

Chapter 6

Conclusion and Suggestions

The conclusion in this chapter outlines the implications this research has for instructional innovation. Continuing the findings and discussions in the previous chapter, this chapter provides the summary of this study, pedagogical implications, the suggestions to the educational circle and the community, the limitation of this study and suggestions for the future studies. The purpose of this study was mainly to investigate the challenges and implement procedure of PBL with IT in the classroom; hence, the researcher focused mainly on the teachers. Limitations of the present study and suggestions for future research are presented at the end of the chapter.

6.1 Overview of this Research

Qualitative research on the EFL teachers' instruction and students' learning is an epitome of many people's personal experiences in junior high school in Taiwan. The subjects of this research dealt with the changes brought on by educational reform and solved the problems through creative endeavors in the regular curriculum.

In the literature review, the researcher presented the rationale and the features of PBL which corresponded to the rationale and objectives of Grade 1-9 Curriculum Reform. Meanwhile, PBL with telecommunication activities on the Internet enhances integrative EFL learning and meets the trends of CALL. Constructive teaching and learning strategies through real life activities scaffold students' autonomous learning.

In order to investigate the implement of an innovation in an educational environment, two EFL teachers and their homeroom students in a junior high school in Taiwan were the participants of this qualitative case study. The projects these participants underwent, the international educational resource, IEARN, were also

introduced briefly. The research methods included interviews with the teachers and selected students, observation in and out of classes and multiple archives collected from the participants. The information collected was analyzed in order to understand the challenges and the implement procedure of the PBL for EFL teaching and learning using internet-based telecommunication activities.

The description of the cases showed how the teachers and students collaboratively tackled the challenges and implemented the projects in the classroom. Citation of teachers' instruction and students' work and reflections were shown as the supporting evidence. With the description, the researcher found some significant issues on pedagogy and concepts. The three pedagogical implications include: the value of textbooks, the impact of experienced learning and visual aids, and the teacher' scaffolding for students' autonomous learning. The concept of collaboration and authenticity also was stressed here for PBL and EFL instruction and learning. The successful pedagogy discussed in the findings and discussions of the previous chapter opens the door to the potential of this innovation mentioned in this section.

6.2 Pedagogical Implications of PBL with IT for EFL Instruction

The implement of PBL with telecommunication activities for EFL instruction in this case study offers pedagogical implications for innovation in the basic educational environment. In this section, suggestions of six categories are drawn from the previous discussion.

6.2.1 English First, Technology Second

- *EFL teachers can be involved in technological innovation with little computer skills.*

Information technology and integrative curriculum are two significant parts of

innovation in the educational reform of the Grade 1-9 Curriculum (MOE, 2006a). For English instruction, the emphasis is quite different from that in the technology domain. Interaction/communication with people should have a higher priority than interaction with the machine. The computer is only used to assist EFL instruction in the classroom, and it does not dominate teaching and learning. Cultivating students English language competence and allowing them to apply it to communicate or to explore the world through IT is the main purpose of EFL instruction with the use of innovative technology. EFL educators should keep the maxim “English first, technology second” in mind. EFL teachers hold a vast array of EFL resources and use them to construct the language education, whereas computer teachers scaffold students’ computer techniques. Students can integrate what they learn from both learning areas. This integration and “utilization of information and languages” is beneficial for the students’ lifelong learning (MOE, 2006a).

- *Take information technology as a chance to initiate collaboration and share the workload as well as to expand the knowledge territory and enrich the EFL teaching and learning.*

Life-long learning and career planning have become crucial objectives for everyone. Although EFL instruction integrated or infused with information technology torments EFL teachers without an IT background, they may actually feel confident because of their EFL knowledge. From this perspective, information management comes prior to and is more important than technical skills. Basic computer skills and literacy are necessary in modern society, and teachers, to a certain extent, have to follow this trend. If EFL teachers have more interest in computing or multimedia, it is fine for them to study advanced techniques.

Moreover, the feature of PBL with the theme-based and content-based learning

prompts EFL teachers to dabble in various knowledge/learning areas. Traditional English lessons are independent subject/learning area in junior high school education which restricted the scope of English learning and use. The goal of EFL learning for junior high school students is to provide them with a tool to explore and communicate with the rest of the world, encompassing different types of society and knowledge more than having them memorize language rules. With a learning theme, students learn vastly; with rich content, they learn deeply. EFL teachers should possess knowledge beyond the English subject itself so as to scaffold students' language application to different territories of knowledge. Information education, to this end, broadens English learning with content and integrative language abilities, instead of flashy effects from technology or multimedia.

6.2.2 Scaffolding, not Stumbling

- *Systematic instruction leads students to respond to the variety of the world on their own.*

PBL with its feature of content-based learning needs to deal with plenty of information, which nowadays rapidly emerges in large amounts at every second. Searching, organizing and presenting information are pedagogical concerns. Cultivating students' ability to process information should be one of the cores for each learning area (MEO, 2006a), including English instruction. We should not cast students floating in the sea of information but rather guide them to search for useful information and teach them to organize it logically and interpret it in their own ways. When they absorb more background knowledge through reading and real-life experience, their communication will be enriched. When they can deal with information, they can respond to the learning subjects and adapt to the world (Warschauer & Healey, 1998). Reading, writing and interpreting moves students to a

higher level of critical thinking. The process is also the discipline of language learning and using. Scaffolding, in the case study, includes the conducting and discipline for students' writing tasks, reading comprehension, learning strategies, problem solving and decision making. They all relate to the information search and organization, even dealing with information itself. Through teachers' systematic scheme and instruction, students can absorb, apply the intake and produce output, and they can gradually do more by themselves.

- *Innovation needs scheming. Teachers should plan the instruction of the whole semester and adjust the assessment instead of adhering to the scheduled process of the textbooks.*

Instructional innovation is not an impossible mission or a dream, but it can in fact be achieved with a well-organized plan. Although large-sized classes with mixed-level students challenge EFL teachers, teachers' thorough plans with selection of materials, task design, and evaluation for diverse level of students and the plan to collaborate with school staffs and students greatly reduce problems which might arise in the process of the instruction. Creative instruction can be embedded into the scheduled textbook learning if teachers plan well. PBL, with its distinguishing features of systematic construction, still needs more planning. Meanwhile, PBL allows students to learn how to make decisions according to their abilities or aptitudes. The primal objective of PBL or scaffolding is to increase students' autonomous learning. However, the premise for the goal to be achieved is that teachers should plan the instruction and the rubrics of the evaluation carefully and announce them ahead of time. Consequently, students (and also parents) should be able to understand the requests and act upon them completely, handling all the decision making on their own. Even if EFL teachers excluded PBL at the beginning of a semester, the teacher should

have planned the instruction for the whole semester and adjust the evaluation or assessment instead of sticking to the scheduled process of the textbooks.

- *Scaffolding students' basic language competence and then getting involved in the expanding activities implement the holistic learning smoothly and decrease the workload.*

Students' basic language competence needs to be built beforehand if EFL teachers are going to devote themselves to cross-cultural learning, telecommunication activities or project learning. The research cases dealing with both writing discipline and cultural shock at the same time are too oppressive for general teachers to attempt the innovation smoothly. As shown by the researcher's experiment in the workplace, the colleagues' analysis and some reflections by experienced EFL teachers, students needed to complete the topic writing in one semester before undertaking cross cultural learning. Separating the projects or expanding activities into two stages distributes the workload and students should be able to do more autonomous learning during the second stage. By planning well and allowing room for flexibility, teachers would be less stressed under the given time constraints and workload.

6.2.3 Textbook Accounted, PBL Embedded

- *Textbook learning and project-based learning can be implemented jointly through the regulation of the schoolwork.*

English textbook learning dominates the approach used to develop English literacy for junior high students in Taiwan, and it is geared to helping students prepare for the entrance exams. The boring contents, dull exercises, inflexible schedule and ceaseless tests are some common criticisms. However, we can not reject textbooks or examinations because almost every high school student in Taiwan enters higher

education by studying textbooks. Even creative teachers force themselves to stick to the textbook instruction to prepare students for entrance examinations.

Based on the result of the study, the researcher believes that it is feasible to take the textbook learning into account in the creative instruction. Words and sentence patterns scaffold students' language uses, and PBL related to the learning themes of the textbooks enlarges the language exposure, use and learning territories. It can also cultivate students' integrative language learning and using. Therefore, PBL, conversely, helps move textbook learning forward. Students have alternative ways of learning and using target language instead of arbitrary performance from the exercise and test papers. If teachers try to change the habitual instruction a little, textbook learning and PBL can be implemented jointly in the regulation of the schoolwork, especially during the first and second school year under less instant pressure of the Basic Competence Test.

- *Content-based language learning with the focus on form redeems the communicative language use.*

Since the implementation of Grade 1-9 Curriculum, students have begun to study English at the elementary level. They have been taught using the communicative approach, which is suitable for EFL beginners. However, for the junior high school students, the textbook content is boring and they often misuse the colloquialisms from the textbook in their writing. These students are now faced with higher expectations for their performance; the emphasis of their language production is no longer solely based on fluency, but on accuracy and having rich content as well. Therefore, more challenging reading materials with variety of meaningful and interesting content should be provided to the students. The sentence structures of the materials do not need to be complex, but the content must be comprehensible and appeal to the

students so that they become interested in reading, which subsequently expand their horizons.

- *Expanding learning from the contents of the textbooks can affect achievement on the Basic Competence Test for junior high students and help them readily connect to the senior high school education.*

High school teachers always suffer from heavy workload, excess teaching materials, and endless tests that are arbitrarily connected to the contents of textbooks. Under such an intensive workload, teachers indeed need solid belief and steady action to undertake the instructional innovation. It is questionable whether the excessive exercise and tests from the contents of the textbooks are necessary or effective for the students. “An exquisite test paper surpasses dozens of lousy ones!” as a winner of the outstanding teacher prize of Ministry of Education earnestly claimed. The same appeal came from a significant investigation in 2003, a nation-wide, large-scale questionnaire and research on one-third of the students out of the 300,000 who took the first Basic Competence Test (Chang et al., 2003). It showed that excessive mechanical exercise and over teaching resulted in less contribution to students’ achievement in Basic Competence Test. Therefore, time constraints and workload come from excessive teaching and mechanical testing, but the efforts seemed almost in vain.

The investigation also showed that the more outside materials and extra exercises the teachers provided the higher achievement and scores the students attained. In other words, by expanding learning beyond textbooks, it positively influenced the achievement on the Basic Competence Test for junior high students. Consequently, students are able to have a smooth transition to senior high school education (Chang et al., 2003). Therefore, in addition to textbook learning itself, students need more

discipline in taking on challenges to independently organize, interpret and reflect from their textbook learning. From the cases of the study, PBL with textbook learning or applying offered more meaningful language exercise, and students' implement of writing tasks also showed the positive results of textbook learning.

Teachers may try to reduce excessive mechanical tests and make the time and effort to expand students learning out of textbooks at least once a semester. Replacing mechanical exercises or tests with one or two small-scale projects dealing with integrative language performance do not take up much time and effort if the teachers plan ahead. Teachers also benefit by reflecting on their instruction and improving it to help students learn better.

6.2.4 Teacher's Flexible Concerns Meets Students' Diverse Needs

- *Teachers' flexible instruction and assessment meet the students' diverse levels and needs.*

Bimodal distribution in English literacy proficiency has been a serious educational problem in Taiwan (Chang et al., 2003). The teachers and the educational authority have been investigating the causes and trying to find the possible solutions. Learners are diverse in terms of backgrounds, learning experiences, styles, personal preference, and ability. Textbook material alone in the classroom can not meet the students' diverse levels and needs. Educators should become familiar with students' learning styles and potentials.

The standards of evaluation (MOE, 2006b) and General Guidelines of the Grade 1-9 Curriculum proclaim that teachers should design the instruction and evaluate students according to their multiple intelligence or aptitudes. From one of the case studies, we learn that different choices of task-taking care for different levels of students. By having flexible tasks and evaluation, teachers are able to meet students'

diverse levels and needs. Through teachers' organized instructional strategies for different learning styles, students will have the options to challenge the tasks and become active learners to reflect upon their learning process. Slower learners have the chance to take part in the learning and will not lag behind without motivation. Higher achievers will not fool around waiting for the next lesson.

The fact is that the fixed scheduled tests and curriculum progress with the textbooks bore the high-achieving students and frustrate the lower achievers. Many stress including remedial teaching for the latter, while few advanced learning are offered for the former. In addition, remedial teaching is laborious without visible results. To solve the problems faced by both ends in a large and mixed-level class, teachers need wisdom and flexibility.

PBL offers an alternative way to challenge the high achievers and attract the slow learners. Through project tasks with real life inquiry, students use the target language from textbook content in without the boring drills and tests. They have the right to decide how they were to carry out each task and present the results. The objective of language learning is the same but students are allowed to express themselves or output language diversely. Language learning is not for getting good grades on tests, but for applying it in students' life outside of the classrooms, and such is the significant meaning to all students with different backgrounds and needs.

6.2.5 Collaboration Has More Contribution

- *Collaboration among adults with different expertise have the workload released and develop student' overall learning.*

Different experts collaboratively promote children's overall learning much better than one expert laboring over details of all aspects inefficiently. Collaboration among teachers as a kind of peer learning further develops teachers' professionalism.

A type of collaboration comes from the society/community. PBL especially emphasizes that the real life learning or activities enhance students' overall learning. Students not only learn in school but the content can also be applied in their society/community, which supports and shares educational responsibility. Hence, schools would have more educational resources to develop students' overall learning. Meanwhile, it would cost less to build "authentic situations/environments" for students' experienced learning. For life-long learning and the culture identification, the society/community collaboratively is partly responsible for the education.

- *Collaboration among teachers and students in a class affects the motivation and learning.*

Students in the large and mixed-level class are rarely paid any individual attention. Collaboration with small groups divides the workload and labor but also encourages overall development. By collaborating with their peers, higher achieving students are able to apply what they learned more proficiently when they "teach" their peers, as well as motivating slow learners. On the other hand, slower learners follow the high achievers as good learning role models and are presented with the chance to take part in the learning activity. It coincides with the rationale of the Grade 1-9 Curriculum indicating that "Humanitarian attitudes include self-understanding and respect for others" (2006a).

6.2.6 Authenticity in the Real Life

- *Materials in the daily life or real-world inquiry activities as well as students' interpretation of text from the authentic material or situations are counted as authenticity of teaching and learning.*

Learning resource is ubiquitous in our daily life. By making use of these

materials and carrying out real world inquiry activities in language learning, it helps students build up or activate background knowledge of the learning materials. As a result, students' language production is authentic, because they have been using authentic learning materials or engaged in activities taking place in their actual surroundings. Therefore, it is not necessary for parents, EFL educators, and other members in the education circle to favor expensive imported learning materials, especially under a limited school budget. Nowadays, government and educational institution websites containing abundant learning resources are readily available at English teachers' disposal. Teachers may elaborate instructional design to contain themes common in students' life experience, which is better than presenting materials that are unfamiliar to the students, especially the younger or lower achieving students. If teachers would like to expand students' horizons which are strange to the learners, teachers need to deliberately design and offer more experienced learning activities or materials to build up the background knowledge/contextualization for them.

The researcher suggests that EFL teachers collaboratively share and distribute materials they have to create a rich learning resource bank. Moreover, teachers should also lead students to explore outside reading materials, which would surely help students' reading comprehension, cultivate the depth and scope of their cognition, and ameliorate their writing. Such extensive reading also benefits their performance in summative tests, like monthly tests or the Basic Competence Test.

To sum up, what influences EFL teachers' instructional innovation is teachers' firm belief and pedagogy. PBL with IT for EFL instruction, like any kind of inventive teaching approach or method, challenges the customs of EFL teachers' in junior high school education. It is very possible to solve the problems as long as teachers know how and plan well with firm belief. The researcher suggests that teachers attend workshops, especially in science and social studies learning domains, where they can

share their successful experience of PBL, or browse over the instructions with PBL and watch some of its demonstration in English educational institutions or councils in Taiwan to know more about its rationale. Many people praise EFL teachers' creativity the most; the researcher believes that the innovational instruction is very likely to be counted as one of its pedagogical specialties in Taiwan.

6.3 Suggestions for the Educational Circle and the Community

Education can not be isolated in school or in the classroom but should be provided with assistance from educational authority and community/society. In this section, suggestions for the external assistance are shown for a better implement on PBL with telecommunication activities for EFL learning.

6.3.1 For the School Administrators

- *The school facilities are readily accessible and curriculum management should be flexible.*

PBL with telecommunication activities needs not only hardware but also software and "humanware" in most junior high school systems in Taiwan. The implement of the instructional innovation in the real classroom with daily school routines requires much care and support.

First of all, the school facilities need to be readily accessible and curriculum management should be planed well. Not all students have computers with Internet connections at home. Except for sufficient facilities for instruction, the school should offer accessible computers with Internet connection in the learning corner of the school library or classroom for students' learning, instead of treating the "precious" computers as the princess in the tower locked in the classroom.

Meanwhile, students' collaboration takes time at school, not after school. In this

case study, the school library has professional librarians and opens long enough to serve all the teachers and students after school because it is a secondary school with junior and senior high school system. However, we can not expect other schools to provide the same availability because the junior high and elementary school libraries do not have professional librarians. Whether the staffs of the schools in more basic educational environments are able or willing to do the service is still uncertain, not to mention the small-sized or remote schools. At least, building up a learning corner with a computer and Internet access in the library or in a room near the teachers' office is possible. Otherwise, another possible way is coordinating the curriculum and classroom management to serve teachers' or students' needs. As educators, we need to educate students instead of creating barriers to their learning.

- *Expanding learning will not decrease regular curriculum but enhance students' achievement. All the staff of the school needs to build a consensus to foster students' holistic learning that goes beyond the desire to advance on to higher education.*

In certain junior high schools or districts, PBL or other experiential learning is misconstrued as idle games that do not contribute to higher test scores. Some parents also have the bias toward the PBL or some other inquiry-based learning for it is unrelated to the school curriculum. The factor is that the real-life learning enhances overall learning and contributes to the Basic Competence Test.

The creative teachers need the support from the school dominators and the parents. The dominators of the junior high schools need to be generous and stable, and to facilitate the parent-teacher's association. Meanwhile, PBL needs interdisciplinary supporting and instruction, the administrators and teachers have to communicate and compromise again and again ordinarily or through the fine plan in the Committee of School Curriculum Development so as to implement the instructional innovation.

6.3.2 For the Educational Authority

- *EFL Teachers need more practical demonstration about interdisciplinary curriculum design than technical or computing training in in-service workshops.*

The dangling policy of educational reform on the Grade 1-9 Curriculum pounds the basic educators (Chou, 2004). They do not know how to follow up. Only slogans and Competence Indicators for the English learning area in the Grade 1-9 Curriculum Guidelines are still vague to the EFL teachers, not to mention the addition to the curriculum of crucial issues like Information Technology Education. Teachers need a demonstration from the practitioners. Further, workshops on CALL should focus more on practical pedagogy for language concerns than computing techniques (Chao, 2004). In addition, educational institutions and official educational departments hold instructional innovation or course design contests every year. The outstanding works should not only be uploaded on the webpage and put into storage but also should also be demonstrated by the winners. Through sharing, teachers' abilities will be developed progressively.

- *Coordinating students' cognitive development, English Curriculum Guidelines have to be revised so that they are concerned about content-based learning for junior high school students.*

The English Guidelines of the curriculum reform need revising suitable for junior high school students' cognitive development. The concept of content-based learning with the focus on form should be introduced into the guidelines.

The communicative approach has been dominating the trend of basic EFL education for decades up to the present of the Grade 1-9 Curriculum reform. EFL education starts from the third grade in the elementary school as the curriculum reform is carried out. The English Guidelines for the Grade 1-9 Curriculum states that

English instruction in elementary school emphasizes listening and speaking more than reading and writing skills whereas integrative language ability with four skills are stressed in junior high school education. Unfortunately, students entering junior high school have tired of the unappetizing contents of dialogue in each lesson in the textbook. Even worse, students fluctuate between the colloquial expressions and grammatical forms (Swain, 1998). Therefore, valuing only one or a few language approaches narrows down the potential for various language usage and application. The theme-based, content-based and some other approaches with integrative language competence should be introduced in junior high school EFL education with rich materials and more accurate expressions.

Many EFL teachers or experts doubt students' ability to learn and memorize more than 2000 words that the curriculum guidelines suggest (Appendix 3 in the English Guideline of the Grade 1-9 Curriculum, MOE, 2006a). In fact, the problem lies not in the amount of vocabulary but in the material design and learning strategies. Besides, content-based or theme-based material with accurate form does not mean it more difficult than colloquial form. The praiseworthy narrative or expository reading in English subject of the Basic Competence Test implicates the pedagogical potential. If students are attracted to the interesting materials and activities, they can learn more beyond this amount and difficulty. Even the slow learners are willing to challenge the higher expectations of language tasks through proper learning strategies.

Therefore, the English Guidelines need modifying to introduce the notion of content-based learning with focus on form in order to meet the students' cognitive development and the demand of the integrative language abilities in the English Guidelines. The improvement of the textbooks, teachers' instructional plan and material design should also be considered the notion for students' better fluency and accuracy in language expression.

- *Instructional innovation with course design by teachers takes more time and effort. Teachers need to be allowed more time to prepare lessons.*

Teachers had continuously complained about the excess teaching periods and heavy workload for many years before the curriculum reform when using only one version of textbook. Under the constraint, teachers almost became the vassals of the textbooks. The educational reform worsen the problem of the workload; even the educational authority and teachers' associations have negotiated to reduce teaching hours because the instructional innovation, multiple assessments, and compiling teaching materials take more time and efforts. Without a strong belief and stable willpower to carry out the innovation, teachers can hardly manage all the classes they teach considering the workload. It is impossible to command the teachers to innovate in their instruction under so many teaching periods with 20 hours at least per week and add extra workload unrelated to the education.

The overall curriculum policy and educational system has to be formed soundly and encouragingly so as to help instructional innovation. With those suggestions, EFL education in the junior high school makes progress not only for the achievement of the Basic Competence Test but also for the connection with higher education and lifelong learning with more student autonomy.

6.3.3 For the Society/Community

- *The community also should share in part of the education and link with the school, that is, the school and the communities are interdependent.*

The school should not be isolated from the society or the community; the community also should share in the educational function linking to the school. Both language learning and PBL emphasize learning from real life and applying lessons to it. From the cases studies, students learned much from the community and realized the

important relationship between the communities and them. We also found that some individuals and institutions earnestly assist school education but some despise or reject the school's requests. It is a pity that the students lose a precious opportunity to understand and learn from the world around them. The school and the community have to connect closely to provide service and education.

- *The webpage, in Chinese and English version, of the official organizations or the popular institutions have to be set up as soon as possible to help the tourism industry and education.*

The government announces to create a bilingual environment and create a link with the global community. However, the absence of English narration in many famous institutions and scenic spots or on government webpage hinders not only the tourism industry but also cross cultural understanding and interaction with the global community. Teachers and students have to consume more time and effort, even expenditure, on translation when describing their local lives. Cross cultural understanding or international projects, like *Taiwan Schools Cyberfair* promoted by the bureau of each county and the Ministry of Education, needs more assistance from the local community.

Globalism is not a dreamy slogan but is an essential part of our lives. Many touching true stories about schools and communities from around the world are shown on the webpage of the *Taiwan Schools Cyberfair*, *International Schools Cyberfair*, and *IEARN*. The community and school, therefore, should mutually share the educational, and the English narration on the webpage can be set up as soon as possible to help the tourism industry and education.

6.4 Conclusion

In this study, the researcher investigated the challenge and implement of PBL with telecommunication activities for EFL learning in the practical situation of a basic school. The features of the instruction also corresponded with the rationale of the educational reform for Grade 1-9 Curriculum and English Learning Area. The researcher drew several significant themes and issues that should be taken into consideration by educational circle, which include teachers, school administrators, and educational authorities, and the general community as well. Although the cases may not be easily replicated in other situations, the stories provide important examples of EFL education in the basic school environment under the curriculum reform and current trends. The successful innovation was due to teachers' firm beliefs about the teaching and learning objectives, initiative and systematic planning and instruction as well as the collaboration among teachers and students. The support from school administrators and staffs, even parents and the community, also contributed to the successful instruction. Teachers devoted to EFL basic education, need an interdisciplinary sense to enrich the language contents and expand the language use to build up students' integrative language performance. Through telecommunication activities using the Internet, students clearly identified the purpose of English learning as enhancing global communication, raising local culture awareness and increasing self-esteem. Therefore, curriculum policy and educational system should be established to encourage local communities to become involved with instructional innovations, such as PBL through IT. It would assist English teachers by creating a much better language learning environment where students are able to use English for authentic purposes in an EFL environment. English education is no longer limited in the classrooms, but put to use in real life.

6.5 Limitation of the Study and Suggestions for Future Study

The study is still limited in the following aspects. First, time constraint is regarded as the major limitation in this study. Since the researcher is also an in-service junior high school teacher, she did not have much time to conduct the number of interviews and observations she would have liked. She could only briefly interview four students selected from each class; hence, the information collected from this sample size should not be used to conclude as the majority of opinions in the two classes. In addition, it was difficult to find a common time slot for the interviews and classroom observation since the researcher and the teachers had different schedules. Second, since the cases in this study consist of individual experiences, present factors and findings could not be applied to every EFL situation in Taiwan. Third, this research is a qualitative study without the design of statistic analysis on students' word use and sentence length in writing and testing. Students' language competence development in detail should be tested for the validity and reliability of the efficiency of PBL with telecommunication activities for EFL learning. In addition, the inadequate data about the students' individual learning behaviors and styles, the process of teaching or scaffolding in detail, and the gap of culture shock are all for future study to understand what extent PBL with telecommunication activities contribute to EFL learning in Taiwan.

To provide a better EFL education and cultivate students' life-long learning and global view without emphasizing textbook learning and testing, the researcher devotes herself to experimenting and observing in her workplace and hopes that more researchers are engaged in similar studies in the future.