   ☐ Grammatical structure

   ☐ Reading and listening comprehension   ☐ Vocabulary

   ☐ Other (Please specify) ………….

   1.2 Life Skills

   ☐ Collaboration and teamwork skills   ☐ Flexibility and adaptability

   ☐ Communication skills   ☐ Information literacy

   ☐ Problem-solving skills   ☐ Critical thinking skills

   ☐ Media and technology literacies   ☐ Other (Please specify)

………….

2. Please rate your satisfaction level with each of the following statements.

       5= Very satisfied,   4= Satisfied,   3= Neutral,   2= Unsatisfied,   1= Very unsatisfied

No.	Items	5	4	3	2	1
1	The team showed high potential through project work.					
2	I increased my responsibility and confidence level by working on this project.					
3	Our team members have learned and shared a lot of lessons from the project work.					
4	Project work activates my enthusiasm for participating class activities.					
5	I could perform excellent teamworking skills.					
6	We have accomplished the project as we planned in the beginning.					
7	Learning by doing this project challenged me to develop my English skills.					

8	I felt more confident in my English performance.					
9	I have developed my information searching skills.					
10	Project work promotes a positive learning environment.					
11	Our team is able to solve problems while we are working on project.					
12	I have gained interpersonal skills from this project work.					

- Open-ended questions

1. ท่านได้รับประโยชน์หรือข้อดีจากการนำโครงงานมาประยุกต์ใช้ในรายวิชานี้หรือไม่ อย่างไร (What is/are the benefit(s) you obtained from working on the project work?)

----

2. ในระหว่างการทำโครงงานครั้งนี้ ท่านประสบปัญหาหรืออุปสรรคใด ๆ หรือไม่ อย่างไร (What is/are the difficulty(ies) you experienced in this project work?)

----

3. ท่านมีข้อเสนอแนะอื่นใดเกี่ยวกับการนำกิจกรรมโครงงานมาใช้ในการเรียนหรือไม่ หากมี โปรดระบุ (Other suggestions)

About the Author

Nualpen Puangpunsi is an English lecturer in the Faculty of Animal Sciences and Agricultural Technology at Silpakorn University (Phetchaburi campus). Her areas of interest include English language teaching and learning, information technology in EFL class and teaching English in higher education.