IMPROVING CHINESE UNIVERSITY STUDENTS' ENGLISH-SPEAKING SKILLS THROUGH ROLE PLAY AND INFORMATION LITERACY TRAINING

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การปรับปรุงทักษะการพูดภาษาอังกฤษของนักศึกษาระดับมหาวิทยาลัยชาวจีน ผ่านการแสดงบทบาทสมมติและการฝึกอบรมการรู้สารสนเทศ

นางสาวคื่อเชิน หลิว

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต
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Suranaree University of Technology has approved this thesis submitted in partial fulfillment of the requirements for a Master's Deegree.

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คื่อเชิน หลิว : การปรับปรุงทักษะการพูดภาษาอังกฤษของนักศึกษาระดับมหาวิทยาลัยชาวจีนผ่านการแสดงบทบาทสมมติและการฝึกอบรมการรู้สารสนเทศ (IMPROVING CHINESE UNIVERSITY STUDENTS' ENGLISH SPEAKING SKILLS THROUGH ROLE PLAY AND INFORMATION LITERACY TRAINING) อาจารย์ที่ปรึกษา : อาจารย์ ดร.บุษกร ยอดคำลือ, 240 หน้า

การศึกษาครั้งนี้สำรวจผลของวิธีการสอน (ชื่อวิธีการ RILT) ที่พัฒนาบนพื้นฐานของโครงสร้างการเรียนรู้เหง้าและการฝึกอบรมการรู้สารสนเทศ (ILT) ในการพัฒนาทักษะการพูดภาษาอังกฤษของนักศึกษามหาวิทยาลัยจีนและเสริมสร้างความรู้สึก นอกจากนี้ยังได้ศึกษาความเข้าใจของนักเรียนและครูเกี่ยวกับการสอนโดยวิธีการนี้อีกด้วย ในการศึกษาครั้งนี้ใช้รูปแบบการทดลองแบบกึ่งทดลอง โดยเป็นนักเรียนวิชาเอกภาษาอังกฤษธุรกิจปีที่สองจากวิทยาลัยสารพัดช่างซิงหยวนประเทศจีน จำนวนสองชั้นเรียน 85 คน หนึ่งห้องเรียนได้รับการสุ่มเป็นกลุ่มทดลองและอีกหนึ่งก้องเรียนใช้เพื่อศึกาเป็นกลุ่มควบคุม โดยวิธีการ RILT ได้ใช้ในการเรียนการสอนสำหรับห้องเรียนภาษาอังกฤษ (ESC) ในกลุ่มทดลองเป็นเวลา 11 สัปดาห์ ในขณะที่ห้องเรียน ESC ของกลุ่มควบคุมยังคงใช้การเรียนแบบปกติ

กรอบทั้งเชิงปริมาณและเชิงคุณภาพใช้ในการรวบร

วมข้อมูลเพื่อตอบคำถามการวิจัย แบบทดสอบก่อนเรียนและทักษะการพูดภาษาอังกฤษถูกใช้เพื่อตรวจสอบความแตกต่างของทักษะการพูดภาษาอังกฤษของนักเรียนก่อนและหลัง 11 สัปดาห์ แบบสอบถามการสัมภาษณ์แบบกึ่งโครงสร้างรายงานรายสัปดาห์ประวัติการแชทของนักเรียนและรายงานรายสัปดาห์ใช้ในการตรวจสอบการพัฒนาความรู้สึกของนักเรียนต่อความเป็นอิสระของผู้เรียนและนักเรียนและการรับรู้ของครูเกี่ยวกับการแทรกแซง

ผลการวิจัยพบว่าหลังจากการแทรกแซง 11 สัปดาห์ของกลุ่มทดลองมีประสิทธิภาพสูงกว่ากลุ่มควบคุมอย่างมีนัยสำคัญในแง่ของทักษะการพูดภาษาอังกฤษหลังจากการแทรกแซง 11 สัปดาห์ กลุ่มทดลองได้พัฒนาทักษะการพูดภาษาอังกฤษอย่างมีนัยสำคัญ อย่างไรก็ตามหลังจาก 11 สัปดาห์ของบทเรียน ESC กลุ่มควบคุมไม่ประสบความสำเร็จในการพัฒนาทักษะการพูดภาษาอังกฤษอย่างมีนัยสำคัญ นอกจากนี้กลุ่มทดลองยังพัฒนาขึ้นอย่างมีนัยสำคัญในแง่ของความรู้สึกอิสระของผู้เรียนในขณะที่กลุ่มควบคุมไม่ได้ วิธีการ RILT ได้รับการพิจารณาว่าเป็นนวัตกรรมที่ท้าทายและมีประสิทธิภาพโดยทั้งนักเรียนและครู พวกเขาแนะนำว่าวิธี RILT มีศักยภาพที่จะนำไปใช้กับหลักสูตรอื่น ๆ อย่างกว้างขวางเพื่อให้มีประสิทธิภาพมากขึ้น นอกจากนี้นักเรียนระบุว่าพวกเขามีความมั่นใจและมีแรงจูงใจในการเรียนรู้การพูดภาษาอังกฤษ ในขณะเดียวกันบทเรียน ILT และการ

ฝึกในชั้นเรียนทำให้พวกเขาตระหนักถึงประโยชน์ที่อุปกรณ์เทคโนโลยีส่วนบุคคลสามารถนำไปสู่การเรียนรู้ซึ่งน่าจะเป็นการสร้างรากฐานสำหรับการเรียนรู้ตลอดชีวิต

สาขาวิชาภาษาต่างประเทศ
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ลายมือชื่อนักศึกษา Liu ke Zhen
ลายมือชื่ออาจารย์ที่ปรึกษา
ลายมือชื่ออาจารย์ที่ปรึกษาร่วม

KEZHEN LIU : IMPROVING CHINESE UNIVERSITY STUDENTS' ENGLISH-SPEAKING SKILLS THROUGH ROLE PLAY AND INFORMATION LITERACY TRAINING. THESIS ADVISOR : BUTSAKORN YODKAMLUE, Ph.D., 240 PP.

IMFORMATION LITERACY TRAINING/ ENGLISH SPEAKING SKILLS/ RHIZOMATIC LEARNING/ LEARNER AUTONOMY

This study investigated the effects of a teaching approach developed on the basis of a Rhizomatic learning structure and Information Literacy Training (RILT) for improving Chinese university students' English-speaking skills and strengthening their sense of learner autonomy. In addition, students' and teacher's perceptions of this approach were investigated. The study employed a quasi-experimental design. Two intact classes, 85 second-year Business English majors in Qingyuan Polytechnic in China participated in the study. One class was randomly assigned as the experimental group and the other as the control group. Both groups participated in an English-Speaking Course (ESC), which was a compulsory course taught by a Native English-speaking teacher. The RILT approach was administered to the experimental group for 11 weeks. The control group participated in a traditional ESC, also for 11 weeks. Both groups were taught by the same teacher.

Mix-methods approach was used to collect data for answering the research questions. A pretest and a posttest of English speaking were used to detect the differences in students' English-speaking proficiency both before and after the 11 weeks. Questionnaires, semi-structured interviews, reflection reports, students' chat histories, and observation field notes were used to investigate the development of

students' sense of learner autonomy as well as students and teacher's perceptions of the intervention. The findings revealed that after 11 weeks' intervention, the experimental group outperformed the control group significantly in terms of English-speaking skills. The control group, however, made no significant improvement in English-speaking skills. In addition, the experimental group also improved significantly in terms of their sense of learner autonomy, while the control group did not. The RILT approach was considered innovative, challenging, and effective by both the students and the teacher. They suggested that the RILT approach had the potential to be widely applied to other courses. Moreover, the students indicated that they became more confident and more motivated to learn to speak English. Meanwhile, the training lesson and classroom practice made them realize the benefits that their personal technology devices can bring to their learning. These benefits were likely building up a foundation for their lifelong learning.

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LIST OF ABBREVIATIONS

ESC	English-Speaking Course
PLE	Personal Learning Environment
EFL	English as a Foreign Language
CLT	Communicative Language Teaching
ICT	Information and Communication Technology
MIE	Minimally Invasive Education
RILT	Rhizomatic & Information Literacy Training
TELL	Technology-Enhanced Language Learning
GBL	Game-Based Learning
ILT	Information Literacy Training
SPSS	Statistical Package for the Social Sciences
TESOL	Teaching English to Speakers of Other Languages
CET	College English Test

CHAPTER 1

INTRODUCTION

The present study aims at developing a new approach to the teaching and learning of English-speaking skills in the Chinese higher education context through ongoing role play and information literacy training, under the Rhizomatic learning structure and with the support of personal technology devices. This chapter is an introduction to the general background and specific context of the study. The research purposes, research questions, significance of the study, and definition of key terms are described as well.

1.1 Background of the study

1.1.1 The situation and drawback of English education in China

According to statistics, the number of Chinese who learn English as a Foreign Language (EFL) had reached 400 million in recent years (Pawan et al., 2017). In China, English is normally taught as a compulsory course from grade three in primary school (Wei & Su, 2012; Bolton & Graddol; 2012). With the pressure of enrollment, students at all levels are basically taking English learning as seriously as the core of their study. The same is true of the parents, who keep sending their children to different kinds of training institution or hiring private tutors for them as long as they can afford it.

According to Guangmin Daily, there were around 100,000 native speakers of English working in China as English teachers by the year of 2012. In fact, EFL education in China has been known as the most expensive and time-consuming foreign language education around the world. However, the result of these efforts is not satisfactory when it comes to the application of English into real-world communication (He & Zhang, 2005). Many students who had high scores in College English Test Band 4 (CET4) or College English Test Band 6 (CET6) were found to be incompetent in communicating with native speakers of English.

According to Guangmin daily, there were 9.6 million students taking CET4 or CET6 in the first half of the year 2017. However, over the last three decades, the tests revealed many problems and had been criticized as “product of exam-dominant education, factory to produce students of high scores but low practical language proficiency”. EF English Proficiency Index in 2017 showed that the English proficiency of people in mainland China ranked number 8 among 20 countries and areas in Asia, which was not high considering the cost and passion they devoted to learning English. Professor Zhou, an experienced researcher in The Beijing Foreign Studies University claims that the factors that lead to this unsatisfactory outcome are complicated, namely, language environment, goals for study, ways of assessment, utilitarian society, etc. (He & Zhang, 2005). She holds that the overwhelming number of students makes it difficult to administer and rate exams that involve oral English assessment, hence the focus of

different exams has always been linguistic knowledge like structure and grammar rather than language application (He & Zhang, 2005).

As is widely known, Chinese educational system of all levels has always been test-dominant (Cai, 2002). Therefore, both English teachers and students have been devoting themselves to the teaching or learning of English linguistic knowledge while neglecting the development of oral English proficiency (Fang, 2010; Liao, 2014; Wang, 2014). That's the situation of EFLeducation in China. Educators, teachers, parents, and many other related parties are well aware of the drawbacks of EFL education in China: students perform well in taking English tests but fail in using English to communicate. Most of the related parties realize the problems and keep searching for ways to reform but fail in solving the problems fundamentally.

1.1.2 The origins of English-Speaking Course

As Professor Zhou put it, the factors that lead to this unsatisfactory outcome are language environment, goals for study, ways of assessment, utilitarian society, etc. (He & Zhang, 2005). Ways of assessment and a utilitarian society are certainly not easy to change in the current Chinese context, however, the language environment and study goals are not beyond reach with technological support and a little human effort. According to the Chinese Ministry of Education (MOE)’s requirement for college English curriculum (2007), “the objective of college English is to develop students’ ability to use English in a well rounded way, especially in listening and speaking, so

that in their future studies and careers as well as social interactions they will be able to communicate effectively, and at the same time enhance their ability to study independently and improve their general cultural awareness so as to meet the needs of China's social development and international exchanges". The curriculum requirement indicates that the study goals should be changed in order to develop students' communicative ability.

In response to the curriculum requirements, more and more universities and colleges have set up English-Speaking Courses (ESC) for English majors and many of the non-English majors. The ESC is taught by native speakers of English. However, the large classroom size and unimportant role of speaking in the examination system render them into courses for fun or relaxation rather than English-speaking learning (Tang et al., 2008; Rao, 2010; Liao, 2014). Moreover, most of the students aren't used to the ways the foreign teachers teach because of the cultural difference. In most of the institutes, there is no standard textbook or teaching materials for ESC (Xiao, 2012; Wen, 2016). The routine for an ESC lesson is normally as follows: a native speaker of English appears in the classroom as teacher without lesson plan or textbook, speaking in English, showing different cultures, telling funny stories, having students discuss among themselves under given topics, interacting with active students, assigning basically no homework, etc (Tang et al., 2008; Xiao, 2012).

Students feel relaxed in such a classroom. Nevertheless, they usually do not

have reasonably enough time to use the target language during the lesson since, firstly, the chance to interact with the teacher is rare due to the large classroom and limited time for each lesson; secondly, when they are required to interact among themselves, they do not feel comfortable to speak in English so that they speak to each other in Chinese; last but not least, the whole lesson is usually not planned well enough in advance. According to Xiao (2012), Chinese teachers always have clearly predefined teaching objectives and uniformly standard textbooks for their teaching, but the foreign teachers prefer to do their teaching flexibly without standard textbooks nor clear objectives. As a result, many students reported that they do not think that they have improved their English-speaking proficiency after taking the ESC taught by the foreign teachers (Xiao, 2012). English-speaking remains the weakest skill among the four skills for most of the Chinese students.

1.1.3 The conflict between significance and assessment of English-speaking

Despite the fact that speaking skill is at a disadvantage among the four skills in formal EFL education at all levels in China (Liao, 2014; Wang, 2014), Chinese people from different perspectives all agree on the importance of English-speaking. It is considered as one of the required qualifications in most of the recruitment advertisements (Cai, 2002). As a matter of fact, it is a paradox in Chinese EFL education that people agree on the significance of English-speaking, at the same time, they ignore it consciously or unconsciously. The phenomenon that English-speaking is being

neglected is especially severe among high schools, secondary schools, and even primary schools because of the enrollment pressure. In professor Zhou's words mentioned above would be "ways of assessment, utilitarianism society, language environment and study goals" (He & Zhang, 2005).

In China, it is difficult to make fundamental changes in terms of English-speaking in EFL education in primary school, secondary school, and high school because of the pressure of enrollment examination. However, the situation is different in higher education. Students in university or college do not have much pressure and constraint in their study. The thing that stresses them the most is the employment pressure, which usually comes in the third or fourth year when they are about to graduate. Many employers, however, require the employees to be skillful in oral English (Cai, 2002; Hu, 2002; Fang, 2010). It should be a motivation for the students and institutes to pay more attention to English-speaking skill. Nonetheless, the fact that there are always some requirements saying that "it is a priority (or necessity) to have certificates of CET 4 (or CET 6, TEM 4, TEM8, etc.)" right after "it is a priority (or necessity) to be good at speaking English", making the students focus mostly on getting all kinds of certificates.

It may be the lack of widely recognized standardized assessment of English-speaking skill in China that makes the employers, the students, and the institutions think of those certificates as something that reflects English-speaking proficiency to some

extent. Nonetheless, in reality, these certificates do not contain speaking assessment in general (Hu, 2002). As a result, even though most of the universities and colleges do include ESC in their agendas (especially for English majors) to meet the curriculum requirement, it has not been taken as seriously as it should be (Tang et al., 2008; Xiao, 2012).

1.1.4 A possible new approach for ESC in the current Chinese context

The ESC taught by native speakers of English has been considered as the solution to help develop students' English-speaking skills and their sense of cultural diversity. However, the course did not succeed in fulfilling its mission so far. There are plenty of studies that have explored the role of Native Speakers of English (NS) as teachers in EFL classrooms, arguing that the existence of the NS teachers itself is a motivation. According to Xiao (2012), the NS teachers' inexperience in dealing with large classrooms and cultural barriers between the NS teachers and students often make the ESC less effective than expected. Moreover, from the institutes' perspective, they do not know clearly how to deal with the NS teachers nor the ESC (Lv, 2017). They would usually assign very general teaching objectives for the NS teachers and let them take charge of everything. The history of ESC in China is not long enough to make course arrangement, teacher's roles, and course objectives clear and sufficiently detailed (Tang et al., 2008; Xiao, 2012; Wen, 2016). This situation should be changed. The investment in teaching and learning EFL in Chinese formal education is simply too

high to produce merely “mute English” learners (Wei & Su, 2012; Bolton & Graddol; 2012; Lv, 2017).

In order to change the situation and improve students’ English-speaking skills, an effective and systematic approach to teaching ESC in the current Chinese higher education context is necessary. To develop a new approach that is likely to be effective for the ESC in China, it might be helpful to review briefly the theories, principles, or models of language learning or learning in general, previous studies on the ESC, as well as the context of Chinese EFL education, etc. Consequently, the following content is a brief summary of the researcher’s review on relevant literature, based on which, the researcher sculpted the outline of the current study.

According to Halliday, language is a kind of semiotic system constructed by a community with shared culture, not a system of signs, but a systemic resource for meaning (Halliday, 1985). Language can also be considered as tool to mediate between minds and thereby facilitate human interaction (Tylén et al., 2010). People utilize language to represent what is going on in personal minds and hence reach basic understanding so that they can work and act coherently. Language is dynamic and diverse in many aspects. It changes over time due to human development and interaction (Berwick et al, 2013). As a result, language can not just simply be taught and learned in the classroom.

As Long proposes in his Interaction Hypothesis, language acquisition is very

likely facilitated by the use of target language in interaction (Long, 1981). The traditional classroom would not be sufficient for the acquisition of a language since there is limited interaction in target language. Pienemann (1989) suggests that each individual learner builds up his or her own grammar. It somehow echoes a Piaget's constructivist view that humans construct their knowledge on the basis of interaction between their past experience and new signals encountered from the outside world, also a more recent argument of Lian A. P. and Lian B. (1997) that there is a need to rethink individual difference among learners for their unpredicted needs when dealing with language teaching or learning (Lian, A. P., & Lian, B, 1997; Lian & Sussex, 2018).

For most of the successful language learners, the classroom is just one source of language learning which covers limited aspects of language. At the same time, there are more self-regulated or non-regulated actions happening outside the classroom that would facilitate their language acquisition (Pienemann, 1989). Looking back to the situation of teaching and learning EFL in the Chinese context, one might argue that China is not a good English language environment for learners to get other sources and do their outside classroom learning (e.g. Cai, 2002; Sun, 2009; Fang, 2010; Rao, Z., & Yuan, H, 2016). What makes it worse is that most of the Chinese learners are not autonomous enough to learn efficiently outside the classroom because of various cultural and educational factors.

Indeed, education in China has always been highly structured and test-

dominated, but there is not without voice of educational reform and good changes happening over the last two decades (Bolton & Graddol; 2012). In Chinese EFL education, due to the call of reform from different perspectives, curriculum requirements from the MOE (2007) have emphasized that the main objective of college English education should be developing students' comprehensive ability regarding listening and speaking skills. More importantly, with the penetration of the Internet and technology devices like computers, mobilephones, etc. all over China, the concern for a good English environment should no longer be a problem.

According to the 40th statistical report on the development of the Internet in China from China Internet Network Information Center (CNNIC), by June, 2017, the number of Chinese netizens had reached 751 million with an Internet penetration rate of 54.3 percent. Among these netizens, 724 million used mobilephones to access the Internet. Moreover, according to the report, students took up the largest percentage among the netizens.

With the advancement and penetration of technology devices, the use of technology in language teaching and learning has become an inevitable trend (Chen & Yang, 2014). However, both research and practice regarding Technology-enhanced Language Learning (TELL) have focused mainly on three domains, namely the technology itself, interactional or learning tasks, and teacher education (Hubbard, 2013). As the only party in which learning actually takes place, the learners, seems to receive

much less attention (Hubbard, 2013). Barrette (2001) argues that it is problematic to assume the learner who appears to be familiar with computer technology will be able to use it in language learning effectively. Learners nowadays may be widely familiar with various basic applications, even some applications for foreign languages learning, but that does not mean that they are able to make the most of the technology they have. Even the classroom-based tasks embedded with technology do not necessarily help the students learn better outside the classroom, where most likely language acquisition takes place and learner autonomy develops.

Hubbard (2013) argues that learner training aims at developing learners' skill base to use technology more effectively and efficiently in assisting language learning would be needed. Moreover, the training of skill base to use technology in language learning is very likely helpful for the students to develop learner autonomy. From the perspective of an information-rich and fast-changing society, it is beneficial for the students to learn how to access different sources of high-quality information via the Internet and therefore learn better and make better decisions (Breivik, 2005). This ability, to recognize whenever there is an information gap and then locate, evaluate, and use the needed information for tasks and problems at hand is recognized as "information literacy" by the field of Libraries and Information Science (Campbell, 2004).

To sum up, it might be very difficult to completely change the whole Chinese educational system, but it is not impossible to change the way of teaching under the

existing curriculum and agenda framework, especially in higher education where the test pressure is less intense. English-speaking skill, important as it is, is not easy to be included in the examination system (Wang, 2010). However, it is still possible for the students to learn it well with effective ways of learning and teaching supported by technology. It may be helpful to include the development of students' ability to utilize available technology devices to collect learning resources and information to facilitate their English-speaking learning. In other words, Information Literacy Training (ILT) might be able to help solve the problem of English-speaking teaching and learning.

Lian (2014) developed a learning structure with the construction of a Personal Learning Environment (PLE) connected to a networked information technology infrastructure, which he refers to as a "Rhizomatic" structure of learning. In that structure, learners determine the way they navigate through information and feedback mechanisms to construct personally relevant and appropriate knowledge in real time. Putting together the background of Chinese higher education, specific context of the ESC, significance of information literacy skills in relation to technology devices, the researcher made an assumption that it may be appropriate as well as effective to adopt this Rhizomatic structure together with ILT to develop a new approach to teaching and learning English-speaking skills under the existing Chinese higher education system.

1.2 Statement of the problem

As discussed above, the ESC taught by NS teachers could be the solution to improve students' English-speaking skills, but there are many problems making it less effective than expected. In order to probe into the problems deeply, the researcher had conducted a problem analysis in Qingyuan Polytechnic. Located in Qingyuan City, Guangdong Province, China, Qingyuan Polytechnic is a public college aiming at training professionals of various kinds. At the time when the analysis was conducted, the college had around 40 majors and 8,900 full time students. The English majors (including Business English and Normal English) had around 360 students. There were about 40 to 45 students in each class. Following the curriculum requirements, Qingyuan Polytechnic had included ESC as one of the compulsory courses for English majors and some of the other majors.

There were 3 native speakers of English working as teachers in this college. The ESC was taught by these NS teachers. The ESC was taught one 90-minutue lesson at a week. The general problems and situation of the ESC teaching and learning were quite similar with other institutes in the Chinese higher education context. However, in order to understand better the ESC teaching and learning environment in Qingyuan Polytechnic, the researcher had conducted in-depth semi-structured interviews with one NS teacher who was from the USA and 8 second-year Business English majors who had already taken the ESC (interviews were conducted by phone). Moreover, a closed

ended questionnaire regarding students' opinions, attitudes, and suggestions for the ESC was constructed based on a review of previous literature and findings from the interviews, and then sent to 42 second-year students majoring in Business English via email. The return rate was 100 percent. To strengthen the validity of the interviews and questionnaire, five experts with rich related experience were invited to analyze the items in the interview and questionnaire.

Based on the findings from the interviews and questionnaire, some problems in the ESC classroom were identified. It turned out that even though the students showed their respect and liking toward the ESC as well as the NS teacher, most of them did not think the ESC lessons were effective. The researcher organized the problems into four main categories. The interviews were all conducted in Chinese except for the one with the NS teacher. As a result, to avoid misinterpretation caused by translation from Chinese to English, the researcher showed the related finding analysis and interpretation based on the interview transcript to the interviewees and confirmed that they all agreed with the researcher's interpretation. Existing problems found in the ESC in Qingyuan Polytechnic are listed below.

1.2.1 Interaction and target language use problem:

The findings showed that basically all the students enjoyed the ESC lessons in general and loved the NS teacher, many of them even reported that "I love it very much, both the teacher and the course". Nevertheless, most of them also reflected that

the chance for them to speak English in the classroom was rare, but rarer was the chance for them to actually interact with the teacher because almost all the students were striving to do so, which was overwhelming for the teacher. According to the NS teacher, large classroom would always be a major barrier for his teaching. No matter how much effort he made, it just didn't work the way he had planned. Most of the students ended up speaking less than 10 English sentences throughout the whole lesson. Therefore, the first problem would be the lack of sufficient interaction and rare chance to use English (which was likely caused by large classroom and poorly designed classroom activities).

1.2.2 Language learning environment problem:

In most of the ESC lessons, there was always a free discussion section. One student interviewee said that he was just not feeling comfortable and natural to speak in English with his classmates all of a sudden. Many others agreed with him. They needed a natural environment that would elicit the use of English in a meaningful context. Simply giving them certain topics and asking them to discuss with one another could not work, as they put it “even speaking in Chinese, it is embarrassing when you don’t know what to talk about and how to maintain a conversation, not to mention in English”. The free discussion session always ended up with silent students or students chatting in Chinese. As for the other activities, some improvement and more appropriate designs might be needed as well to increase participation for each student. Therefore, well-designed, natural, and meaningful activities may be necessary to build up a good

environment to engage the students in speaking English among themselves.

1.2.3 Learner autonomy problem:

The big environment in Qingyuan Polytechnic (actually in most of the institutes all over China) was that most students study to meet the requirements from the universities, teachers, or test syllabus with an end purpose of getting different certificates that were believed to be helpful for their future career. As a result, the students reported that they spent most of their time preparing tests for all kinds of accreditation certificates. They did whatever their teachers suggested to be helpful for passing tests. This phenomenon indicates another serious problem hindering the development of students' English-speaking skills - students mostly did not have a sense of learner autonomy to act independently of a teacher. However, the teachers from the USA considered it was not right to tell them what to do and how to do. He believed that students should feel free to learn in their own ways.

Perhaps the teacher was right. Even though there are requirements from the curriculum to improve students' English-listening and English-speaking skills, they are vague in "how to do this". Moreover, most of the national English proficiency tests for college students do not contain the assessment of speaking skill, resulting in the phenomenon that the focus of formal EFL education in China would hardly come to speaking skill. Therefore, to improve students' English-speaking proficiency, following teachers' requirement is not enough, students should depend mostly on themselves and

make efforts inside and outside the classroom. To do that, a sense of learner autonomy is needed, yet it does not exist in most of the students.

1.2.4 Technology use and resources management problem:

It is believed that as an EFL country, China is not a good language environment for the EFL learners to use and practice English in daily life. Nonetheless, with the normalization of technology and the Internet in people's daily life, the unfavorable environment is changing. People of different mother tongues from all over the world can communicate with each other in English via the Internet. All the interviewees and questionnaire responders reported that they had at least one technology devices (mobilephone, PC, etc.) that enabled them to access the Internet anywhere anytime. However, they didn't know how to use the technology effectively to facilitate English learning.

In fact, technology not only provides a good language environment, but also rich learning resources. Students just need to know how to locate and make use of the assessable learning resources and information. As Hubbard (2013) argues, the classroom is one kind of resource for second language learning, but there should be more resources outside. It wouldn't be easy for the students to find abundant resources outside the classroom if we were in the 20th century or earlier. Nonetheless, we are in the 21st century and it is an era of information and technology. Students have technology devices powerful enough to access the Internet and get high quality resources in the real

time for their learning. The one thing missing here is the ILT aming at training students to use their technology devices to locate, evaluate, and use the resources to meet their learning needs.

To improve students' English-speaking proficiency as curriculum objectives required, a new approach to the teaching and learning of English-speaking skill is needed. In order to address the problems articulated above, the new approach should be able to 1. engage every student in speaking English as much as possible; 2. create a learning environment in which the speaking of English is natural and meaningful; 3. cultivate students' sense of learner autonomy; 4. develop students' ability to recognize information needs, and then locate, evaluate, and use it via the platform of technology devices. This ability here in the study refers to "information literacy". Put together all these characteristics, the main features of the new approach consist of a Rhizomatic structure embedded in a Personal Learning Environment (PLE), with the support of Information Literacy Training (ILT) in the platform of technology devices.

1.3 Purposes of the study

In order to address the above-mentioned problems and help improve students' English-speaking proficiency, the current study was designed under a Rhizomatic learning structure with the support of ILT in relation to technology devices. To be specific, the study aimed to help the students by working on the following aspects:

1. To develop a new Approach based on the current research context to teach the ESC under the principles of a Rhizomatic Learning structure with the support of PLE and ILT in the platform of technology devices.

2. To examine the effects of the new approach by comparing differences in English-speaking proficiency between the experimental group and the control group before and after 11 weeks of learning.

3. To investigate students' learner autonomy development during the 11 weeks of teaching and learning under the new approach.

4. To explore teacher and students' perceptions of the new approach.

1.4 Research questions

Based on the research purposes of the current study, 4 research questions were formulated as follows:

1. Is there significant difference between the experimental group and the control group in terms of English-speaking skills after the experiment?

2. Is the students' sense of learner autonomy strengthened after exposure to the new approach? If yes, in what ways?

3. What are the students' perceptions and suggestions concerning the experiment?

4. What are the teacher's perceptions and suggestions concerning the experiment?

1.5 Significance of the study

Fruitful studies have been performed on English-speaking instruction in the Chinese context. However, what make the current study different and significant is fourfold.

Firstly, from students' perspective, the study might be able to help students create their own PLE by setting them free to do their own learning and to prepare for their learning tasks. In so doing, the students would be able to experience a whole new way of learning in which they are basically on their own. They would learn to be independent and autonomous gradually by making their own judgment and decision in this PLE. They would need to look at things critically and then recognize what information they need to solve the problems at hand. Accordingly, their sense of learner autonomy might be cultivated.

Plenty of research work has indicated that an important condition to promote intrinsic motivation for learning is learning in an autonomous environment (Little, 1995; Deci et al., 1992; Dickinson, 1995; Lian, 2014; Lin & Lan, 2015). With high efficiency and intrinsic motivation, one is more likely to become a successful learner and thereby develop into a lifelong learner. Therefore, the current study is significant in that it respects students' different learning needs and emphasizes the development of their sense of autonomy in learning, which would be helpful for them in any learning practice.

Secondly, from the academic perspective, there are quite a lot of existing empirical

studies regarding English instruction in the Chinese context (e.g. Yan, 2010; Ke, 2010; Wang P., 2011; Zhang, 2013; Yang, 2014; Wen, 2016; Wang, Z., 2014; Tan, 2016; Chen X., & Chen M., 2016; Bao, Zhang, & Dixon, 2016). Most of these previous studies' starting point is "how to teach better", the researchers seem more likely to look at things from the teacher's perspective. Nevertheless, instead of working on "teaching", the current study focuses more on "learning". Moreover, most of the previous TELL research has focused on either the technology itself, the TELL tasks design, or teacher education, but giving less attention to the learner (Hubbard, 2013). The TELL environment in the current study would be different in that it does not refer to any specific technology applications nor TELL environment provided and controlled by the teachers, but a PLE in which students are free to use their own technology devices to locate learning resources and information to do their own learning. It is more like a training and practice of the students on how to make the most of technology devices they personally have to facilitate their English-speaking learning in anywhere anytime, and in the ways they like. In this sense, the current study would be able to bridge the research gap to some extent.

Thirdly, from a pedagogic perspective, the study attempted to propose a new approach to the teaching and learning of English-speaking skills in Chinese higher education context. The approach aimed to help students discover their own ways to learn English-speaking skills better with technology support within the existing formal

education framework that cannot be changed easily. In other words, the proposed approach would not violate the curriculum, course agenda, and any other rules within the framework. The teachers in this approach would be playing the roles of facilitators. This could offer some implications to Chinese higher education especially when there are always calls for reform and changes but not much implementation due to its difficulties.

Lastly, from a theoretical perspective, the new approach proposed in the current study was underpinned by the constructivist view of learning which holds that humans construct their knowledge on the basis of the interaction between their past experience and new information encountered from the outside world, and the Rhizomatic structure of learning which suggests that the one requiring learning - is by nature a real experience that forms “an intrinsic genesis, not an extrinsic conditioning” (Deleuze, 1994, as cited in Bozkurt et al, 2016). Rhizomatic view of learning holds that learning needs are unpredicted and unpredictable, therefore, it is not logical to offer an one and only teaching curriculum with predefined objectives to meet the needs of all students (Lian, 2004; Lian, 2014). In this sense, the current study may be able to provide empirical evidence for these augments/views that were used to guide the whole study.

1.6 Definition of key terms

1.6.1 Technology-Enhanced Language Learning (TELL)

TELL always overlaps with CALL (Computer Assisted Language Learning), MALL (Mobile Assisted Language Learning), etc. Here in this study TELL would often be used interchangeably with CALL or MALL.

1.6.2 Information Literacy

The American Library Association defines "information literacy" as a set of abilities requiring individuals to “recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (Uribe-Tirado & Muñoz, 2012). This definition is more suitable a few decades ago when information was mainly from the library. However, the 21st century is an era of technology and information. In an information complex environment like this, “information literacy generally refers to queries about what kind of information is needed, when it is needed, where it can be obtained, and how it can be effectively used” (Usluel, 2007, p. 93). With the advancement and generalization of technology devices connecting to the Internet, answers to the question “where the needed information can be obtained” seems to be more diverse. People no longer depends merely on a library to gather information, they have more convenient choices at hand as long as they can get access to the Internet. This study adopted the latter interpretation of information literacy and aimed to train the students to develop the ability to recognize information gap, obtain, evaluate, and

use the needed information effectively by using their personal technology devices connecting to the Internet.

1.6.3 Personal Learning Environment (PLE)

In this study, PLE refered to the environment in which the students in the experimental group would be given certain level of freedom to do their own learning, collecting information and learning resources with their own technology devices anywhere anytime.

1.6.4 Rhizomatic learning

Rhizomatic learning is a variety of pedagogical practices informed by the work of Gilles Deleuze and Félix Guattari (Gibbs, 2015). In the Rhizomatic learning structure, the curriculum, learning objectives, learning needs are not predefined by experts but constructed and negotiated by the learners themselves in their learning process in a “just in time” rather than “just in case” manner (Lian, 2014; Bozkurt et al, 2016). Learning is viewed as most effective when learners are provided with a chance to react to evolving circumstance, and when there is always a fluid and continually evolving redefinition of the task at hand. In such a structure, the students generate the syllabus individually or together.

1.6.5 English Speaking Course (ESC)

ESC is a compulsory course for English-speaking skills that has gradually been set up over the last decade for students of various majors in Chinese higher

education in response to the curriculum requirements. This course is always taught by native speakers of English. In the current study, when the term was mentioned, it refered mostly to the ESC in Qingyuan Polytechnic.

1.6.6 English-speaking proficiency

The word “proficiency” has been used a great deal in the field of Applied Linguistics. However, it is not always clear about the definition of “speaking proficiency” since the term may be used and defined differently from researcher to researcher (Iwashita et al, 2008). ACTFL (American Council on the Teaching of Foreign Language) guidelines for spoken proficiency in second language context (2012) describe five major levels of proficiency (Distinguished, Superior, Advanced, Intermediate, and Novice) constituted by four factors, namely function, content, context, and accuracy. However, the current study adopted IELTS (International English Language Testing System)’s band descriptors to measure English-speaking proficiency and seed it as the constitution of four aspects of components, they are 1. fluency and coherence; 2. lexical resource; 3. grammatical range and accuracy; 4. pronunciation. English-speaking proficiency could be used interchangeably with English-speaking skills in the current study.

1.6.7 Ongoing role play

An ongoing role play is a continually evolving role play game that lasts for a long period of time. In the current study, an ongoing role play game was designed to

simulate and replicate the real-world events that were very likely to be related to the students, like Huawei's on-campus job fair, CV design competition, graduation trip, internship experience, etc. These events would be modified into some main plots as the beginning scene while students would be assigned with different roles that were involved in this plot. The students would need to act out their roles to develop the plots like they were shooting a TV series in which they were the script writers, actors/actresses, and directors of their own roles. The plots of every week were connected to one another based on a logical time line so that one lesson would look like a continuation of the last lesson before it.

1.7 Summary

In this chapter, an introduction to the research background is presented. Following the background, statement of the problem along with a detailed problem analysis conducted in Qingyuan Polytechnic are demonstrated. Furthermore, the research purposes and research questions are briefly addressed. In the end, some relevant key terms are introduced or defined to avoid misunderstanding. In the following chapter, a review of relevant conceptual pieces of work and empirical studies will be conducted to construct a theoretical framework for the current study.

CHAPTER 2

LITERATURE REVIEW

This chapter consists of a critical review of theories and literature that are relevant to the current study. It consists of five section s. Firstly, the situation of Communicative Language Teaching (CLT) in China will be discussed. Secondly, there will be a review of 21st century skills regarding different frameworks with information literacy identified as one of the key skills. Thirdly, the use of role play games in education will be discussed. Fourthly, the theories of learning and some interesting or typical models of education will be explored. In the end, a theoretical framework for the current study will be constructed based on the above-mentioned review and the research context.

2.1 Communicative Language Teaching in China

2.1.1 The background of CLT

With the increasing significance and penetration of English around the world, the teaching and learning of English as an additional language has become an urgent need for many non-English speaking countries (Lian, 2014). English no longer belongs only to people who are ethnically English speakers (Crystal, 2012). In many cases, English is used to interact among people who share neither a common mother tongue

nor a common culture (Seidlhofer, 2005). With roughly one out of every four users of English in the world a native speaker of the language (Crystal, 2012), the term “English as a Lingua Franca” has emerged to describe communication and interaction in English between speakers with different mother tongues (Seidlhofer, 2005).

Besides being the first global lingua franca, modern English is also recognized as the first world language (Northrup, 2013). Accordingly, much research work has been performed under the topics of “teaching English as a second language”, “teaching English as a foreign language”, “teaching English as a lingua franca”, etc. to explore better approaches in helping people learn English in different education contexts. These teaching approaches or methods in the field of Second Language Acquisition (SLA) has gone through a development from grammar translation, direct method, audiolingualism, to many other methods, among which Communicative Language Teaching (CLT) is still considered as the most effective approach and has been widely used till today (Richards & Rodger, 2014).

CLT is an approach which could date back to the late 1960s (Liu, 2015). It emphasizes the role of interaction in the language learning process by engaging the learners to learn and practice the target language through interaction among one another as well as through the use of the target language inside and outside the classroom (Richards, 2005). In more recent years, task-based language teaching which focuses on the successful completion of tasks as the organizing feature and basis for assessment in

foreign language instruction, has been introduced and gained popularity in the field as a further refinement of the CLT approach. As a matter of fact, the further development of CLT is still in progress in both research and practice. Many other subsets of CLT like content-based language teaching and project-based language teaching have been developed according to different teaching and learning goals.

2.1.2 The research and practice of CLT in China

CLT does attract much attention from the field of SLA, however, it also remains many problems. According to Lian and Mestre (1985), many courses claiming to develop students' communicative competency in fact remain greatly grammatical. It is still the situation of EFL education in many Asian countries today. The reason for the failure, as they put it "Indeed, it is very difficult to bring together in a traditional classroom the normal patterns of real communicative activity which include at least the following: linguistic elements, rhythm and intonation, gestures, body language, proxemic relationships together with the rules for interaction. The absence of one or more of these elements will result in a disappearance of illocutionary force in students' utterances." For example, CLT was introduced in China since 1980s after the researchers, educators, and related policy-makers realizing the fact that traditional grammar translation method and audiolingual method are incompetent in developing students' communicative competence (Liu, 2015). Nevertheless, the result of CLT approach in EFL teaching in China was not satisfactory.

In the early stages of applying CLT approach in China, students were encouraged to develop communicative competence by meaningful drills and communicative activities. However, this attempt did not cause good outcome. Students preferred the traditional ways of classroom teaching and learning rather than these communicative activities (Rao, 2002). Moreover, teachers' low English proficiency and test-dominant education system were proved to be major factors that impeded the application of CLT (Littlewood, 2014). As a result, most of the Chinese schools of all levels claim that they apply CLT in teaching English in fact remaining traditional and grammar-dominant.

Indeed, there are too many difficulties in applying CLT into EFL classroom in China. However, from research perspective, CLT has always been a hot topic with mostly positive results. After introducing CLT in China, plenty of experiments and relevant research work have been conducted to test the effects of CLT approach or methods. Most of the time, these studies are known as task-based language teaching, cooperative language learning, computer-assisted language learning, etc. (Littlewood, 2014). For example, Yang (2014) conducted a research to explore the role of English-speaking fluency in applying CLT in Chinese high school context and to justify whether the application of CLT approach can improve students' English-speaking fluency. Angelova and Zhao (2016) had conducted a study to explore the potential of computer-mediated communication tools in SLA. They developed a collaborative online project

to enable the communication between American students and Chinese students using the discussion board, Skype, and e-mail in an attempt to help the participants' foreign language learning as well as develop their cross-cultural awareness. Besides the examples, there are more empirical studies conducted in the Chinese context providing helpful implications for EFL pedagogy with statistical evidence and inspiring discussion (e.g. Lanzhen, 2001; Zhang & Zhao, 2004; Deng & Wang, 2009; Ke, 2010; Yan, 2010; Fu & Li, 2012; Fang, 2010; Sun, 2009; Rao, 2010; Chen & Goh, 2011; Hu, 2005; Rao & Yuan, 2016; Cai, 2002).

Empirical studies concerning the application of CLT or its subsets are fruitful, the same is true of survey studies which investigate teachers or students' perceptions of CLT approach, or explore the challenge and potential for applying CLT in foreign language classroom (e.g. Zhi, 2009; Liu, 2015; Bao et al., 2016; Tan, 2016; Guo, 2017). Even though most of the empirical studies showing positive evidence for the effectiveness of CLT approach in EFL classroom in the Chinese context, the application of CLT widely and comprehensively across China is very difficult. Tan (2016)'s study identified both benefits and challenges in implementing CLT approach through task-based language teaching. Based on the analysis of Chinese educational context and existing pedagogical problems, the study indicated that the application of CLT approach should be feasible and beneficial, but there are many difficulties to overcome

and many factors to consider. In other words, it is feasible but difficult and time-consuming.

2.1.3 English-Speaking Course (ESC): a new form of CLT

2.1.3.1 The background of ESC

Chen and Goh (2011) investigated the challenges confronting Chinese university EFL teachers in oral English instruction and CLT implementation with finding showing that the teachers themselves are the most reported source of challenge. Most of the teachers in their study reported that their deficient English proficiency and inadequate pedagogic experience prevented them from organizing and carrying out speaking activities. Other factors that lead to this unsatisfactory outcome could be the utilitarian society and ways of assessment, etc. (He & Zhang, 2005).

As is widely known, EFL education in China has been about the story of students learning to pass exams with teachers teaching them to help achieve this goal (Fang, 2010). Nonetheless, the high-stake tests for English proficiency used in China do not include speaking skill as one part of the assessment. Although in 1999, the College English Test - Spoken English Test had been designed to measure oral English communication ability of university students in China (Zhang & Elder, 2011), it is merely as an optional test of much less importance.

With challenges and factors that hinder the implementation of CLT approach in Chinese EFL classroom, formal EFL education has failed to make

contribution to improving students' comprehensive competency. However, there is an urgent need for Chinese people to develop communicative ability in English due to the nation's goal to strengthen its internationalization and the individual's belief in English for a brighter future (Chen & Goh, 2011). In an attempt to change the unfavorable outcome of EFL education, and in answer to the calls for reform from different perspectives, the Ministry of Education (MOE) has published quite a lot of policies highlighting the importance of listening and speaking skills (Chen & Goh, 2011), especially for college English education. One of the publications, the College English Curriculum Requirements (2007) states that:

"The objective of College English is to develop students' ability to use English in an all-round way, especially in listening and speaking, so that in their future work and social interactions they will be able to exchange information effectively through both spoken and written channels, and at the same time they will be able to enhance their ability to study independently and improve their cultural quality so as to meet the needs of China's social development and international exchanges."

Policies on *basic* English language education in China have been inextricably linked to political, economic, and social development in the country. The economic and social development in China is very fast, so does the educational policies. Therefore, CLT approach is likely to be more widely and deeply applied in EFL classroom in the near future due to the ever-advancing educational reforms. The set-up

of ESC in many of the colleges and universities well reflects this tendency. The ESC is actually a form of implementing CLT on the purpose of improving students' English-speaking skills by importing NS teachers to teach speaking skills exclusively.

2.1.3.2 Previous studies on ESC

At the *beginning*, the ESC was more like an experimental course some universities did to explore effective ways of developing students' speaking skills, and a few years later it gradually became officially compulsory course for English majors and some of the non-English majors. However, although it is a compulsory course taught by native speakers of English, it has been reported to be less effective than expected due to the institutions and NS teachers' lack of adequate pedagogic experience (Tang et al., 2008). Many studies have been conducted to investigate the situation of ESC classroom in an attempt to identify the problems in it and make it more effective.

Tang et al (2008) designed and implemented a large-scale instructional experiment to test the possibility and effects of offering an ESC (in their study, they translated the course name into Oral English Course) to students who had a certain level of English proficiency and motivation to improve their English-speaking skills. The main goal of this experiment was to find out possible problems that might be encountered in an ESC classroom, therefore they could accumulate experience, analyze solutions, and come up with a better teaching model for official ESC in the next

term. They used observation, student dairies, questionnaires, and interviews to collect data. The findings from the data showed that most of the students did not agree that they had improved English-speaking skills significantly after taking the ESC.

The students liked the NS teachers but they also thought the teachers did not understand their local culture, educational system, nor were familiar with large classrooms, etc. According to the researchers, there were three main implications from the study. Firstly, it was necessary to develop a systematic and student-centered teaching model for this course to avoid students being passive and negative. Secondly, it might be better to make the ESC an optional course since there were limited number of NS teachers and an overwhelmingly number of students. Finally, the teaching content and method should be made interesting to the students. In conclusion, it was necessary to plan and adjust the ESC clearly and systematically to make it more effective (Tang et al, 2008).

Tang et al. (2008)'s study does offer us many useful implications, however, the ESC is not necessary to end up an optional course just because the lack of enough NS teachers and the lack of related pedagogic experience. Like Xiao (2012) argued in his survey study which investigated characteristics and problems in ESC that "native speaker English teacher and ESC are two-sided coins, we should make the most of the potential benefits that they can bring to the students as well as realize the potential problems and find solutions to fix the problems." In fact, most of the publications

regarding the ESC investigated and analyzed the characteristics of NS teachers' original way of teaching; students and NS teachers' perceptions of the teaching and learning in the ESC classroom; and the problems in the ESC classroom, etc. (e.g. Tang et al., 2008; Tang, 2010; Xiao, 2012; Wen, 2016; Zhou, 2013).

Besides publications, many theses on the ESC took the same or similar research methodology and procedure to investigate similar topics: the characteristics of the ESC and NS teachers' teaching; students and NS teachers' perceptions of the ESC; problems in ESC classroom, etc. They mostly used questionnaire, observation, students' diary, interview, or a combination of them to collect data, then analyzed and discussed the findings, finally gave suggestions on how to solve the problems and make the ESC classroom more effective for students' development of English-speaking skills.

Zhang's thesis (2013) used questionnaire and interview to investigate 300 university students and 3 NS teachers' perceptions of the ESC classroom. These students came from three different universities in Dalian city, China. In the findings, it was shown that the ESC lessons attracted students' attention easily at the beginning since the NS teachers naturally were a sign of authentic language environment and motivation. However, with more time spent in taking the course, students' interests in it decreased. This finding echoes some other studies' findings. For example, Zhou's (2013) study reported that 83.7% of the first-year university students

in his study ticked “I like it” or “I like it very much” in answering the question “Do you like English Speaking Course?”, while 65% of the second-year university students ticked them. It suggested that, with more time spent in taking the ESC, the students’ interest and expectation in it decreased.

The reasons why the students lost their interest and expectation in the ESC were multi-dimensional. As a matter of fact, the reasons came from the problems in the ESC classroom which were identified in most of the relevant studies. They can be summarized as: 1. NS teachers’ lack of systematic teaching plan; 2. the limitation of large size classroom; 3. cultural difference between students and teachers (Tang et al., 2008; Tang, 2010; Xiao, 2012; Wen, 2016; Zhou, 2013).

Most of the studies also gave suggestions on how to fix the problems and make the ESC a better course. For example, Zhou (2013) suggested offering teacher training to the NS teachers before letting them do their own teaching or developing systematic teaching plans for them. However, with plenty of suggestions and implications, few studies had actually been conducted to test their effects in making the ESC better. As a result, new approaches to teaching the ESC based on these suggestions and implications from previous studies are needed to be developed and tested. By developing new approaches and testing their effectssa through experimental study, the ESC might be able to become more effective in improving students’ English-speaking skills.

2.2 21st century skills

2.2.1 Frameworks for 21st century skills

A great number of teachers, educational researchers, policy-makers, politicians, and employers united around the idea that it was necessary to develop a framework of "21st century skills" in response to today's information rich society (Dede, 2010; Rotherham & Willingham, 2010). Most of these identified 21st century skills include deeper learning, analytic reasoning, complex problem-solving, and teamwork. The most widely accepted reasons for the emergence of 21st century skills are sophisticated information overabundance and advanced information and communication technologies in the current world.

According to Dede (2010), the notion of 21st century skills is part of an international movement that claims there are some certain skills students need to master so as to succeed in a fast-changing society. As a result, believers of the 21st century skills claim that there is an urgent need for educational reform in accordance with the needs of students and society today (Ananiadou & Claro, 2009). However, Rotherham and Willingham (2010) argue that although it is believed that the new era we live in demands a set of new skills that differ from those through history, in fact, the skills students need for the new era are not new. Among these skills, critical thinking and problem-solving, for example, are actually components of human development throughout history (Rotherham & Willingham, 2010).

Dede (2010) reviewed and compared both prominent and alternative frameworks for 21st century skills and concluded that they were largely consistent in terms of what should be added into curriculum with different emphases on overarching skills. Among the different frameworks, the one from the Partnership for 21st Century Skills (P21) might be the most influential since it is more detailed and widely adopted (Dede, 2010). The P21 framework identifies the core subjects for elementary and secondary education should be English, mathematics, science, foreign languages, civics, government, economics, arts, history, and geography.

Besides the subjects, like most of the other frameworks, the P21 framework also identifies the content, learning and thinking skills, Information and Communication Technology (ICT) literacy, life skills, and assessments for the 21st century. However, even though the P21 framework has always been considered as the most influential one among all the others, the Metiri Group and NCREL had produced a 21st century skills framework in 2003, that is earlier than P21 (Dede, 2010), which discusses 21st century skills in four dimensions (Literacy, thinking, communication, and productivity). There are more frameworks for the concept of 21st century skills which are not going to be listed here one by one.

As a matter of fact, however different among these frameworks, one certain shared implication they have on education is that educational reforms according to the characteristics of the present world are necessary in response to a changeable world

with a flood of information that is going to be obsolete anytime soon and the advanced technology spreading all over the world. Speaking of educational reforms, however, they exist much earlier before the notion of 21st century skills. Therefore, there are some critiques that claim many of the skills in the 21st century frameworks are not new nor teachable without the content of a particular domain (e.g. Ananiadou & Claro, 2009; Rotherham & Willingham, 2010). For example, critical thinking skills, complex problem-solving skills, and learning of how to learn are among those skills that are undoubtedly significant but difficult to teach independently.

2.2.2 Information literacy

2.2.2.1 Defining information literacy for today's society

As mentioned in the last section, individuals and organizations of different fields have developed different frameworks for 21st century skills for the rapidly changing society of information overabundance (Rotherham & Willingham, 2010). In almost all the frameworks, the overload information from all sources is one major dimension to be considered since it is one key foundation for decision-making. As Breivik (2005) put it "The new challenge faced by educators today is created by the very environment in which today's children live and learn. It is a world with an overabundance - indeed, a tidal wave - of information that bombards them from the time they turn on the television in the morning to the moment they turn off the computer before they go to sleep" (p.22)

Young generation today with easy access to diverse information from mobilephones, books, magazines, and many other sources often depend their school work and information needed on the Internet with or without teachers' encouragement (Breivik, 2005; Shaughnessy, Viner &Kennedy, 2018). This leads to the concern as to whether these young people are capable of evaluating the reliability and validity of the information they encounter and whether they can make the most of the information convenience. Consequently, "information literacy" has been identified as one of the significant skills students needed to master for their success in the new era (Usluel, 2007; Dede, 2010; Ross et al., 2016).

The definitions of "literacy" have been various but mainly associated with technical skills of reading and writing (Edwards & Potts, 2008). According to (Mkandawire, 2018), the definitions of literacy become clearer when it is put together with other words to form different terms like conventional or basic literacy, functional literacy, digital literacy, media literacy, medical literacy, and information literacy, etc. Consequently, information literacy can be seen as the further specification of literacy in a certain context.

The most widely adopted definition of information literacy is the one from the American Library Association (ALA) in 1989 "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information " (as cited in Campbell,

2004, p.2). In fact, this definition like many others, often sees information literacy as a skill set for students in higher education or knowledge workers. The research and practice of information literacy has always been greatly restricted to academic libraries. The instruction of information literacy is always the responsibility of librarians who believe that it is a skill set which will be beneficial for students' future as well as a self-defense mechanism for the students during their interacting with the environment.

According to Campbell (2004), if the general population's information literacy skills are examined using the ALA definition, the result is very likely to show that they meet the definition well enough but with embarrassingly inadequate levels of information literacy. Therefore, the definition of information literacy should be interpreted in a broader manner, especially in an information overabundance society where the locating, evaluating, and use of information is an inevitable topic for the general population. Moreover, in today's world of uncertainty, libraries are no longer the primary sources of information (Campbell, 2004). There is a distance between recognizing the need to reinterpret the definition of information literacy and actually do it for the majority of the population regardless of the sweeping goals of the World Summit on the Information Society "…to build a people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable

development and improving their quality of life…" (as cited in Campbell, 2004, p.4).

2.2.2.2 The need for developing information literacy

The above section illustrates that there is a need to reinterpret the definition of information literacy and adapt it for today's society in the 21st century where the primary sources of information are no longer libraries. Some researchers, however, argue that it might be better to use the terms "information fluency" or "information competence" as an alternative (Rader, 2002). The current study will retain the term "information literacy" to avoid confusion, however, the application of its definition will adopt partially Campbell (2004)'s suggestions to shift the focus from teaching people exactly what tools they should use to locate information to cultivating their critical thinking and raising their awareness of information as well as developing their ability to use information and resources at hand appropriately.

According to Breivik (2005), young generation is addicted to the quick production of information generated by search engines. However, the convenience and richness of information do not necessarily make them become more efficient or effective in their study and life. According to statistics, "merely 17 percent of the resources are indexed by any single popular search engine, and 83 percent of the sites that are indexed contain commercial content, with only 6 percent that are educational or scientific." (Breivik, 2005). Furthermore, in the new era of digital age where information becomes obsolete so quickly, even that 6 percent might be outdated

and lost its value. When everyone is busying embracing the digital era and Internet, there are some potential troubles that might be brought out along with the convenience. These troubles included Internet fraud, virus, misleading information, and over-reliance on technology, etc. To avoid these troubles, the development of critical thinking skills might be helpful. Moreover, critical thinking skill might also be helpful in facilitating students to determine when and where to find information and then how to identify, access, evaluate, and effectively use the information to address the problem at hand (Rader, 2002; Ross et al., 2016).

According to Breivik (2005), much has been written about the relationship between information literacy and other literacies such as computer literacy, media literacy, visual literacy, etc. However, today, information literacy is best envisioned as a broader concept that encompasses all of the other literacies. From this broader perspective, information literacy can be seen as one type of critical thinking skill since people who are information literate are more likely to be capable of using critical thinking to recognize information gap, and then locate, evaluate, and use needed information.

2.3 Role play games for education

2.3.1 Games for education

Game-based Learning (GBL) is one kind of game play with well-defined

learning purposes, which often takes the form of creating an environment in which game content and game play are likely to assist the acquisition of knowledge and skills (Qian & Clark, 2016). Most often, GBL is designed to involve students in problem solving tasks which attempt to provide students with a sense of achievement. According to Green and Bavelier (2012), one of the key factors that lead to the success of GBL is the active participation and interaction during the learning experience that engages students.

In the beginning of the 21st century, a great number of different kinds of educational game were developed especially for young learners. At that time, many of the games were computer-based but in console and hand-held formats. A decade passed, serious games had evolved and were applied in education, especially in higher education for their emphasis of complexity of the games as well as fun and competition in playing (Westera et al., 2008). For example, Second Life is one of those serious games which provides opportunities for the users to start actual business dealing with virtual goods and services for Linden dollars, which can be exchanged for US dollars.

The main purpose of applying games in higher education is to engage students in complex problem-solving environment that simulate real world situations without bringing any constraints or risks of the real world to the students (DeNeve & Heppner, 1997). In playing the games, students will need to learn by playing to solve problems or issues at hand. To create an environment like that, there are always some

roughly defined problems that allow multiple solutions designed as the basic guideline. However, it has been proven that the designing of serious games for higher education is complex, time-consuming, and costly (Westera et al., 2008). Moreover, not much is known regarding the degree to which design complexity will elicit meaningful learning.

Most of the models for designing educational games align with constructivist views of learning which see learning as a process of meaning-making through the negotiation and interaction between the learner's past experience and the encountered new information. Accordingly, the educational games designed under these models often promote social interactions to increase learners' motivation and engagement as well as develop 21st century skills such as collaboration, creativity, communication, and critical thinking (Anderson, 2011; Csikszentmihalyi, 1997; Gee, 2008). According to Qian and Clark (2016), there is quite limited empirical work exploring how to apply games in education that might have an impact on the development of 21st century skills. The advocates of 21st century skills claim that these skills are significantly different from those of traditional education system. Critical thinking, creativity, collaboration, and communication are defined as the skills that are necessary for the success in the new era under many 21st century skills frameworks (Binkley et al, 2014, as cited in Qian & Clark, 2016). Consequently, it might be significant to take the components of 21st century skills into consideration when there is an attempt to apply games to higher education.

The application of technologies in education has always been a fun way to facilitate students' learning. Later on, this application has been developed to work in the form of the Virtual World (Falloon, 2010). Similarly, more recent game form, the educational E-games which embed real world situations in virtual environment, have been developed for students in higher education (Pringle, 2014). With the support of continually advancing technology and educational reforms, technology and games have been applied in simulation environments to simulate real world issues in the fields like nursing or medical education since this kind of simulation would be able to decrease the risk of the application regarding subject matter in the real world.

2.3.2 Role play for education

2.3.2.1 The definition of Role play

Role play is the changing of one's behavior to act out an adopted role (Orkin & Roy, 2007). In other words, it refers to the act people taking a role of an existing character or person and acting it out with a partner taking someone else's role, which often involves different genres of practice. In a role play designed for educational purposes, learners are provided with some basic indications of who they are, who they are going to interact with, and what they are going to act, etc., according to the tasks (Lian & Mestre, 1985).

In recent years, there is an increasing interest among researchers in applying online Virtual Reality (VR) environment to facilitate language learning. Role

play is one of the major game forms embedded in VR environment. For instance, Orkin and Roy (2007) designed a role play named *The Restaurant Game* as a new genre of VR learning environment. They refer this new genre to the Minimal Investment Multiplayer Online (MIMO) role play game, which they believe that is different from the traditional Massively Multiplayer Online (MMO) role play game. MMO role play was designed to immerse players in a fantasy world in which they will need invest a lot of time to level up their characters in detail. Role play in MIMO genre, however, was more like playing a role in society, like an act in improvisational theater rather an ordinary game playing (Orkin & Roy, 2007).

2.3.2.2 Previous studies on role play for education

Role play game allows participants to immerse themselves in a learning environment by acting out the role of a character or the part in a particular situation. In a role play game, there are some rules that define the situation for the players to interact with other players. In general, most of the role play games are developed to facilitate the acquisition of skills that require interpersonal interaction. As a result, it could be an appropriate choice from different simulation types (Busch et al., 2015). Role play could simply be played by people with imagination of settings in their minds. Simulation, however, is the imitation of the operation of a real-world process, involving participation in a virtual experience that resembles the real world. There might be models, mannequins, or the cases of role play employed to replicate the real-

world setting (Clapper, 2010). According to Rieber (1996), a simulation is any attempt to replicate a real or imaginary event. A role play, could be seen as a part of or a kind of simulation. A macrosimulation, according to Lian and Moore (2011), is a long-term simulation during which participants are required to act in a specific lifelike environment. In other words, it would be an ongoing role play or a long-term simulation, which also refers to as macrosimulation.

Much research for the application of role play or simulation in education can be found in relevant literature (e.g. Schick, 2008; Naidu & Linser, 2000; Falloon, 2010; Clapper, 2010; DeNeve & Heppner, 1997; Reid et al., 2003; Rankin et al., 2008; Chen, & Chen, 2016; Wang, Y., 2014). For instance, in order to explore the experiential cognition and motivation of 3D games, Rankin et al. (2006) conducted a study combining the benefits of Massively Multiplayer Online Role-Playing Game (MMORPG) and SLA methodologies to create a digital learning environment to facilitate the acquisition of a language. They used Ever Quest 2 for the study, in which language becomes a crucial artifact for character development and game tasks completion in the virtual world. Preliminary results show that this game help the participants increase their English vocabulary by 40% during their interaction with non-playing characters. Moreover, by chatting with playing characters, the intermediate and advanced students practiced their conversational skills (Rankin et al., 2006).

Similarly, Peterson (2012) investigated the linguistic and social

interaction of four EFL students with intermediate English proficiency in a MMORPG. He collected twelve illustrative episodes from the participants' text chat and analyzed them using qualitative method. The findings showed that the participants held positive attitudes toward the MMORPG. Even though they found it challenging at the beginning, they became more and more comfortable as they got familiar with the game. The participants considered the role play game as beneficial since it provided them with chance for risk-taking and fluency practicing. Moreover, it also provided them with chance to get exposure to vocabularies that were not normally encountered in classroom. The findings showed that the game provided an interactive environment for students to use target language collaboratively (Peterson, 2012).

Most of the above reviewed studies are related to online role play games for educational purposes. However, non-digital role plays and simulation are also useful approaches that often used in primary, secondary and tertiary education to enable active and experience-based learning (Busch et al., 2015). They attract students by enabling them to explore the ideas and actions of the characters who have different social, cultural, economic or political background from the students themselves (Busch et al., 2015). The reason why many undergraduates in China spend most of their time in playing computer games instead of learning is not that learning is too difficult, but not interesting. In order to engage students in learning, an innovative education paradigm which integrated game elements with roleplay to build a collaborative

learning environment would be attractive and beneficial (Han & Zhang, 2008).

2.4 Theories of learning

2.4.1 Learning theories

The core of the current study is developing a new approach for the ESC which might be able to enhance teachers' teaching effectiveness and students' learning efficiency. It therefore would be helpful to have an overview of the theories of learning in general. According to Merriam (2001), learning theories are conceptual frameworks that describe the process how knowledge is absorbed, processed, and stored through the act we call "learning". There are critics of learning theories arguing that it is unnecessary to develop and explore them since the process of learning is natural and any attempt to explain or comprehend it through the construction of learning theories will lead to problems and is contrary to personal freedom (Greenberg, 1985; Ackoff & Greenberg, 2008; Holzman, 2016). However, this kind of attempt to challenge the whole traditional education system and the existence of all learning theories might be problematic since theories of learning do help people understand the process of learning and facilitate learning as well as teaching from different perspectives, and to different extents.

2.4.1.1 Constructivism

Compared to behaviorism's view of learning as a process of

"conditioning" and behavior changes, constructivism sees learning as an internal process occurring inside learner's mind (Hean et al, 2009; Jonassen et al, 1995). There are two schools of constructivism with one called "cognitive constructivism", the other "socio-constructivism". According to Hean et al (2009), the believers of cognitive constructivism have their focus on the cognitive processes experienced by learners in which the development of cognitive structures and complicated skills are among the keys. Piaget (1973) is a prominent representative of cognitive constructivism who is famous for his view of children's cognitive development. He claims that the cognitive development of children is progressed with age maturation. One of the classic ways of applying a cognitive constructivist approach to education is to use Piaget' cognitive development theory to explore learning and acquisition of knowledge in children (Hean et al, 2009). For example, educators should understand the steps of children's mind development and then decide whether the syllabus is appropriate to them or not.

Unlike cognitive constructivism which views learning as an individually constructed process, socio-constuctivism sees the individual learning as a process that is mediated by the environment (Vygotsky, 1997). Vygotsky is one of the representatives of this school who sees learning as being mediated by socio-cultural tools like language (Rogoff, 2009). Vygotsky' socio-cultural perspective applied in education suggests that students can achieve better development with engaging in problem solving or becoming involved in collaboration by more able peers (Vygotsky,

1997). However, Gray's (1997) socio-contructivist approaches encourage students to take initiative for their own learning in that it suggests education should offer students chances to become actively involved in the process of learning in an environment that is democratic, interactive, and highly student-centered. This form of socio-constructivism gives greater emphasis to learner needs, interests, cooperative learning, and sequential activities for achieving teaching and learning objectives, which all reflect learner autonomy (Wang, 2011). Encouraging learner autonomy in autonomous learning environment is an important condition to promote intrinsic motivation for learning (Little, 1999; Dickinson, 1995).

In general, constructivists believe that each individual's personal world is constructed in his/her own mind and that this construction defines one's personal reality (Jonassen et al, 1995). In other words, we don't see things as they are, we see things as we are. According to Jonassen et al (1995), the important epistemological assumption of constructivism is that the construction of knowledge is built on individual's meaning making system in which his/her past experiences are used continuously to interact with and filter the new information. From a constructivist's perspective, meaning making is the goal of the learning processes. More specifically, in socio-constructivist view, an ideal environment for learning to occur would be an environment that engages learners in knowledge construction through collaborative activities built on meaningful contexts, and through reflection on what has been learned

via conversation with other learners (Jonassen et al, 1995).

2.4.1.2 Rhizomatic learning

Rhizomatic learning adopts a botanical metaphor “the rhizome” to refer knowledge in the information rich era, which is proposed by Deleuze and Guattari (Bozkurt et. al., 2016). It was explored at the beginning as the application of post-modern thoughts to education but recently recognized as a way of thinking about network supported education. A rhizomatic plant has no center nor defined boundary but plenty of semi-independent nodes that enable growing and stretching anywhere anytime on their own with the only constraint of the habitat (Cormier, 2008). It is clear from this metaphor that knowledge is not constant but an evolving target that can only be negotiated, compared, judged, and valued. Therefore, it suggests that learning is most effective when the learners are provided a chance to get involved in constantly evolving circumstances and therefore continually redefine the tasks at hand according to the changes. In this sense, students need to develop a strong sense of learner autonomy so that they can react to the evolving circumstances flexibly and timely. During their reaction and interaction with the evolving circumstances, they would be implementing the process of learning and gaining new knowledge. Without a strong sense of learner autonomy, learning could not be done in the most effective and efficient manner, especially under the view of Rhizomatic learning.

Similar to constructivist view of learning, Rhizomatic learning sees

the contextual and collaborative learning experience as social and personal knowledge creation or meaning making process with dynamic goals and constantly negotiated premises. However, in modern society, the core foundation for decision-making, i.e. the overabundant information we face everyday, is shifting from minute to minute (Siemens, 2014; Cormier, 2008; Lian, 2004; Breivik, 2005). Therefore, only using experts' translated information in a traditional fashion is not working effectively for the information rich age since the information bursts out too fast to wait for expert verification (Siemens, 2014). Accordingly, in Rhizomatic learning, the traditional curriculum which is derived from predefined input of experts is considered to be outdated. The advocators of Rhizomatic learning believe that a new approach to the curriculum is necessary, in which the curriculum should be negotiated in a real time manner and by the learners themselves. The community (if there is one) in which learning happens can be the curriculum itself, which is capable of automatically shaping, constructing and reconstructing itself according to the environmental changes in the same way that a rhizome does (Cormier, 2008).

2.4.2 Cases of education model

Diverse theories and models of learning as discussed above inevitably lead to different approaches to education. Moreover, different beliefs in different contexts, along with different goals for doing education, and many other factors are heading to different education models. In the following content, the researcher selectively presents

some interesting or typical models of education that are still in use currently.

2.4.2.1 Flipped classroom

The flipped classroom is an educational approach as well as one kind of blended learning that reverses the traditional approach of education by shifting the instructional content from inside to outside the classroom, often with the support of technology. When the instructional content is shifted to outside the classroom in various forms like video lessons prepared by the teacher or the third parties, online collaborative discussions, digital research, text readings, etc. (Abeysekera & Dawson, 2015), accordingly the activities as well as what has been recognized as homework will be shifted from outside to inside the classroom. In general, applying the flipped classroom model, students will watch online lectures and learn collaboratively in online discussions, or conduct research at home, then finally engage in concepts in the classroom with the facilitation of a mentor (Abeysekera & Dawson, 2015; Rosenberg, 2013).

According to Rosenberg (2013), Clintondale High School had become a “flipped school” in 2010, where students watched teachers’ lectures at home and did what was traditionally considered as homework in the classroom. Instead of giving a lecture in the classroom, the teachers record video lessons which students can choose to watch either on their mobile phones, personal computers, or in school’ computer lab. The classroom that used to be the place where traditional teaching and

learning happen, became the place for students to do projects or conduct laboratory experiments in small groups with the facilitation of the teacher. Clintondale High School was the first school in the United States to flip the classroom completely with all subjects now taught in this way (Rosenberg, 2013).

With the continually development of educational reform and evolution, the flipped classroom has been increasingly applied all over the world. Although flipped classroom is still in the process of experimentation for a way to do it better, some other schools in the United States have adopted the ideas of flipping the classroom after a visit to Clintondale High School. However, the application of flipped classroom requires more creativity and energy from the teacher. Accordingly, some teachers who are less keen on their teaching career or less competent might not like this idea much. Moreover, there is a serious critique of the flipped classroom arguing that it is not a big enough change (Rosenberg, 2013), hence it needs to go further by giving the students more responsibility for their own learning so that to meet students' different needs.

2.4.2.2 Minimally invasive education

Minimally Invasive Education (MIE) is a model of learning derived from Sugata Mitra's experiment in 1999 called the "Hole in the Wall", which refers to computers set up in public places such as streets and playgrounds for children to use without supervision (Mitra, 2005). The MIE is based on Mitra's hypothesis that children

are capable of learning to use computers on their own without intentional instruction. To test this hypothesis, he conducted the above-mentioned “Hole in the Wall” experiment in rural India and five years of empirical research work (Mitra, 1999，2000，2001，2003，2004，as cited in Mitra, 2005). All these ended up positive empirical evidence for his speculation. Without supervision nor instruction, the children mastered basic computer skills all alone through playing with the computer set up in public places.

In Mitra’s work, MIE is more like an alternative approach for the mastery of computer literacy of children in rural areas where the teachers and other educational resources are limited. However, the application of MIE is not supposed to be limited to the acquisition of computer literacy, but also to education in general. “Minimally invasive” in Mitra’ experiment means the minimum help children require to learn basic computer skills. If the concept is applied into education in general, it would be an assumption that children do not need to be taught in an environment that is strictly supervised by teachers. All that are needed for their learning are some basic resources and guidance that might be crucial to that certain learning.

“The Hole in the Wall” experiment and MIE won the Digital Opportunity Award by the World Information Technology and Service Alliance in 2008 for being “groundbreaking work in developing computer literacy and improving the quality of education at a grass root level” (Times, 2009). Consequently, there are more and more people advocating this model for education. A project named “Digital

Doorway" which is similar to the "Hole in the Wall" experiment was administered in South Africa by the CSIR and the Department of Science and Technology (Gush et al., 2004). The project was administered to verify that children as well as adults could learn to master basic computer skills on their own merely by having free access to computers and being allowed to experiment with the computers. Mitra and his followers might not attempt to replace teachers in the formal education system, but this model does provide inspiring implications for education in general in that learning could happen in a self-regulated environment without well planned instruction.

2.4.2.3 Sudbury Valley School

The Sudbury Valley School (SVS) is a primary and secondary school that has no fixed curriculum nor requirements of learning but only supports and encouragement for students' self-directed learning activities (Gray & Chanoff, 1986). By the year of 2017, more than 50 schools in the United States, Brazil, Denmark, France, Germany, Israel, Japan, and Switzerland, etc. claimed that they run under the SVS model. According to Ackoff and Greenberg (2008), educational systems would be greatly improved if students were provided the freedom to learn in their own unique path toward understanding, and to seek the media (even play) they find to be most effective for their learning.

The SVS model has three fundamental principles, namely, educational freedom, democratic governance and personal responsibility. The SVS

model challenges traditional education by criticizing it for suppressing students' creativity and turning them into compliant, obedient young people. According to Greenberg (1985), one of the school founders, the primary purpose for the school founders was to build up an environment for people of all ages to pursue their own interests and learning freely since they believe that learning occurs through self-motivation and self-regulation.

Unlike flipped classroom and Mitra' MIE model mentioned-above, the SVS model seems to challenge the whole traditional educational system in that it criticizes the predefined subjects of formal schools for having an incorrect assumption that they know what the students are going to need to know in a fast-changing world. This model suggests that every child has his/her own way of growing up, most often through the nature given tool - "play" (Ackoff & Greenberg; 2008).

Sudbury Valley School, according to Gray & Chanoff (1986), is the one and only school in the United States that meets the following criteria:

1) *It is administered entirely through democratic procedures by the students and staff members equally;*

2) *It places absolutely no academic requirements on students and establishes no academic standards for graduation;*

3) *It has survived long enough so that there are graduates (albeit few) who have done all of their elementary and secondary schooling there.* (Gray &

Chanoff ,1986)

Consequently, they conducted a study to follow the situation of the school's graduates. Findings show that, although these graduates taught themselves in ways that differ greatly from those often used at conventional schools, there was no obvious difficulty for them in dealing with traditional higher education or different careers in society. The graduates reported that they benefited from the SVS model of education which set them free to develop their own interests, personal responsibility, initiative, curiosity, appreciation and practice of democratic values, and ability to communicate well with people from all walks of life (Gray & Chanoff, 1986).

Even though the above three described models of education are different in many perspectives, it still can be seen clearly that they all encourage learner autonomy and respect different learners' needs of learning, in different ways and levels. Learner autonomy is one key factor for developing intrinsic motivation and lifelong learners (Ackoff & Greenberg, 2008; Greenberg, 1985; Little, 1995). The lack of a sense of learner autonomy nourishes students' passive attitudes toward learning and might result in low motivation and low efficiency in learning. Furthermore, students' individual differences and different learning needs all indicate that there is an urgent need to develop students' learner autonomy since only following traditional classroom education is not going to meet the needs of all students. These might be one of the crucial reasons why all the three innovative education models advocating learner

autonomy to different extents.

2.5 Toward a synthesis: theoretical framework for the study

According to Eraut (2003), theory for theory sake is futile but research or practice which is failed to be underpinned by a sound theoretical framework will be considered as incompetent. It is significant for the researchers to underpin their practice with sound theoretical underpinnings (Hean et al, 2009). However, what elements define a "sound" theoretical framework? An age-old question continues to apply: "Is it 'better' to select one theory when designing instruction or to draw ideas from different theories?" (Hayashi et al., 2006). The answers to the question are flexible and varying according to different situations and contexts of the instruction design.

There is a conceptual approach called "eclecticism", which draws upon multiple theories, approaches, or ideas to build up a good combination of them and apply it to address a subject. To make it simple, it can be considered as an approach that combines different theories effectively in dealing with particular cases. Postmodernism suggests that logic and rationality are not crucial in knowledge acquisition, and it holds that knowledge can be contradictory because its contextual nature (Kilgore, 2001). Since knowledge can be contradictory, the theories, models, and approaches of learning (acquiring knowledge), can be contradictory and coexisting too. Instead of one universal scientific fact, the researcher of the current study believes that everything is

contextual to some extent. Therefore, the study critically applies Constructivist view of learning, Rhizomatic learning structure, and some ideas from MIE model as well as SVS model that make sense in the current Chinese higher education context to construct a theoretical underpinning.

Firstly, the study is built on the structure of Rhizomatic learning which sees knowledge as an evolving target that can only be negotiated, compared, judged, and valued (Lian, 2004; Lian, 2011; Bozkurt et al., 2016). Rhizomatic learning sees the contextual and collaborative learning experience as social and personal knowledge creation or meaning making process. The characteristics of teaching approaches under this structure of learning emphasize different learner needs, interests, and sequential activities for achieving teaching and learning objectives, which all reflect learner autonomy (Lian, 2011). It can be said that, a rhizomatic view of learning suggests that there is no need for predefined learning objectives or curriculum. Consequently, in developing a teaching and learning approach that follows the Rhizomatic learning structure, it would be crucial and helpful to build up a Personal Learning Environment (PLE) in which students were free to do their own learning autonomously and their different learning needs would be elicited and fulfilled.

Secondly, as inspired from Mitra's MIE model and SVS model reviewed above, that a PLE in which the learning process is in the control of the students themselves will benefit them greatly, especially in the long-term manner and for the adult learners.

It is widely accepted that autonomy- “feeling free and volitional in one’s actions” (Deci et al, 1992) is a basic human need. Therefore, the students need to take charge of their own learning. Moreover, an important condition to promote intrinsic motivation for learning is to encourage learner autonomy in autonomous learning environments (Little, 1995). Therefore, in order to cultivate students’ intrinsic motivation and learner autonomy, the study set the students free to do relevant learning in their PLE by any means they prefered.

Thirdly, the background of an information overabundant digital society indicates that there is an urgent need to develop students’ sense of information and ability in making the most of the convenient technology and information. This leads to the necessity to cultivate students’ information literacy in relation to technology convenience. According to Breivik (2005), instead of merely applying the definition “the ability to recognize information gap, locate, access, evaluate, and use the needed information appropriately”, information literacy could be a broader concept to cover all the other literacies like computer literacy, media literacy, visual literacy, etc. Therefore, some researchers argue that there is a need to reinterpret the definition of information literacy (Breivik, 2005). Besides, the current study recognized the significance of information literacy in this new era together with the penetration of technology devices like mobilephones or personal computers in China. As a result, it also attempted to cultivate students’ sense of information literacy through encouraging them to use their own technology devices to

gather needed information or resources to solve relevant learning problems.

Finally, constructivist view of learning which sees learning as the construction of new knowledge resulting from the resolution to the learners' mental disequilibrium. This mental disequilibrium is often referred to as epistemic conflict. Piaget (1952)'s theory suggested that learners arrived at a solution to this conflict either by fitting it into an existing mental structure (assimilation) or applying it to form a new structure (accommodation). Otherwise, the conflict remains and there is no learning taking place (Piaget, 1952). In Piaget' view, knowledge is ever-changing in shape and form. He refers to these mental structures as "schemes", accordingly, assimilation is understanding the world using existing schemes while accommodation is building new schemes by refining or blending the existing schemes (Phillips, 1981). To make learning happen under this view of learning, learners' mental disequilibrium, or epistemic conflict should be fully elicited. As a result, the current study adopted an ongoing role play to engage students in learning in a real-world simulation which was basically controlled and developed by the learners themselves to enhance their learning. In playing the ongoing role play game, learners would need to define and redefine their own tasks according to the dynamic and evolving nature of the game. They would get involved in complex problem-solving process in which they needed to do things cooperatively and collaboratively.

In conclusion, the study did not stick to one single theory, model, or certain set of

principles, rather, it critically synthesized the above-mentioned theories, education models, and current conetext of the information-overabundant society to underpin itself. As shown in the Figure 2.1, based on the structure of Rhizomatic learning, adding the inspiration from Constructivist view and MIE as well SVS models, a PLE featuring different learner needs and learner autonomy was created. Moreover, based on the current context on information overabundance and technology convenience, a training lesson of information literacy and its practice (i.e. information gathering activity in the PLE and the ongoing role play game in the classroom) were designed to facilitate better teaching and learning. Figure 2.1 displays the main features of the theoretical underpinning for the current study. Under this theoretical framework, an approach to the ESC teaching and learning was designed and named as Rhizomatic and Information Literacy Training approach (hereafter refered to RILT approach) according to its main characteristics.

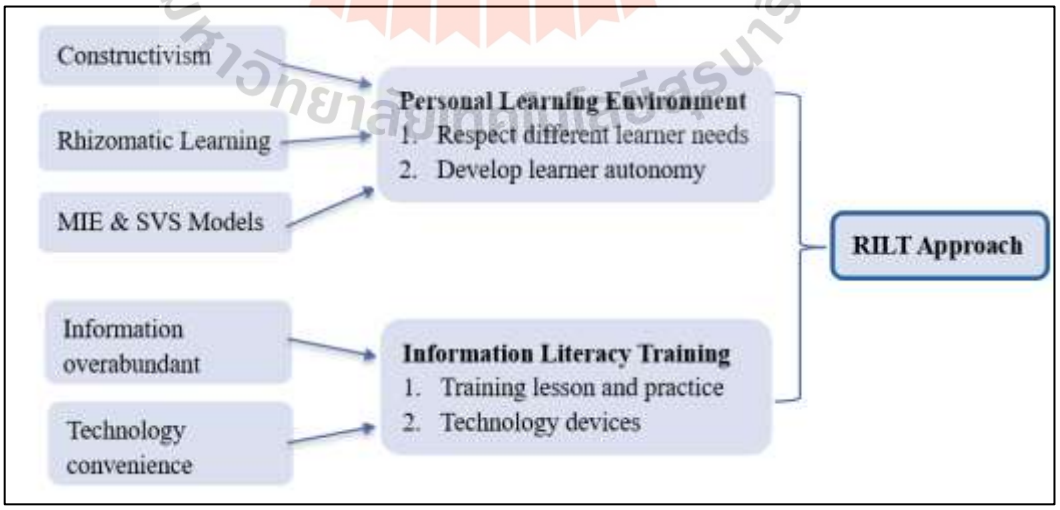

Figure 2.1 Theoretical framewrk and practical foundations of the study

2.6 Summary

This chapter has presented a critical review of concepts and topics that are relevant to the current study. They are mainly about Communicative Language Teaching in China, knowledge of language, 21st century skills, games for education, learning theories, and education models. In the end, a synthesis of the review is used to construct a theoretical framework to underpin the current study. In the next chapter, research methodology of the study will be presented.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter introduces the research methodology of the study. It firstly describes the research design, context, and participants. In the following sections, the variables and instruments will be discussed. After that, the researcher will introduce pedagogic procedures and data collection procedures of the study. In the last sections, there will be data analysis for the current study.

3.1 Research design

The current study employed a quasi-experimental and mixed methods design. On one hand, the research purposes and research questions determined that quasi-experimental design with a mixed methods approach would be the most suitable for the study. In order to examine the effectiveness of the new approach, i.e., Rhizomatic and Information Literacy Training (RILT) approach to the teaching and learning of English-speaking skills and compare the difference between the RILT approach and the traditional approach in terms of effectiveness, practicality, students' perceptions, teacher's perceptions, etc., an experimental design was a good choice. On the other hand, the relevant situations in the study existed in the real world, hence it 'would be

more representative and convenient to adopt a quasi-experimental design to keep some of the hard-to-change conditions the way they were (Seliger & Shohamy, 1989). As for the reason for mixed methods approach, the researcher argued that the use of both quantitative and qualitative methods was more effective in answering research questions than either quantitative or qualitative method alone, in that it combined the advantages of both methods as well as offseted each other' disadvantages.

3.2 Research context and participants

The researcher developed the RILT approach to the teaching and learning of English-speaking skills to help Chinese university and college students who need to take the English-Speaking Course (ESC) as a compulsory course. Taught by native speakers of English (NS) teacher, the ESC is a course recently set up to improve students' English-speaking skills and their awareness of different cultures. However, realizing that it would not be possible for the researcher to intervene such a large population, the full-time college students in Qingyuan Polytechnic who had to take the ESC in academic year 2018 were specified as the sampling frame for the study. Among them, 42 students in Business English Class 17-1 and 43 in Business English Class 17-2 were selected as a sample for the current study. These two classes would have the same NS teacher from the USA for the ESC lessons in the term when the experiment was conducted.

Studying only two classes of students in one college sampled by purposive sampling might not be convincing enough to provide generalizable results and findings for the whole population. However, some general information of the educational context in Qingyuan Polytechnic and detailed information of the two classes participated in the study were collected and articulated in the thesis so that the findings might be able to make some contribution for problems in similar contexts.

3.2.1 Research context

Founded in 2002, Qingyuan Polytechnic is a public college located in Guangdong Province, China. At the time when the research was conducted, it had about 40 majors and 8,900 full time students. There were about 360 students majoring in Business English at that time. The classroom size was about 40 to 45 students in each class. Following the curriculum requirements, Qingyuan Polytechnic had included the ESC as one of the compulsory courses for the English majors and some of the other majors. There were 3 native speakers of English in this college taking responsibility for teaching the ESC. Each week there was one 90-minute lesson for those who had to take the ESC as a compulsory course (See 3.2.3 for more information of the course).

3.2.2 Participants

Altogether 42 students in Business English Class 17-1 and 43 in Business English Class 17-2 were sampled as participants for the current study. They were selected by purposive sampling as mentioned above. They were first-year

undergraduates who were about to take the ESC in the second term of their first academic year. The two classes were randomly assigned as the experimental group and the control group. Business English Class 17-1 was the experimental group while Business English was the control group. Students of the two classes had similar backgrounds regarding EFL education. They were assigned into the current classes randomly after enrollment. In principle, the two groups were expected to have homogeneous levels of English-speaking proficiency.

To verify whether students' English-speaking proficiency between the two groups were homogeneous, a pretest was administered to all the participants before the intervention (See Appendix D). The pretest was an adaptation of IELTS speaking test which lasted for about 5 to 6 minutes for each test-taker. Independent samples t-test was used to analyze the pretest scores between the two groups. The results showed that the experimental group had a mean score of 68.42 out of 100, whereas the control group had a mean score of 70.11 out of 100. The two groups' pretest scores were not significantly different with a p-value higher than 0.05 ($p=0.490$). It proved that, as expected, these two groups of students had homogeneous levels of English-speaking proficiency before the intervention. Moreover, the two groups shared the same teacher for the ESC, a young male native speaker of English from the USA. Students of the two groups took the ESC in the second term of their first academic year.

In order to avoid ethical problems, students were informed about the

experiment before it was conducted. A written consent form (see Appendix F) was given to the students to make sure that they took part in the experiment voluntarily and that they were aware of the process and challenges of the experiment. In addition, an oral consent was required from the NS teacher who took responsibility for the ESC lessons of both the experimental group and the control group.

3.2.3 The control group

The control group, Business English Class 17-2, took the ESC in traditional way just as any regular students who were not involved in the study. However, they were required to take a pretest and a posttest as well as fill in questionnaires for learner autonomy before and after the experiment like the experimental group did. They were not informed about the experiment in any way. They attended one 90-minute ESC lesson per week (a 10-minute break in the middle) according to the traditional schedule. There was no fixed textbook, teaching materials, nor traditional written homework. The homework was something like watching a specific movie, listening to a specific song, listening to the Voice of America broadcast, etc. The general routines of traditional ESC lessons in Qingyuan Polytechnic were as follows:

1) The NS teacher came into the classroom, greeted the students by asking how was their weekend (or other relevant events) or how they were going to plan on doing something, normally with several active students voluntarily responding to the teacher;

2) The teacher shared his/her own experience regarding the greeting questions, normally from a different cultural context;

3) The teacher initiated a small game which tried to involve students in taking turns to speak in English (each student might be able to speak around one to five sentences normally);

4) When the game was over, it was time to have a 10-minute break;

5) After the 10-minute break, it was the second half of the class. The teacher let the students engage in free discussion on several controversial events or stories.

6) In the final part of this class, the teacher usually either played English songs and encouraged the students to sing along or simply played English movies.

7) The teacher closed up the class with recommendations for students to watch certain movies, talk shows, talent shows, etc. (famous ones from English-speaking countries).

The above routines were also a representative of the traditional ESC routines all over China, according to relevant literature (e.g. Wang, 2007; Tang, 2010; Liu, 2012; Xiao, 2012; Zhou, 2013; Wen, 2016), the researcher's experience as a former class participant, and the interviews done for the problems analysis (See section 1.2). However, this did not mean that it was always the case. The NS teacher occasionally made flexible changes in response to different situations. The routines of the traditional ESC classroom seemed reasonable and effective to some extent. However, it was not

as effective as expected due to different reasons (see Section 2.1.3 in chapter 2 for the reasons). Therefore, the RILT approach was designed in an attempt to improve the effectiveness of the ESC.

3.2.4 The experimental group

The RILT approach was designed under the general organizational principles of Rhizomatic learning which suggest that learning is most effective when learners are provided with a chance to react to evolving circumstances freely (Major, 2015), and constructivist view of learning which argues that learning could only happen when there is an epistemic conflict inside learners' mind. Moreover, the inspiration of giving students the freedom to do their own learning from Minimally Invasive Education (MIE) model and Sudbury Valley School (SVS) model was applied in the approach too. Therefore, one of the main features of the RILT approach was creating a Personal Learning Environment (PLE) for students to interact with the evolving and dynamic circumstances then accordingly meet their different learning needs.

Taking into consideration the background of modern information-rich society, there was a training lesson regarding how to locate, evaluate, and use information effectively through students' own technology devices to facilitate their learning, i.e. Information Literacy Training (ILT). After the ILT lesson, there were two activities designed to let the students practice what they had learned in the training. One was an outside classroom activity embedded in the PLE, in which students would use their

technology devices to locate learning resources and information in anywhere they liked to solve potential learning problems they might encounter in the classroom activity section. The other which was adopted to be the inside classroom activity was an ongoing role play game like a TV drama for the students to practice what they learned in the training lesson, meanwhile, practice their English-speaking skills.

For better communication and data collection, a resource-sharing platform was created to let students share and discuss the learning resources and information they gathered in the PLE. The main features of the experiment are shown in the below Table 3.1：

Table 3.1 Main features of the experimental group

One training lesson:
1. Students attended a 90-minute Information Literacy Training (ILT) lesson.
2. Introduced students the three activities in each of the following ESC lessons; assigned them different roles and grouped them into 4 teams for Activity 2.
Ten ESC lessons (every lesson had the same three activities):
Activity 1 (45mins): 1. Students used the knowledge learnt in the ILT lesson to gather useful information/resources about their assigned roles in any places they liked. 2. Students discussed with their teammates on how to play the following ongoing role play game in Activity 2 via the resource-sharing platform or face-to-face.
Activity 2 (32-40mins): 1. Students played the ongoing role play game team by team. Each team played for around 8 minutes with the other three teams, teacher, and teacher assistant watching as audience. 2. When all the 4 teams finished their performance, students uploaded the information/resources they gathered and used to the resource-sharing platform.
Activity 3 (rest of the time): Students wrote a reflection report on the resources and information uploaded.

From Table 3.1, it is clear that the first lesson/week was a training lesson on information literacy. In the training lesson, students were trained to use their own personal technology devices (mobilephone, computer, laptop, etc.) to locate and access information/resources to assist language learning. Meanwhile, a resource-sharing platform was created and introduced to the students to communicate and share learning resources/information with their classmates. This platform also served as an instrument for the researcher to collect data for the study by 1. letting students upload the information and resources they found and used, 2. letting students discuss and share learning experience in it, and 3. letting the students upload a small reflection report regarding the process and reflection of locating and accessing the information they uploaded. Finally, at the end of the training lesson, students were instructed about the procedure of the following 10 ESC lessons (the three activities) and assigned different roles to act out in the Activity 2 of every ESC lesson.

During the experiment, students needed to solve real-world like problems such as Huawei's on-campus job fair, university CV design competition, graduation trip, internship experience, etc. that their assigned roles might encounter in playing the ongoing role play game. To solve these problems, they would need to assess their information needs and then locate and collect these needed information/resources independently or cooperatively in every ESC lesson. The beginning scenes of the ongoing role play game were generated on the basis of real-world events that were very

likely to be related to the students. The reasons for using the real-world like events were 1. to interest the students by making learning happen in an environment that was relevant; 2. to prepare the students for the things they might encounter in the near future. These events were modified into some main plots for the first lesson as the beginning scenes of the ongoing role play game.

After that, students were the main factor to develop the plots by acting out their assigned roles in the same idea as macrosimulation (Lian & Mestre, 1985), i.e. massive ongoing real-world simulation. The next lesson would be a continuation of the last lesson (one lesson per week). It might help better understanding to think of the ongoing role play game as an episodic TV series in which every week was an episode. Students were the scriptwriters, directors, and the actors/actresses of their own roles. In that case, students would be more likely to feel like they were engaging in something meaningful and evolving.

For example, if the first lesson was a scene where students were about to graduate, the teacher might try to help students prepare themselves for the upcoming job hunt by training them to perform well in an interview or make a good CV. Meanwhile, managers of human resource department in companies like Huawei or Wanda (top 100 corporations in China) were having a meeting to prepare for the upcoming on-campus job fair. Students with their assigned roles (managers of different companies, teachers of different schools, graduating students with different CVs) might

need to figure out what they should do under these plots by gathering information and resources from the Internet via the technology devices they had control over. When the students were acting in response to these plots, they can actually develop the plots, managers could decide on whoever they wanted to hire based on the standard they found (one of the resources this role might need to identify, locate, evaluate, and use). In the next class, students who got hired might be preparing to work in the companies that hired them, while those who failed might need to edit their CV and consult related persons for the reason of failure.

The above descriptions of the activities, Table 3.1, and the example of an ongoing role play game present the characteristics of the intervention for the experimental group. For better understanding, below Figure 3.1 is a flow chart demonstrating a big picture of the routines students in the experimental group needed to follow in the 10 ESC lessons.

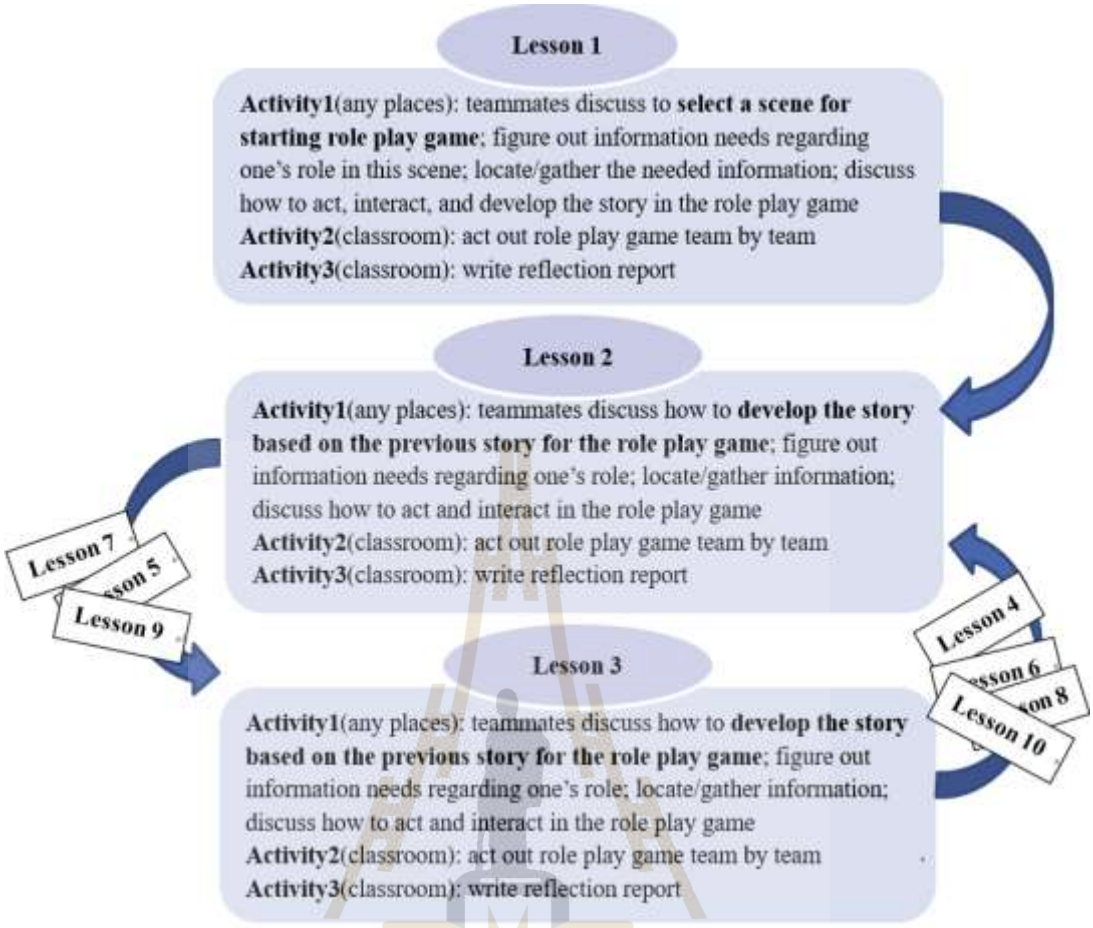

Figure 3.1 Routines of the 10 ESC lessons for the experimental group

From the above descriptions of the control group and the experimental group, it is clear that students in the experimental group were the keys to the development of plots and decision-making of their learning content. On the contrary, in the control group, the NS teacher took control of the classroom completely with randomness in deciding teaching materials and learning activities. The intervention of the RILT approach for the experimental group tried to make learning more effective by training the students to make use of their own technology devices to gather learning resources/information and giving them certain amount of freedom to do their own

learning. Considering the fact that Chinese students had a comparatively weaker sense of learner autonomy in their learning, the researcher tried to insert a certain level of control in the RILT approach to prevent chaos and increase students' acceptance of the new classroom routines. Although there was not a precise ratio of the degree of freedom to the degree of control, the researcher did try to blend them in a way that suited the situations of ESC in general based on the findings from the literature review (see section 2.1.3), problem analysis (see section 1.2), and a pilot study conducted approximately 4 months before the experiment. Below Table 3.2 shows the main differences between the experimental group and the control group's ESC lessons to help better understanding.

Table 3.2 Main comparison of two groups' ESC lessons

The experimental group	**The control group**
Learning activities: 1. Three systematic and fixed activities every lesson; 2. Sequence and connection among the three activities; 3. Sequence and connection between every lesson.	**Learning activities:** 1. Several random and different activities every lesson; 2. No sequence nor connection among these activities; 3. No sequence nor connection between each lesson.
Learning materials: - Students decided what to learn and prepared their own learning materials.	**Learning materials:** - The NS teacher decided what to teach and prepared teaching and learning materials.
Other characteristics: 1. Student-centered classroom; 2. Higly interactive with mainly inter-student interaction.	**Other characteristics:** 1. Teacher-centered classroom; 2. Less interactive with mainly teacher-student interaction.

3.3 Variables

As mentioned in the earlier sections, the RILT approach was designed under the general mindset of Rhizomatic learning system and constructivist view of learning. Therefore, one of the main principles of the study was that learning is most effective when students interact with evolving circumstances since mass circumstances reveal learners the nature on their difficulties in a dynamic, needs-based world (Lian, 2004; Cormier, 2008; Lian, 2014; Bozkurt et al., 2016). As a result, in the current study, there was no predetermined learning objective but a Personal Learning Environment (PLE) that allowed students to gather information and resources they considered as useful for solving problems in the ongoing role play game which consisted of unpredicted and unpredictable circumstances.

The main technical supports for the construction of this PLE were personal technology devices the students could make use of and a resource-sharing platform they could use to communicate one another. As a result, there were four main independent variables in the current study, namely, 1. the PLE, 2. the ongoing role play game, 3. the resource-sharing platform, and 4. a 90-minute training on information literacy (mainly about using technology devices to locate information and resources to assist language learning, here especially, English-speaking learning). As for the dependent variables, they were 1. students' sense of learner autonomy; 2. students' English-speaking proficiency; 3. students' perceptions of the RILT approach; 4.the teacher's perceptions

of the RILT approach.

3.4 Research instruments

The research objectives and research questions determined the data to be collected, accordingly determined the instruments used to collect data. The instruments used to collect data for the current study were 1. Pretest and posttest; 2. ILT lesson; 3. Resource-sharing platform; 4. Questionnaires; 5. Semi-structured interviews; 6. Observation field note.

3.4.1 Pretest and posttest

As mentioned earlier, definitions of "speaking proficiency" vary from researcher to researcher. Accordingly, it has always been difficult to assess speaking proficiency (Iwashita et al, 2008). The current study, however, adopted IELTS' speaking test and band descriptors for assessing and rating students' English-speaking proficiency. According to the band descriptors (public version), English-speaking proficiency is described as the constitution of four aspects of components, they are 1. fluency and coherence; 2. lexical resource; 3. grammatical range and accuracy; 4. pronunciation. The pretest (see Appendix D) and posttest (see Appendix E) for assessing students' English-speaking proficiency applied the IELTS speaking test and adapted it to make it an instrument for the current study. As an internationally standardized test, the IELTS speaking test has strong validity and reliability.

The IELTS speaking test normally lasts 11 to 14 minutes, consisting of three parts. The test is interactive. Test-takers take the test one by one with an examiner to initiate and maintain the interaction. After discussion with the NS teacher who was responsible for the ESC lessons for both the control group and the experimental group, an agreement was made that the pretest and posttest for the study only adopted part one and part two of the IELTS speaking test. The reason for the agreement was mainly from the consideration of administration practicality, which is an important principle in constructing a test (Brown, 2004). As a matter of fact, in Qingyuan Polytechnic, the teachers for the ESC usually adopted only part one of the IELTS speaking test as the final exam at the end of each term to test the students' English-speaking due to the administration practicality issue. The pretest and posttest were in the same format but with different topics. The topics were designed fairly for both the control group and the experimental group.

In part one of the test, the examiner confirmed students' identity and then asked general questions on general topics such as home, family, studies, and interests, lasting for around 2 minutes. In part two of the test, students were given one minute to prepare to talk about a given topic on a task card. Pencil and paper were provided for taking notes. When the one-minute preparation time was over, they needed to talk about the topic for around one to two minutes, then the examiner might ask them one to two questions on the same topic according to the situation in order to maintain the

interactive environment. Part two in the test also lasted for around 3 minutes in total. Therefore, the pretest and posttest lasted for around 5±1 minutes respectively for each student. The whole test was recorded for rating.

The examiners

There were 42 students in the experimental group and 43 students in the control group taking the tests one by one. To make sure that the pretest or posttest would be administered within one 90-minute ESC lesson for each group, three native speakers of English who were oversea postgraduate students studying in Guangdong Province, China were invited to be the examiners for the test. In that case, it was more practical in terms of test administration under the consideration of time and cost for the test.

Table 3.3 below shows the time needed to administer the pretest or posttest with the number of students in the experimental group and the control group:

Table 3.3 Time for the administration of pretest and posttest

Items	The experimental group	The control group
1. Number of students taking the test in an ESC lesson.	42	43
2. Time duration for an ESC lesson (mins)	90	90
3. Time duration for the test for each student (mins).	5±1	5±1
4. Time needed to administer the test for all students (mins).	210±42	215±43

From the table, it can be seen that since it took around 5±1 minutes to

examine each student, at least 210 ± 42 minutes were needed to administer the pretest/posttest for the students in the experimental group and 215 ± 43 minutes for the control group. In order to make sure that the test can be administered within one 90-minute ESC lesson respectively for each group, at least 3 examiners were needed to administer the test at the same time for each group. In that case, the pretest/posttest could be administered within one 90-minute ESC lesson.

The raters

Two raters were invited to rate the pretest and posttest. One of them was the American teacher responsible for the ESC lessons for both the experimental group and the control group. The other was an experienced Chinese teacher responsible for the "Histories and Cultures of English-Speaking Countries" course in Qingyuan Polytechnic. To avoid bias and increase the reliability of the scores, these two raters were given the same rating rubric as the rating criteria (see Appendix P). They were arranged to do the rating without knowing who the test-takers were. The rubric was developed on the basis of IELTS' band descriptors for speaking test. It described students' English-speaking proficiency in four dimensions, namely fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation. Each of the dimensions in the rubric took up 25 points as the full marks. As a result, the total full mark of the pretest/posttest was 100 points.

3.4.2 Information Literacy Training lesson

Considering that every single student was unique because of his/her unique previous experience, the starting level of English-speaking proficiency for each student was different from one another. Therefore, students had different needs for improving English-speaking skills, even more, different paces and progress, different environment preference, etc. Response to the uniqueness and differences, students in the experiment were free to use their technology devices to identify, locate, evaluate, and use learning resources which they considered as most effective for them to solve relevant learning problems. Even though much research has been done to explore the use of technology to assist language learning along with the rise of the terms like Computer-assisted Language Learning (CALL), Technology-enhanced Language Learning (TELL), Mobile-assisted Language Learning (MALL), etc., few has focused on guiding the students to use the technology devices of their own to locate information as a daily skill base to assist language learning autonomously.

Learner as the most important part of education, they deserve to be guided to learn more autonomously and effectively (Hubbard, 2013). With the help of mobilephone, personal computer, and the Internet, the realization of autonomous and effective learning would not be difficult. Moreover, to prepare students for their future success in the new era, it is necessary to develop their ability to make use of the information and technology convenience, to locate, evaluate, and use information

appropriately since the information overabundance and fast-changing environment are the main challenges we face today (Breivik, 2005). In doing so, students' sense of learner autonomy might be cultivated and accordingly, they might develop their intrinsic motivation in learning English-speaking skill (Little, 2003; Dickinson, 1995). To do this, before the experiment, a 90-minute Information Literacy Training (ILT) lesson was provided to train the students to make use of whatever technology devices they had to gather information and resources to meet their different learning needs and facilitate their learning.

In the current study, this ILT lesson attempted to raise students' awareness of information literacy and technology convenience then let them make use of what they learned in the ILT lesson to facilitate their learning in the following ESC lessons. The training lesson was designed and implemented based on Eisenberg (2008)'s Big6 Approach: 1. Task definition (define the problem and identify the information needed); 2. Information seeking strategies (determine all possible sources and select the best sources); 3. Location and access (locate sources and find information within sources); 4. Use of information (engage and extract relevant information); 5. Synthesis (organize information from multiple sources and present information); 6. Evaluation (judge the result and process, i.e. effectiveness and efficiency). Below table 3.4 is the lesson plan for the training lesson on information literacy:

Table 3.4 Lesson plan for Information Literacy Training

Objectives: By the end of the 90-minute training lesson, students are expected to understand basically how to use their technology devices to locate, evaluate, and use information or resources effectively to facilitate learning.			
Themes/topics	**Techniques**	**Time**	**Materials**
Opening and warming-up	**1**. Greeting; **2.**Briefly introduce the training lesson, the concepts of TELL, MALL, CALL, and information literacy, linking them together.	15mins	Video lecture computer; projector; slides
Basic knowledge and skills of IL and the Big6	**1**.Introduce and display basic knowledge and skills of IL and the Big6; **2.**Explaining the potential of using technology devices as a platform to perform IL skills and the Big6 process.	25mins	Computer; projector; Slides, video
Practice of IL skills in the technology devices and the Big6 process	**1.**Select 4 volunteers to practice the Big6; **2**.Assign roles and set up starting plots; **3.**Volunteers gather information about their roles through mobile phone or PC, etc. and prepare for a role play; **4.**The trainer coordinates the interaction **5.**Volunteers play the role play using the information they gather.	20mins	
Reflection and presentation	**1.**Select two volunteers to present their reflection on information gathering/Big6 process; **2.** Give comment on the presentation and display an example of using technology devices to complete tasks.	20mins	Computer; Mobile phone; Projector
Q & A	Students ask questions concerning the training.	10mins	

3.4.3 Resource-sharing platform

During the experiment, the students needed to upload the resources and information they found and write a small report giving a description in terms of where

they found them, why they used them, and why they thought they needed to find them in the first place, etc., before the end of each lesson. The researcher as the teaching assistant as well as the trainer of the ILT might comment generally on students' performance without going into too much detail or hurting students' felling in the platform. Moreover, the trainer might also comment on the resources students obtained and the ways they obtained them to encourage them to learn from each other and share the resources among themselves.

In the end, the trainer would give some suggestions for the students to improve the efficiency in finding high-quality resources and information, at the same time, some basic ethical problems in using Internet resources would be explained and written on the announcement board in the platform. In short, the resource-msharing platform functioned as a place where students showed their uploading and their report, discussed among themselves on anything related to the ESC lessons, and the place in which the trainer gave feedback (comments, suggestions).

Rationale for the platform:

The resource-sharing platform would serve as an instrument to gather data regarding students' information literacy developing process through the resources and information they uploaded, the report they wrote, and the discussion they had. This was more likely to make students think what they were doing was something serious and meaningful. In so doing, it might help strengthen students' sense of engagement,

responsibility, and autonomy in their learning. Moreover, the existence of the platform would offer students an environment to discuss and negotiate about the development of the plots, and offer the teacher a place to give feedback.

The platform was founded using QQ (a popular social network application in China) because of its widespread use and convenient functions which suited the purposes for building the platform. See the Figure 3.1 for demonstration of the platform:

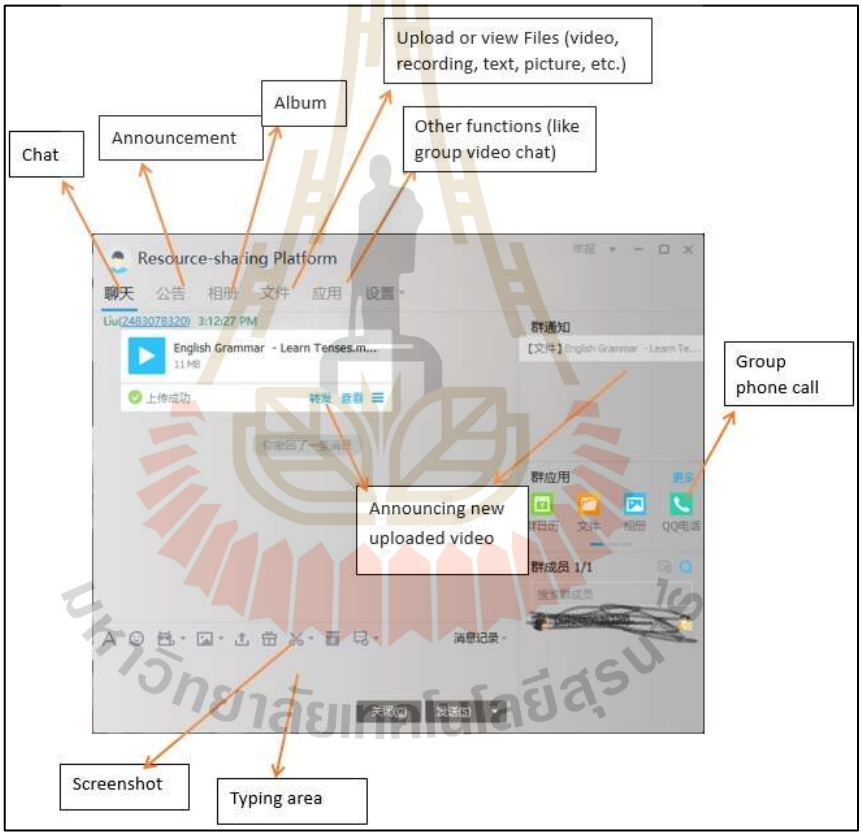

Figure 3.2 Demonstration of resource-sharing platform

3.4.4 Questionnaire

A questionnaire is a research instrument frequently used in quantitative marketing research and social science research (Saris & Gallhofer, 2007). According to

Oppenheim (2000), a questionnaire is an effective instrument to elicit information or phenomenon that cannot be observed easily, such as opinions, attitudes, beliefs, and motivations. It consists of a series of questions for collecting information from the respondents. To help answer the research questions, two questionnaires were developed and used in the study. To make sure that the questionnaire is able to elicit information, or data the researcher needs, the design of questions is very significant (Saris & Gallhofer, 2007). The questionnaires were sent to 5 experts who have experience in EFL speaking research and questionnaire design to check the content validity and language efficiency of all items. These experts all have more than 8 years'teaching experience in the Chinese EFL education. The Item Objective Congruence (IOC) index was adopted to ensure that the questionnaire items were congruent with the objective. Some revisions were made on the basis of the experts' comments and suggestions to improve the quality of the questionnaires. The questionnaires were all in Chinese to ensure better understanding for the students.

3.4.4.1 Questionnaire for students' perceptions of the new approach

Considering that it would not be practical to interview every single student in the experimental group, a questionnaire was constructed to gather information regarding students' perceptions of the RILT approach (see Appendix H). In other words, to answer research question 3 "What are the students' perceptions and suggestions concerning the experiment", it was necessary to use questionnaire as an

instrument for data collection. The construction of this questionnaire was based on a review of the related previous studies and the questionnaire used in need analysis in chapter one, the statement of the problem section.

The purpose of this questionnaire was to elicit students' opinions, suggestions, feeling, etc., toward the RILT approach to the ESC lessons. The questionnaire consisted of two parts. Part one was students' background information and part two students' perceptions. Part two, i.e. students' perceptions of the RILT approach to the ESC lessons, included 10 5-point Likert scale questions regarding their opinions, attitudes, and how they perceived the new ESC lessons a. The degrees of the 5 points ranged from "strongly agree", "agree", "undecided", "disagree", and "strongly disagree", accordingly assigned from a score of 5 points to 1 point. The same was true of the other questionnaire for measuring students' level of learner autonomy.

3.4.4.2 Questionnaire for learner autonomy

One of the main features of the study was the attempt to help students construct their own autonomous Personal Learning Environment (PLE) by setting them free to locate their own learning resources and information in the places they liked by using their own technology devices. In so doing, students might intentionally or unintentionally have some autonomous learning behaviors. Moreover, the ongoing role play game and the weekly report were very likely to bring about students' autonomous learning behavious. As a result, the development of students' sense of learner autonomy

during the experiment might be something that worth being investigating. It was shown in research question 2 “Is the students’ sense of learner autonomy strengthened after exposure to the new approach? If yes, in what way”. To answer this research question, the development of a questionnaire regarding students’ sense of learner autonomy was necessary (see Appendix A).

Even though a great deal of attention has been given to learner autonomy in education of all levels, especially in higher education, there is a lack of brief and sound measures of autonomous learning (Macaskill & Taylor, 2010). To bridge the gap, Macaskill and Taylor (2010) developed their own measure for autonomous learning based on a 12-item scale. All the 12 items they used to develop the measure have a high degree of validity. Later on, Tassinari (2012) developed a dynamic model of learner autonomy with detailed descriptors on the basis of her doctoral dissertation. Based on Macaskill and Taylor’s 12 items, Tassinari’s model and descriptors, and a review of related literature as well as the consideration of the current study’s conditions, the researcher developed a questionnaire for measuring students’ sense of learner autonomy before and after the experiment. Like the questionnaire for students’ perceptions, this questionnaire also consisted of two parts. Part one was students’ background information. Part two included 10 items related to students’ sense of learner autonomy in the form of 5-point Likert scale questions. Likewise, the degrees of the 5 points ranged from “strongly agree”, “agree”, “undecided”, “disagree”, and

“strongly disagree”, accordingly assigned from a score of 5 points to 1 point.

3.4.5 Semi-structured interview

The nature of a closed-ended questionnaire renders it impossible for the researcher to gather in-depth information from the respondents (Saris & Gallhofer, 2007). To make up for disadvantages brought from the closed-ended questionnaires mentioned above, 10 planned guiding questions (see Appendix K) were constructed to gather in-depth information from students sampled randomly in the form of a semi-structured interview. A semi-structured interview is a method used to collect data which allows new ideas and questions to be brought up during the process of the interview under the researcher’s framework of a set of planned guiding questions (Edwards & Holland, 2013; Seliger & Shohamy, 1989). In accordance with research question 4 “What are the teacher’ perceptions and suggestions concerning the experiment”, the researcher developed another 10 planned guiding questions (see Appendix N) for a semi-structured interview with the teacher as well. The IOC index was adopted to ensure that the questionnaire items were congruent with the objective in the interviews. The interview questions were sent to five experts (same experts who checked the questionnaires) to do the IOC analysis. Some revisions were made on the basis of the experts’ comments and suggestions to improve the quality of the interviews.

The interviews were conducted after the experiment when the administration of posttest and questionnaires were completed. The interview with the NS teacher was

conducted in English. The interviews with the students were conducted in Chinese to make sure that the students could express themselves fully without constraints from language problems. The number of students to be interviewed was 13. There is a phenomenon called “saturation” in conducting qualitative research, which means that the number of participants would be enough when there is no longer additional insight regardless of how many additional participants (Latham, 2013). Latham’s (2013) argues, for a homogeneous group, saturation phenomenon often appears between 12 and 15 participants. This is consistent with what Guest et al. (2006) had proposed that the saturation phenomenon in qualitative interview often appears around 12 interviewees in homogeneous groups. Consequently, to make sure that the interviews in the current study reach saturation, the researcher interviewed 13 students (with one student more than the least number proposed by Latham) for research question 3 regarding students’ perceptions of the experiment and research question 2 regarding students’ sense of learner autonomy to make up for the close-ended questionnaires.

3.4.6 Observation and field note

During the 11 weeks’ intervention, the researcher observed the ESC lessons by taking on the role of a teaching assistant. During the observation process, the researcher wrote down field notes as one part of the data to understand and interpret students’ reaction to the RILT approach. Field notes normally refer to transcribed notes or written notes from observation or interviews. Here in this study, it refers to the

written notes taken down during the researcher's observation in the experimental group's ESC lessons. The field notes consisted of two parts: a descriptive part regarding the setting, students' actions and main conversations; reflective parts regarding researcher's thoughts, ideas, questions and concerns on the observation. The observation and field notes might help the researcher understand students' reaction to the RILT approach, accordingly help the researcher interpret the qualitative data and answer research questions.

3.5 Pedagogy procedure

In this section, the pedagogic procedure for the experimental group is introduced in order to show a big picture of students' learning process, and classroom activities during the RILT approach. There are two parts in this section. Part one is the detailed procedure of the training lesson on information literacy and 10 ESC lessons for the experimental group. Part two is the explanation of the evolving nature and connection between each week and each lesson for the whole experiment.

The overall procedure

Week 1 (the ILT lesson)

Before the first ESC lesson begins, a training lesson on information literacy in relation to technology devices was provided. In the training lesson, the students learned how to make use of their technology devices to locate, evaluate and use information

and resources effectively to facilitate their study. The training lesson was taught according to the ILT lesson plan in Table 3.4. After the training lesson, students in the experimental group were assigned to specific roles that they were going to play in the following 10 ESC lessons during the whole experiment. They were grouped into 4 teams to play the ongoing role play game. Each team had one student as the coordinator responsible for coordinating his/her fellow teammates' participation and activities' implementation. They were presented some main plots modified from contemporary real-world events accompanied with a detailed introduction of the ongoing role play game that they were going to play for a period of 10 weeks as well as some general guidelines for developing the plots.

To make sure that the students understand well what they were going to do in the whole experiment, descriptions of the ongoing role play game was uploaded as an announcement in the resource-sharing platform. At the same time, the platform announcement also included each student's assigned roles to prevent them from forgetting their roles as well as an example model of the reflection report they needed to write by the end of each ESC lesson. Students who were assigned as team coordinators would need to coordinate the interaction among students in his/her team in every lesson according to the need of the development of plots.

Week 2 (the first ESC lesson)

Step 1 : When the lesson began, in the first 45 minutes (i.e. Activity 1), the

students gathered information and resources about their assigned roles in any places they like by using their technology devices like computer or mobilephone. For example, they could collect information and resouces to figure out how they should act, what they should talk about, who they should talk to, what they should prepare in order to play the game along with the main plots, etc.

The rationale of letting the students use their own technology devices instead of the computer lab in the college was to enable students make the most of technology convenience to learn anywhere anytime and develop their sense of learner autonomy. They located and accessed to the information and resouces via their technology devices, then evaluated the information on their own and made a decision on which information/resources to use and how to use it/them. With their self-made decision and the coordinator's coordination, they discussed among themselves in the resource-sharing plarform or face-to-face about how they were going to act and which role/roles they were going to interact with. They negotiated among each other and made a big picture of who should be interacting with whom, just so to avoid having somebody left with nobody to act and talk to. All these should be done within the first 45 minutes, also refered to Activity 1, information and resources gathering phase in the PLE.

Step 2 : When Activity 1 was ended, the students appeared in the classroom during the 10 minutes break and prepared for the upcoming ongoing role play game, which refered to Activity 2. The 4 coordinators checked attendance to make sure that

every member of his/her team arrived at the classroom on time.

Step 3：When Activity 2 started, students took turns to play the ongoing role play game team by team. Each team performed the game for about 8 minutes in front of the teacher, teaching assistant, and the rest of the three teams. They acted and talked as they liked, tried to behave like their assigned roles on the basis of the information and resources they gathered. The coordinator occasionally offered some narration or explanation to make the role playing go smoothly and helped the audience understand better. The teacher maintained the environment, walked around the classroom and offered some help as needed.

Step 4：When Activity 2 was completed, the students were required to upload the information and resources (could be speech video, website link, online lecture, online news, or the pictures of any other resources in non-digital form, etc.) they used in playing the role play game to the resource-sharing platform. They were also required to write a small report (i.e. Activity 3) about what their had uploaded, regarding basic introduction, and why they would choose to use it, where and how they found it. The teaching assistant gave comments on students' classroom performance as well as on the resources and information students found and the ways they found them gently and generally. The teaching assistant might also give suggestions on how to improve their performance and their efficiency in finding high-quality resources in the platform.

Week 3 (the second ESC lesson)

Step 1:

When Activity 1 began, students planed on how they should act to develop the plots happened in the last ESC lesson and used their technology devices to gather resources and information in their PLE according to how they wanted the plots to develop. Students discussed among themselves with the organization from their team coordinator to make an agreement on how to develop the plots in general and who should be interacting with whom face-to-face or via the platform in their PLE.

Step 2:

Students appeared in the classroom during the 10 minutes break. Coordinators checked the attendance.

Step 3:

Students performed the ongoing role play game team by team for 8 minutes respectively to act out and play their roles on the basis of last lesson's plot development and their discussion on how to keep developing the plots. The coordinators did narration or coordination work. The NS teacher and the teacher assistant walked around the classroom, maintained the environment and offered help when it was needed.

Step 4:

Students uploaded the resources they used and a reflection report on these resources to the platform by the end of the lesson. The teaching assistant again

commented on their performance or their preparation work in the platform in after-class time.

Week 4 to week 11

The ESC lessons followed the same procedure of week 2 and week 3 until week 11, which was the last lesson for the experiment.

It should be noted that the role of the NS teacher in this experiment was a facilitator. In Activity 2 when the students arrived at the classroom and played the role play game, he would be in the classroom as well and walked around to keep the game going smoothly as well as offered help when necessary. After that, no extra work with the experimental group was needed from the NS teacher during the experiment.

3.6 Data collection procedure

3.6.1 General procedure

The research was conducted in a normal college in China, with two intact classes of student participated in the study and assigned as the experimental group and the control group respectively. The experiment lasted for 11 weeks. It was conducted in the second term of the participants' first academic year in 2018. The main purposes of the study were to investigate the effects of the RILT approach developed to help the ESC in Chinese higher education, to examine the development of students' sense of learner autonomy during the experiment, and to explore students and teacher's

perceptions of the RILT intervention.

The researcher had conducted a problem analysis in Qingyuan Polytechnic in an attempt to find out what might be missing and what could be done to improve the effectiveness and efficiency of the ESC. Based on the problem analysis and a review of related literature, the RILT approach to the ESC was developed. At the same time, a 11-week quasi-experimental design was constructed to examine the effects of the newly developed approach. In order to test the feasibility and manageability of the approach, a 2-week pilot study was conducted. Students' performance during the pilot study was observed and analyzed. The result showed that it was generally practical and manageable to implement the study plan and design under the current context of the ESC in Qingyuan Polytechnic. Nonetheless, some revisions were still needed and eventually made to increase the feasibility and manageability of the experiment.

After that, students in the experimental group signed the consent form for participating in the experiment. When the consent forms were collected, the pretest and pre-experiment questionnaire concerning learner autonomy were administrated to both the experimental group and the control group. Then, the RILT intervention was conducted to the experimental group. When the intervention was completed, the posttest and post-experiment questionnaire concerning learner autonomy were administrated to both the experimental group and the control group. Finally, the questionnaire and semi-structured interview concerning students' perceptions of the

RILT approach were administrated to the experimental group. Meanwhile, a semi-structured interview concerning the NS teacher's perceptions of the RILT approach was administrated as well. During the pedagogy intervention, the researcher took the role of teaching assistant to observe the classroom situations of the experimental group and the control group as well as collect qualitative data from the resource-sharing platform.

3.6.2 Specific procedure

3.6.2.1 Pretest for English-speaking proficiency:

In order to record students' level of English-speaking proficiency and find out whether there was a significant difference between the two groups' English-speaking proficiency before the experiment, a pretest was administered to both the experimental group and the control group before the intervention was conducted.

3.6.2.2 Questionnaire for learner autonomy:

After the pretest, students of the experimental group and the control group were given a questionnaire to fill in for measuring their sense of learner autonomy before the intervention. The questionnaire was written on paper and administered to the students in the classroom.

3.6.2.3 Observation field note:

During the 11 weeks' experiment, the researcher applied the role of teaching assistant to observe students' performance and took down field notes as one kind of qualitative data to analyze students' process of acceptance and adaptation to the

intervention. This might be helpful for the researcher to understand and interpret students' perceptions of the RILT approach better. Moreover, this could also be helpful for the researcher to discuss the effects of the new approach and difference between the experimental group and the control group.

3.6.2.4 Posttest for English-speaking proficiency:

After 11 weeks of intervention, the experiment was ended. A posttest for English-speaking proficiency was administered to both the experimental group and the control group to check, after 11 weeks' teaching and learning, whether the students of each group had improved their English-speaking proficiency and whether there was a significant difference between the achievements of the two groups.

3.6.2.5 Questionnaires:

After administration of posttest, the questionnaire regarding students' perceptions of the experiment was administered to the experimental group exclusively. Nonetheless, the questionnaire regarding students' sense of learner autonomy was administered to both the experimental group and the control group.

3.6.2.6 Semi-structured interview:

When the questionnaires were returned, the researcher conducted semi-structured interviews with 13 students selected randomly from the experimental group regarding their perceptions of the new approach, and their sense of learner autonomy development. Meanwhile, a semi-structured interview with the NS teacher

was conducted to gather information about his perceptions of the experiment.

3.6.2.7 Resource sharing platform:

The researcher collected the resources students uploaded and the accompanied reflection report every week as soon as the students finished uploading. At the same time, the chat and discussion histories in the platform were collected too. The uploaded resources, reflection reports, and chat histories would be used to analyze students' reactions to the intervention and the development of their sense of learner autonomy qualitatively.

3.7 Data analysis

As mentioned earlier, the current study applied a mixed methods approach for data collection. Accordingly, there were both quantitative data and qualitative data. The data collected from pretest, posttest, and the questionnaires were quantitative data. The data collected from semi-structured interviews, observation field notes, and resource-sharing platform were qualitative data. In this section, different methods to analyze quantitative data and qualitative data are presented respectively.

3.7.1 Quantitative data analysis

3.7.1.1 Independent samples t-test

Independent samples t-test was used to analyze whether there was a statistically significant difference between the pretest/posttest scores of the

experimental group and the control group.

3.7.1.2 Paired samples t-test

Paired samples t-test was used to analyze whether there was a statistically significant difference between the mean scores of each group's pretest and posttest. In that case, it enabled the researcher to analyze the effects of the RILT intervention in improving students' English-speaking proficiency comparing to the traditional teaching. Moreover, the scores from questionnaire regarding the students' sense of learner autonomy before and after the intervention for each of the groups were analyzed using a paired samples t-test as well, to see whether the intervention had effects on the development of students' sense of learner autonomy.

3.7.1.3 Descriptive statistics

Descriptive statistics were used to describe and summarize the basic features of the data through the use of mean score, standard deviation, and frequency distribution, etc. In so doing, the researcher might be able to have a better overview of the distribution of students' scores. In the current study, SPSS was used to conduct descriptive statistics for the questionnaires, pretest, and posttest.

3.7.2 Qualitative data analysis

Qualitative research is a more subjective way of looking at things and exploring issues compared to quantitative research. The data from semi-structured interviews, observations, and resource-sharing platform were analyzed in a qualitative

manner to provide an in-depth interpretation. During the process of analyzing these data, thematic analysis and the coding techniques were used. Since the interviews were conducted in Chinese, in order to decrease the risk of being bias or misinterpreting during the process of translating the interpretation into English, the researcher confirmed some of the interpretation with the interviewees whenever there was a chance of uncertainty.

3.8 Summary

This chapter presented the research design, research context, and participants in both the experimental group and the control group. After that, variables, and instruments for the study, along with pedagogic procedure, data collection procedure and data analysis methods were presented as well. In the following chapter, the qualitative findings and quantitative results will be presented along with the discussions as well as answers concerning the four research questions.

CHAPTER 4

RESULTS AND DISCUSSION

This chapter reports the research findings of the study in response to the research questions. In order to answer the research questions in a straightforward and lucid manner, the discussions of the findings are presented together in this chapter as well. The chapter will be organized into four sections on the basis of the four research questions. The results and discussion of the pretest and posttest regarding students' English-speaking skills will be presented in the first section. The results and discussion regarding students' sense of learner autonomy will be presented in the second section. The third section and the fourth section will be the results and discussions regarding students and the teacher's perceptions of the experiment, respectively.

4.1 Results regarding research question 1

To answer research question 1 "Is there a significant difference between the experimental group and the control group in terms of English-speaking proficiency after the experiment?" a pretest (see Appendix D) and a posttest (see Appendix E) of English-speaking proficiency were developed based on the format of IELTS speaking test. The two tests were verified by five experts in the field of foreign language education in

China to make sure that they have homogeneous levels of difficulty. The pretest was administered before the experiment to the experimental group and the control group while the posttest was administered after the experiment. As mentioned in Section 3.4.1 in chapter 3, two raters were given the same rubric (See Appendix P) with a full score of 100 points to rate the tests. The rubric was developed on the basis of IELTS' band descriptors for English-speaking. It consisted of four elements of speaking, namely fluency and coherence, lexical resource, grammar range and accuracy, and pronunciation. Each element took up 25 points, therefore the full score of the test was 100 points. This section presents the results of descriptive statistics and inferential statistics of the pretest and posttest scores.

4.1.1 Inter-rater reliability

There were two raters selected to rate the pretest and posttest for the current study. One is the Native Speaker of English (NS) teacher (Rater A) who was responsible for the English-Speaking Course (ESC) for both the experimental group and the control group. The other is an experienced Chinese teacher (Rater B) responsible for the "Histories and Cultures of English-Speaking Countries" course for other classes (neither the experimental group nor the control group). They rated the test recordings independently without knowing the names of the test-takers they were rating. When the rating was done, the researcher conducted an Intraclass Correlation Coefficient (ICC) to check the inter-rater reliability between the scores rated by Rater A and Rater B. The

output from SPSS shows an ICC of 0.978 in single measures between the pretest scores rated by Rater A and Rater B, while an ICC of 0.956 in single measures between the posttest scores rated by Rater A and Rater B. In social sciences, ICC > 0.72 is considered adequate reliability while ICC >0.80 is considered good reliability. As a result, the scores from two raters were considered to have good reliability in single measures. The pretest and posttest scores given by Rater B were used in the current study since she was not connected with the participants in the current study while Rater A did (There was a possibility that Rater A might recognize the students by their voices).

4.1.2 Results of the pretest

4.1.2.1 Normality test

As mentioned earlier, the full score of the tests is 100 points with each of the four elements (fluency and coherence, lexical resource, grammar range and accuracy, pronunciation) taking up 25 points respectively. Before parametric tests, normality tests were executed in SPSS in order to have an overview of the general scores of the pretest of the experimental group and the control group, meanwhile, to check whether the scores were distributed normally. According to Figure 4.1 and Figure 4.2, a Shapiro-Wilk's test (Razali & Wah, 2011) for the pretest scores of the experimental group (p=0.317) and the control group (p=0.289) show that both of the two groups' pretest scores are approximately normally distributed.

Test of normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
preexperimental	.102	42	.200*	.969	42	.317

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Figure 4.1 Test of normality for pretest scores of the experimental group

Test of normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
precontrol	.112	43	.200*	.969	43	.289

a. Lilliefors Significance Correlation

*. This is a lower bound of true significance.

Figure 4.2 Test of normality for pretest scores of the control group

Besides the Shapiro-Wilk's tests, normal Q-Q plots for the experimental group and the control group also indicate that the pretest scores of the experimental group and the control group are approximately normally distributed. It can be seen from Figure 4.3 and Figure 4.4 that the dots in the normal Q-Q plots of pretest scores for the experimental group and the control group are both normally distributed.

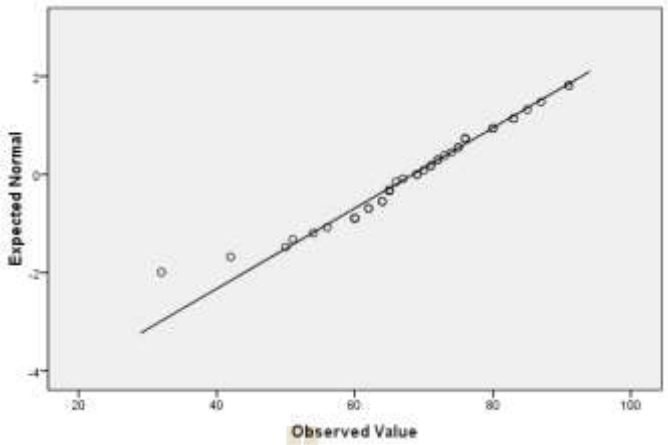

Figure 4.3 Normal Q-Q plot of pretest scores for the experimental group

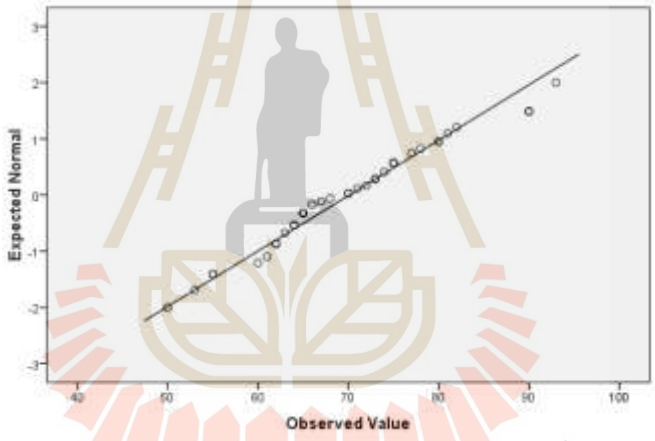

Figure 4.4 Normal Q-Q plot of pretest scores for the control group

4.1.2.2 Independent samples t-test

Since the normality tests made sure that the pretest scores for both the experimental group and the control group are approximately normally distributed, a two-tailed independent samples t-test was then performed to check whether there was a statistically significant difference between the pretest scores of the two groups. It

turned out that the means of the two groups' pretest scores were not significantly different with a p-value higher than 0.05 (p=0.490). In other words, the scores of the experimental group and the control group's pretest were statistically homogeneous. It was not surprising since the experimental group and the control group were two intact classes of first-year students studying the same major. They had a similar background of English as a Foreign Language (EFL) education. They took the same courses which mostly taught by the same teachers. They were all enrolled in academic year 2017 then divided into different classes based on their English scores in College Entrance Examination. They were divided in this way just to make sure that all the classes under the same major were homogeneous academically at the beginning.

It can be seen from Table 4.1 that the experimental group had a mean score ($\bar{x}$=68.42) lower than that of the control group ($\bar{x}$=70.11) in the pretest. Moreover, it is clear from the table that the scores of the control group (SD=10.137, Range=43) were closer to the mean than that of the experimental group (SD=12.213, Range=59). In other words, the general scores of the experimental group had greater dispersion than the scores of the control group. This is to say that students' pretest scores in the control group were more stable, predictable, and more regularly distributed along with the mean score than that in the experimental group before the experiment.

Table 4.1 Descriptive statistics of the general scores of the pretest

	$\bar{x}$	SD	N	Skewness	Kurtosis	Range
Experimental group	68.42	12.213	42	-0.569	1.080	59
Control group	70.11	10.137	43	0.388	-0.096	43

Below Table 4.2 presents the mean score of each specific element of speaking in the pretest. With a full score of 25 for each element, both the experimental group ($\bar{x}$=18.47) and the control group ($\bar{x}$=18.88) had their best performance in grammar range and accuracy. It was not surprising since EFL education in China has always been test-dominant since the early 1980s when English was made a compulsory subject in the national college entrance examination. As a result, the grammar-translation method has been used as the main teaching method through primary school to college over the last few decades. Consequently, both the experimental group and the control group performed best in grammar range and accuracy.

Table 4.2 Descriptive statistics of the specific scores of the pretest

	Specific Score Mean			
	Fluency and coherence	Lexical resource	Grammar range and accuracy	Pronunciation
Experimental group (N=42)	16.54	16.80	18.47	16.59
Control group (N=43)	17.20	16.86	18.88	17.16

Besides the best performance in grammar range and accuracy, the experimental group had its second-best performance in lexical resource ($\bar{x}$=16.80),

then pronunciation ($\bar{x}$=16.59), the worst performance in fluency and coherence ($\bar{x}$=16.54). The results conform to the main instances among the majority Chinese students. The control group, however, had its second-best performance in fluency and coherence ($\bar{x}$=17.20), then pronunciation ($\bar{x}$=17.16), and the worst in lexical resource (M=16.86)

It was a little unexpected since vocabulary is another main focus in EFL education in China. Students and teachers tend to judge one's English proficiency by the amount of vocabulary he/she has memorized. Most students and teachers consider memorizing English vocabulary as an effective method to learn English. In the current study, students in the experimental group and the control group were once required to memorize vocabulary that was specifically extracted for College English Test Band 4 (CET4). Consequently, students in the control group were supposed to perform better in lexical resource than the rest two items like the experimental group did. However, the results surprised the researcher a little. It indicates that the way majority Chinese students memorize vocabulary (mostly wordlist without context) might not necessarily lead to better lexical resource in oral communication.

4.1.3 Results of the Posttest

4.1.3.1 Normality test

Same as scores in the pretest, scores in the posttest for both the experimental group and the control group were firstly analyzed by normality tests to

provide an overview of the scores and check whether they were normally distributed. According to Figure 4.5 and Figure 4.6, the Shapiro-Wilk's tests show that the p-values of posttest scores for the experimental group (p=0.196) and the control group (p=0.330) are both larger than 0.05, indicating that posttest scores of the two groups are approximately normally distributed.

Test of normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
postexperimental	.121	42	.127	.963	42	.196

a. Lilliefors Significance Correction

Figure 4.5 Test of normality for posttest scores of the experimental group

Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
postcontrol	.085	43	.200*	.971	43	.330

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Figure 4.6 Test of normality for posttest scores of the control group

Figure 4.7 and Figure 4.8 are visual inspections of normal Q-Q plots of the posttest scores for the experimental group and the control group respectively. It could be seen clearly that the dots in the two plots are normally distributed along with the straight line. Since the normality tests indicate that the posttest scores for both the experimental group and the control group follow a normal distribution, t-tests are suitable for the current study to analyze the scores of the pretest and posttest for the two groups.

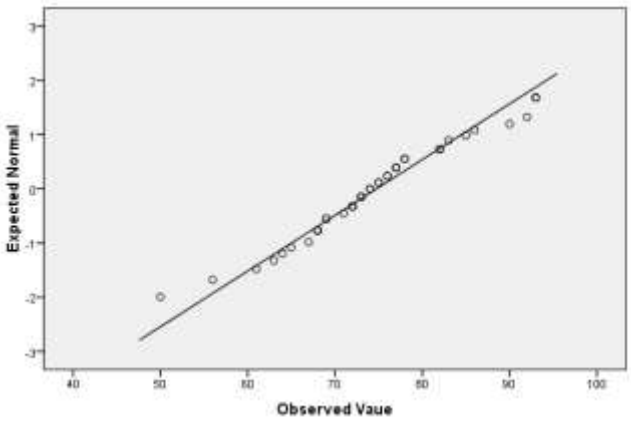

Figure 4.7 Normal Q-Q plot of posttest scores for the experimental group

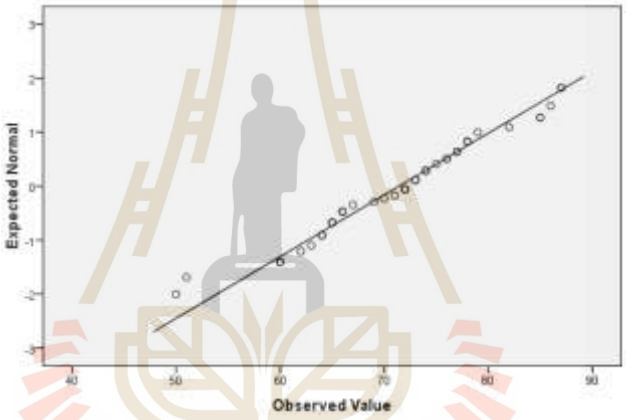

Figure 4.8 Normal Q-Q plot of posttest scores for the control group

4.1.3.2 Independent samples t-test

After the normality tests, A two-tailed independent samples t-test was performed to check whether there was a statistically significant difference between the posttest scores of the experimental group and the control group. Table 4.3 presents descriptive statistics of the posttest scores. According to the table, the mean of the experimental group was 75.35 whereas the control group 71.41. With a p-value lower than 0.05 (p=0.043) from the SPSS output, the experimental group's mean was

significantly higher than the control group's mean. In other words, the experimental group outperformed the control group after 11 weeks of pedagogic intervention under the Rhizomatic and Information Literacy Training (RILT) approach.

Table 4.3 Descriptive Statistics of the general scores of the posttest

Groups	$\bar{x}$	SD	N	Skewness	Kurtosis	Range
Experimental group	75.35	8.911	42	0.367	-0.101	37
Control group	71.41	8.745	43	-0.244	0.079	37

The standard deviation of the experimental group (SD=8.911) was slightly higher than that of the control group (SD=8.745), but lower than its standard deviation in the pretest (SD=12.213). It indicates that the dispersion of the experimental group's posttest scores was larger than that of the control group, but not as great as the situation in the pretest. This means that after 11 weeks of pedagogic intervention, the scores of the experimental group became more stable, consistent, and regularly distributed along with the mean score. The same is true of the control group, whose standard deviation decreased 1.392 from the pretest (SD=10.137) to the posttest (SD=8.745). Similarly, it indicates that the scores of the control group became more stable, consistent and regularly distributed along with the mean score, although the improvement was not as great as the experimental group.

This might be the reason that during the experiment, students in the experimental group had more comparatively equal chances to speak English in the ESC

lessons than that in the control group. Students in the experimental group were separated into four teams to act out their roles by speaking English in the role play game section. Consisting of 10 to 11 students, each team had about 8 minutes to perform the role play game. When each team performed, every of the team members spoke English with different pre-decided counterparts, which enabled them to make the most of the 8 minutes. It was estimated that each student in the experimental group spoke at least 6 to 7 minutes English in every ESC lesson. The control group, however, only a few active students strived to speak as much as they could and some of the students spoke when they were asked to. The rest of the students tended to keep silent either because of their shyness, lack of confidence, anxiety in speaking English, or their lack of interest in the activities, etc.

Below Table 4.4 presents the mean score of each specific element of speaking in the posttest. According to the table, both the experimental group ($\bar{x}$=19.76) and the control group ($\bar{x}$=18.55) had their best performance in grammar range and accuracy. Moreover, both the experimental group ($\bar{x}$=19.11) and the control group ($\bar{x}$=18.09) had their second-best performance in fluency and coherence. Meanwhile, the two groups' worst performance was in lexical resource with a mean score of 18.02 for the experimental group and a mean score of 17.37 for the control group. Even though the scores were higher than than of the pretest, the weak status of lexical resource was somehow consistent with the findings in the pretest, which further

suggests that Chinese students might not be able to use vocabulary in communication as much as they can memorize. As for the pronunciation, the experimental group had a mean score of 18.45 while the control group was 17.39.

Table 4.4 Descriptive statistics of the specific scores of the posttest

	Specific Score Mean			
	Fluency and coherence	Lexical resource	Grammar range and accuracy	Pronunciation
Experimental group (N=42)	19.11	18.02	19.76	18.45
Control group (N=43)	18.09	17.37	18.55	17.39

4.1.3.3 Paired samples t-test

Besides the independent samples t-test, paired samples t-tests were conducted in SPSS to analyze whether a statistically significant difference existed between the mean scores of the pretest and the posttest for the experimental group and the control group respectively. The main statistics of the tests are shown in Table 4.5, Table 4.6, and Table 4.7. According to Table 4.5, the experimental group's mean score had increased 6.92 points from the pretest to the posttest, whereas the control group had increased 1.30 points. There was a statistically significant difference between pretest scores and posttest scores for the experimental group with $t(41)=-6.377$, $p=0.000(<0.05)$, indicating that the experimental group's performance improved significantly from the pretest ($\bar{x}=68.41$, $SD=12.213$) to the posttest ($\bar{x}=75.35$, $SD=8.911$). As for the control group, however, there was no significant difference

between pretest scores ($\bar{x}$=70.11, SD=10.137) and posttest scores ($\bar{x}$=71.41, SD=8.745) with t (42) =-1.735, p=0.090 (>0.05). It can be said that there was no significant improvement for the control group within the 11 weeks.

Table 4.5 Paired Samples T-test of the general scores

Groups	**Tests**	**Paired Differences**				**t**	**df**	**Sig. (2-tailed)**
		$\bar{x}$	SD	95%Confidence Interval of the Difference				
				Lower	Upper			
Experimental group	Pretest-Posttest	- 6.92	7.035	- 9.115	- 4.730	- 6.377	41	0.000
Control group	Pretest-Posttest	- 1.30	4.920	- 2.816	- 0.212	- 1.735	42	0.090

Table 4.6 presents the results of paired samples t-test for each of the four elements of speaking in the pretest and posttest for the experimental group. As shown in the table, the experimental group had increased 2.57 points in fluency and coherence from the pretest to the posttest, 1.21 points in lexical resource, 1.28 points in grammar range and accuracy, and 1.85 points in pronunciation. With a p-value lower than 0.05, the experimental group had improved significantly in speaking fluency and coherence (p=0.000) after the experiment. Moreover, the experimental group also improved significantly in lexical resource (p=0.000), grammar range and accuracy (p=0.000), and pronunciation (p=0.000).

Table 4.6 Paired Samples T-test of specific items for the experimental group

Items	Tests	Paired Differences		t	df	Sig. (2-tailed)
		$\bar{x}$	SD			
Fluency and coherence	Pretest-Posttest	-2.57	1.939	- 8.591	41	0.000
Lexical resource	Pretest-Posttest	-1.21	1.600	-4.916	41	0.000
Grammar range and accuracy	Pretest-Posttest	-1.28	2.200	-3.786	41	0.000
Pronunciation	Pretest-Posttest	- 1.85	2.113	-5.695	41	0.000

Table 4.7 presents the results of paired samples t-test for each of the four elements of speaking in the pretest and the posttest for the control group. According to the table, students in the control group had increased 0.88 points in speaking fluency and coherence from the pretest to the posttest, 0.51 points in lexical resource, 0.23 points in pronunciation, and decreased 0.32 points in grammar range and accuracy. With a p-value lower than 0.05, students in the control group had improved significantly in speaking fluency and coherence (p=0.002) and lexical resource (p=0.003) after the experiment. However, with a p-value higher than 0.05, they did not achieve significant improvement in grammar range and accuracy (p=0.099) and pronunciation (p=0.333).

The difference between the improvement of the experimental group and the control group in terms of the four specific elements indicates that the RILT intervention helped students improve their English-speaking skills in a more

comprehensive manner. It might be the reason that the students in the experimental group got substantial exposure to various English language input through the Internet in every ESC lesson so that they learned or acquired different percentages of the input consciously or subconsciously. In the control group, however, the American teacher was the main (mostly only) English language input for the students so that the students might not have diverse and sufficient language input as the experimental group did. Moreover, native-speaker languag teachers tend to focus more on the communicative purpose of the target language and less on grammar range and accuracy or pronunciation. As a teacher-centered classroom taught by NS teacher, students in the control group might follow the NS teacher's lead and focus less on grammar.

Table 4.7 Paired Samples T-test of specific items for the control group

Items	**Tests**	**Paired Differences**		**t**	**df**	**Sig. (2-tailed)**
		$\bar{x}$	**SD**			
Fluency and coherence	Pretest-Posttest	-0.88	1.721	-3.367	42	0.002
Lexical Resource	Pretest-Posttest	-0.51	1.077	-3.114	42	0.003
Grammar range and accuracy	Pretest-Posttest	0.32	1.267	1.685	42	0.099
Pronunciation	Pretest-Posttest	-0.23	1.555	-0.980	42	0.333

4.1.4 Answer and discussion regarding research question 1: Is there a significant difference between the experimental group and the control group in terms of English-

speaking skills after the experiment?

The above results clearly answer the research question. There was a significant difference between the experimental group and the control group in terms of English-speaking proficiency after the experiment. The mean score in the posttest of the experimental group was significantly higher than that of the control group. Moreover, the experimental group increased their scores significantly after the 11 weeks' pedagogy intervention while the control groups did not. As for the specific scores, the experimental group increased significantly in terms of English-speaking fluency and coherence, lexical resource, grammar range and accuracy, and pronunciation. The control group, however, increased significantly in English-speaking fluency and coherence and lexical resource, but not in grammar range and accuracy and pronunciation. In conclusion, after 11 weeks of pedagogic intervention, the experimental group with significant improvement outperformed the control group in terms of English-speaking skills in general.

As described in Section 2.5 in chapter 2, the design of the three activities in each ESC lesson for the experimental group was theoretically underpinned by the structure of Rhizomatic learning and some main arguments from Constructivism view of learning. The main arguments used to guide this experiment were that knowledge is an evolving target that can only be negotiated, compared, judged, and valued (Lian, 2004; Lian, 2011; Bozkurt et al., 2016); learning happens when learners' mental

disequilibrium, or epistemic conflict, was fully elicited (Piaget, 1952); contextual and collaborative learning experience is a social and personal knowledge creation or a process of meaning-making (Lian, 2004). Based on these principles and arguments, the experiment tried to create an environment in which sequential activities were used for achieving teaching and learning objectives, different learner needs and interests were respected. As a result, the Personal Learning Environment (PLE) featuring autonomous learning with technology devices and information literacy skills was designed as Activity 1, meanwhile, the ongoing role play game providing an environment for students' meaningful interaction in English was designed as Activity 2. To be more specific, the environment in Activity 2 was filled with evolving and ongoing simulated circumstances for the students to solve problems and achieve learning objectives by role playing and communicating in English.

In fact, the design of the ongoing role play game was not only based on the above-mentioned principles and arguments but also the consideration of Chinese students' collectivism characteristics. As mentioned, the design separated the students into four teams throughout the whole experiment and made sure that each student spoke English for a comparatively equal amount of time. The fact that they were driven by the collectivism thinking which was nurtured in the environment they grew up, making them fear of dragging their teammates back and losing their face, made them more serious about the role play game and the ESC lessons. According to the interviews,

realizing that they would need to perform and speak English in front of their classmates and teacher, all the students in the experimental group tried their best to prepare and perform in the hope of not losing face or dragging their teammates back, some even hoping to impress the class. In this case, no one single student was left behind remaining in silence with the excuse of shyness, anxiety, or incompetency, etc. Driven by a sense of collective honor, the students tried hard to play their role well and interact with their teammates as they preplanned.

Although some students indicated that they felt tension in playing the ongoing role play game, they also indicated that they appreciated this feeling of tension which pushed them to learn more and learn faster. This supports DeNeve and Heppner (1997)'s argument which claimes that the application of serious games in higher education is effective in engaging students in a complex problem-solving environment that simulates real-world situations. Given some time, the students gradually engaged themselves in this simulated environment and started to appreciate and enjoy it. It is also consistent with Tan (2016)'s suggestion that the implementation of Communicative Language Teaching (CLT) approach in China under the current educational context will be difficult and time-consuming, but it is feasible and worth the effort. By applying serious games like the ongoing role play game in the current study to implement CLT, no constraints or risks of the real world would be brought to the students.

According to the activity design, students in the experimental group were

separated into 4 teams to play the role play game, therefore, refered as Team A, Team B, Team C, and Team D respectively. To further explain how the 'ongoing' role play game worked, a summary of the main plots Team A and Team B had for the game from lesson 1 to lesson 4 was demonstrated in the below Table 4.8. The summary was made on the basis of the researcher's observation field notes (see Appendix Q for the full version).

Table 4.8 Summary of the topics of the role play game

	Team A (N=11)	**Team B (N=11)**
Roles	HRs in different companies; job applicants for different positions with different backgrounds	Moderator/MC; judges; different student participants with different backgrounds; teacher audiences; parent audiences
Lesson 1	**Starting scene:** On-campus job fair; **Main plots:** HRs interviewed applicants; applicants shared the experience with one another, etc.	**Starting scene:** CV design contest; **Main plots:** Participants presented their CVs; parents encouraged their children; teachers gave advice; moderator hosted the competition
Lesson 2	**Continued plots:** HRs informed the interview results; successful applicants started to work; failed applicants revised CVs and tried other companies	**Continued plots:** Judges commented on the presentation; the moderator announced the results for the first round; participants who reached the final celebrated with their parents and teachers
Lesson 3	**Continued plots:** HRs hosted welcome parties for new employees; failed applicants went to other interviews	**Continued plots:** Participants presented in the final; judges commented on the performance; parents socialized with teachers

	Team A (N=11)	Team B (N=11)
Lesson 4	**Continued plots:** New employees made friends with colleges; HR tried to develop incentive systems to encourage the employees	**Continued plots:** Participants became friends and came back to school life; parents discussed their children's education; teachers made teaching plans

Besides the ongoing role play game during which students actually spoke English, the other two activities also helped them with their English-speaking skills in different ways. Unlike the ongoing role play game, the Information Literacy Training (ILT) practice in Activity 1 as well as the small report in Activity 3 helped achieve the course objectives and optimize classroom effectiveness indirectly as well as enabled long-term, better learning. Theoretically, Activity 1 covered different aspects that promote effective and autonomous learning, including cognitive aspects (finding and knowing different learning materials and information); metacognitive aspects (evaluating and selecting learning materials and information); and affective aspects (finding learning materials and information based on their own interests and motivation). Activity 2 (the ongoing role play game) covered the action-oriented aspects which made sure every student actually spoke English for a comparatively equal amount of time. Activity 3 (reflection report) was in fact a reflection on mostly Activity 1 and partially Activity 2, designed in an attempt to let the students see a big picture of the whole set of ESC lessons and their performance in each lesson clearly to provide them the opportunity to improve lesson by lesson. Adding the fact that the three

activities all set the students free to different extents so that they could have a room to learn autonomously and develop their own intrinsic motivation gradually. These all counted for students' improvement in terms of English-speaking skills.

4.2 Results regarding research question 2

In order to answer research question 2 "Is the students' sense of learner autonomy strengthened after exposure to the new approach? If yes, in what ways?" a questionnaire (see Appendix A) was constructed to evaluate students' levels of agreement on the questions regarding learner autonomy. However, a closed-ended questionnaire has intrinsic limitations which render it incapable of gathering in-depth information from the respondents (Saris & Gallhofer, 2007). To offset the limitation of the closed-ended questionnaire, questions related to the development of learner autonomy during the experiment were embedded in semi-structured interviews for students' perceptions of the experiment (see Appendix H).

4.2.1 Results of questionnaire for learner autonomy

The questionnaire for students' sense of learner autonomy was administered to the experimental group and the control group twice. The first administration was done before the experiment and the second was done after the experiment. The questionnaire consisted of two parts with part one investigating students' general information such as students' self-perception of their levels of English-speaking

proficiency, their time spent in learning English-speaking skills each week, and their time spent in surfing the Internet each day. Part two used 5-point Likert-scale questions ranging from strongly disagree, disagree, undecided, agree, to strongly agree, to make clear distinctions between students' levels of agreement on the statements about learner autonomy. In scoring students' responses, 1 point was assigned to strongly disagree, 2 to disagree, 3 to undecided, 4 to agree, and 5 to strongly agree. A higher score indicated stronger agreement students had on the corresponding item. A total full score of the 10 items in the scale was 50 points.

4.2.1.1 Results of students' general information

Table 4.9 presents the results of students' general information in the questionnaire before and after the experiment for the experimental group. According to the table, before the experiment, 40.48% of the students in the experimental group perceived their levels of English-speaking proficiency as medium, 33.33% not sure, 14.29% high, and 11.90% low. After the experiment, 50.00% of the students perceived their level of English-speaking proficiency as medium, 21.43% not sure, 16.67% high, and 11.90% low. With a higher percentage of students perceived their level of English-speaking proficiency as high or medium, a lower percentage of students felt not sure, it indicates that the experiment might have made more students become confident in their English-speaking proficiency.

Table 4.9 Results of students' general information for the experimental group

The experimental group	Before the experiment	After the experiment
Students' self-perception of their levels of English-speaking skills	40.48% medium; 33.33% not sure; 14.29% high; 11.90% low	50.00% medium; 21.43% not sure; 16.67% high; 11.90% low
Students' time spent in learning/practicing English-speaking per week (hours)	$\bar{x}$=1.84	$\bar{x}$=3.02
Students' time spent in surfing the Internet each day (hours)	$\bar{x}$=4.19	$\bar{x}$=3.97

Table 4.10 presents the results of students' general information in the questionnaire before and after the experiment for the control group. According to the table, before the experiment, 51.16% of the students in the control group perceived their levels of English-speaking proficiency as medium, 25.58% not sure, 16.38% high, and 6.98% low. After the experiment, 44.19% of the students in the control group perceived their level of English-speaking proficiency as medium, 30.23% not sure, 20.93% high, and 4.65% low. It indicates that after 11 weeks' traditional ESC lessons, a higher percentage of students in the control group felt not sure about their level of English-speaking proficiency. Similarly, a higher percentage of students in the control group considered their levels of English-speaking proficiency as high after 11 weeks' teaching and learning in the traditional ESC classroom. It indicated the 11 weeks of traditional ESC lessons might also make more students in the control group feel confident in their English-speaking skills.

Table 4.10 Results of students' general information for the control group

The control group	Before the experiment	After the experiment
Students' self-perception of their levels of English-speaking skills	51.16% medium; 25.58% not sure; 16.38% high; 6.98% low	44.19% medium; 30.23% not sure; 20.93% high; 4.65% low
Students' time spent in learning/practicing English-speaking per week (hours)	$\bar{x}$=1.71	$\bar{x}$=2.21
Students' time spent in surfing the Internet each day(hours)	$\bar{x}$=4.47	$\bar{x}$=4.22

According to Table 4.9, the time students in the experimental group spent in learning or practicing English-speaking skills per week was 1.84h on average ($\bar{x}$=1.84, N=42) before the experiment and 3.02h after the experiment ($\bar{x}$=3.02, N=42). The time they spent in surfing the Internet per day was 4.19h on average ($\bar{x}$=4.19, N=42) before the experiment and 3.97h after the experiment ($\bar{x}$=3.97, N=42). According to Table 4.10, the time students in the control group spent in learning or practicing English-speaking skills per week was 1.71h on average ($\bar{x}$=1.71, N=41) before the experiment and 2.21h after the experiment ($\bar{x}$=2.21, N=43). The time they spent in surfing the Internet per day was 4.47h on average ($\bar{x}$=4.47, N=43) before the experiment, and 4.22h after the experiment ($\bar{x}$=4.22, N=43).

Both the experimental group and the control group had increased their time investment on learning or practicing English-speaking skills and decreased their time investment on surfing the Internet during the 11 weeks. Students from the

experimental group increased their time in learning or practicing English-speaking skills from 1.84h to 3.02h and decreased their time spent in surfing the Internet from 4.19h to 3.97h. Students from the control group increased their time in learning or practicing English-speaking skills from 1.71h to 2.21h and decreased their time spent in surfing the Internet from 4.47h to 4.22h. The experimental group had greater improvement on time investment on learning or practicing English-speaking skills than the control group. As described earlier, the time duration of each ESC lesson for the two groups were the same, and no homework after the class for both of them. It could be said that either it was the intervention that made the experimental group more autonomous and motivated to learn or practice English-speaking skills, or the intervention was challenging enough to unintentionally make the experimental group spend more time on relevant English-speaking skills learning or practicing.

4.2.1.2 Results of 5-point Likert-scale questions

Part two of the questionnaire consisted of 10 5-point Likert-scale questions designed to elicit students' levels of agreement on each item regarding students' sense of learner autonomy. Data collected from the scale before and after the experiment were analyzed quantitatively. In order to compare the mean scores of students' levels of learner autonomy between the experimental group and the control group and between each group's scores before and after the experiment, independent samples t-test and paired samples t-test were used respectively.

The data collected from the scale administered before the experiment showed that there was no significant difference between the means for the experimental group ($\bar{x}$=31.80, SD=2.839) and the control group ($\bar{x}$=31.97, SD=1.854) with a p-value higher than 0.05 (p=0.779). The data collected from the scale administered after the experiment showed that there was a statistically significant difference between the means for the experimental group (($\bar{x}$=35.50, SD=2.432) and the control group ($\bar{x}$=33.02, SD=3.474) with a p-value lower than 0.05 (p=000). This is to say that students in the two groups had homogeneous levels of learner autonomy before the experiment. After the experiment, however, students in the experimental group had a level of learner autonomy that was significantly higher than students in the control group.

Paired samples t-test was performed to compare the total scores of students' learner autonomy before and after the experiment for each of the groups. According to Table 4.11, the results showed that there was a significant difference between the mean scores of students' learner autonomy before the experiment and after the experiment for the experimental group (p=.000, t(41)=-6.387). This is to say that the students in the experimental group had improved their sense of learner autonomy significantly after 11 weeks of pedagogic intervention. As for the control group, there was no significant difference between the mean scores of students' learner autonomy before the experiment and after the experiment (p=.066, t(42)=-1.887). In other words,

students in the control group did not improve their sense of learner autonomy significantly during the 11 weeks.

Table 4.11 Results of Paired Samples T-test of learner autonomy

Groups	Before experiment - After experiment		t	df	Sig. (2-tailed)
	$\bar{x}$	SD			
Experimental group	-3.69	-3.744	-6.387	41	0.000
Control group	-.627	2.182	-1.887	42	0.066

Table 4.12 presents the descriptive statistics of each item on the 5-point Likert-scale of students' learner autonomy before the experiment and after the experiment for the experimental group. It can be seen from the table that the mean of each item had increased to different extents after the experiment. Especially, the mean of Item 1 concerning students' ability to evaluate their English-speaking skills, had increased greatly from 2.71 points before the experiment to 3.71 points after the experiment. Item 3 concerning students' ability to consult teachers or co-learners to evaluate their proficiency and learning methods concerning English-speaking skills had a mean of 2.61 points before the experiment and 3.11 points after the experiment. These results indicate that after 11 weeks of experiment, students became better at evaluating their proficiency of English-speaking. It might also explain the reason why the findings from students' general information in the questionnaire showed fewer students in the experimental group felt not sure about their level of English-speaking proficiency after

the experiment.

Item 2 concerning students' initiative to practice English-speaking skills with others had increased from 2.83 points before the experiment to 3.50 points after the experiment. The means of Item 7 concerning students' awareness of their own needs in learning English-speaking skills (before $\bar{x}$=3.38, after $\bar{x}$=3.42) and Item 5 concerning their ability to practice English-speaking skills on their own (before $\bar{x}$=3.52, after $\bar{x}$=3.57) had comparatively slight increasement. These all indicate that students' sense of learner autonomy was promoted during the experiment. Moreover, their motivation in learning English-speaking was developed too. Likewise, this could explain the reason why the findings in Part 1 of the questionnaire administrated after the experiment showed that students in the experimental group spent more time in learning or practicing English-speaking each week than they did before the experiment.

As for the other items, they all had different levels of increasement. For example, Item 4 about making study plans for learning English-speaking skills had increased from 3.14 before the experiment to 3.54 after the experiment. Item 6 about students' motivation for learning English-speaking skills increased from 3.54 to 3.64. Item 8 concerning finding strategies to help improve their English-speaking skills increased from 3.69 to 3.88. Item 9 about setting tasks for English-speaking learning increased from 3.21 to 3.47. Item 10 about setting specific goals to learn English-speaking skills increased from 3.14 to 3.64. Most of the items have a mean score higher

than 3.5 points after the experiment except for item 3, item 7, and item 9. That is to say, after the experiment, students' agreements on the 7 items with a mean score higher than 3.5 points were generally high. Moreover, the mean of the total score had increased significantly from 31.80 points (out of 50) before the experiment to 35.50 points (out of 50) after the experiment (p=0.000). This indicates that students in the experimental group had improved their sense of learner autonomy significantly after the pedagogic intervention.

Table 4.12 Descriptive statistics of learner autonomy for the experimental group

Items		N	$\bar{x}$	SD
1. I can autonomously evaluate my English-speaking skills.	Before	42	2.71	0.969
	After	42	3.71	0.708
2. I can practice English-speaking skills with others or my own initiative.	Before	42	2.83	0.695
	After	42	3.50	0.707
3. I can ask teachers or co-learners to evaluate my proficiency and learning methods of English-speaking skills.	Before	42	2.61	0.794
	After	42	3.11	0.739
4. I can make study plans for learning English-speaking skills.	Before	42	3.14	0.783
	After	42	3.54	0.771
5. I can practice English-speaking skills on my own.	Before	42	3.52	0.803
	After	42	3.57	0.737
6. I can recognize my motivation for learning English-speaking skills.	Before	42	3.54	0.802
	After	42	3.64	0.850
7. I am aware of my needs in learning English-speaking skills.	Before	42	3.38	0.696
	After	42	3.42	0.703
8. I can find strategies that are suitable for me to improve English-speaking skills.	Before	42	3.69	0.680
	After	42	3.88	0.670
9. I can set myself tasks to learn English-speaking skills.	Before	42	3.21	0.812
	After	42	3.47	0.772
10. I can set myself specific goals for learning English-speaking skills.	Before	42	3.14	0.925
	After	42	3.64	0.655
Total	Before	42	31.80	2.839
	After	42	35.50	2.432
Valid N	Before	42		
	After	42		

4.2.2 Results of interview questions regarding learner autonomy

A semi-structured interview with 10 leading questions was conducted with 13 students selected randomly from the experimental group to collect in-depth information about students' perceptions of the pedagogic intervention. Among the 10 leading questions, Question number 1 "what do you think of autonomous learning?" and number 7 "From your perspective, what effects the experiment has on you regarding learner autonomy development?" were designed to elicit interviewees' opinions of the effects the intervention had on the development of their sense of learner autonomy. The interviewees were informed that they were free to express their opinions and that their statements in the interview would be used anonymously.

Among the 13 interviewees, 7 considered the experiment as "very helpful" in improving their sense of learner autonomy, 4 considered it as "helpful", whereas 2 considered it as "somewhat helpful". They were then asked to describe in detail their understanding, experience, and feelings concerning learner autonomy during the experiment. One interviewee who reported "very helpful" said "We needed to perform a role play game in each lesson and we were given freedom in the first half of the lesson to use the Internet to learn in any places we liked. As a result, this kind of learning behavior became a habit of mine. I think autonomous learning means that students learn autonomously without requirement or restriction. I spent more time surfing the Internet to find interesting learning materials and make relevant study plans now. I think that

means my sense of learner autonomy had strengthened because of the experiment. I rarely did anything related to learning English-speaking before."

Most of the interviewees who reported "very helpful" or "helpful" held similar opinions. They reported that they spent more time in learning and practicing English-speaking skills or making other kinds of effort in an attempt to improve their English-speaking skills without being required only because they enjoyed the ESC lessons and wanted to perform better in the lessons. Two interviewees mentioned that they thought it was because they had been given freedom to learn in their own ways so that they could become more autonomous learners gradually, quoting one of the interviewee's statements "I think my learner autonomy has improved because now I can do things concerning the ESC lessons without teacher's requirement. I started to find different learning strategies from the Internet and try those seem to be suitable for me. I think it is because I often do this in the ESC lessons, I become used to it."

As for the two interviewees who considered the experiment as "somewhat helpful" in improving their sense of learner autonomy, both reported that they thought they had improved their sense of learner autonomy, but were not sure about how much. One reported that he thought the ESC lessons were more intense so that he had to spend more time and make more preparation after class in case that he couldn't catch up with his teammates during the role play game. The other reported that he was not very clear about what autonomous learning was but he believed that he had become more

autonomous in learning English-speaking skills because during the experiment he often unconsciously did things related to the ESC lessons and English-speaking learning.

4.2.3 Findings from other qualitative data

As clearly illustrated in chapter 3, after finishing the role play game, the students were required to upload the information and resources they found and used to the resource-sharin g platform and to write a reflection report introducing what they had uploaded by the end of each lesson. Students' reflection reports and chat histories in the resource-sharing platform were collected as qualitative data and analyzed thematically.

The chat histories were coded into three themes: "asking and/or confirming information", "preparation and discussion of classroom performance", and "general conversation not related to the lessons". According to the chat histories, students seemed to display a feeling of anxiety in dealing with the new ESC lessons in the beginning, especially in the first and second weeks of the pedagogic intervention. Most of the students often asked their co-learners what they were supposed to do according to the new routines. They also consulted the teacher assistant a lot about how to write the report and what to do in the first half of the lesson and the second half of the lesson respectively, etc. Interestingly, from their conversations, most of them actually knew what they were supposed to be doing in each part of the lesson and how to write the report (the sample was always presented in the platform). They mostly just wanted to

confirm what they thought was right according to some students' statements. This phenomenon indicates that the students were either not confident enough in themselves or not used to having the freedom to take control over their own study, or both.

Below Figure 4.9 displays the chatbox of the resource-sharing platform when students used the computer to communicate among themselves. Figure 4.10 displays the chatbox of the resource-sharing platform when students used mobilephone to communicate among themselves. The two figures are screenshots captured in two different periods via two different devices (computer and mobilephone). The screenshot in Figure 4.9, captured via computer, was part of the conversations that happened one day before the first ESC lesson. The screenshot in Figure 4.10, captured via mobilephone, was part of the conversations that happened right before the second ESC lesson. The reason for using screenshots from two different devices is to demonstrate how the platform functioned as a communication tool in computer and mobilephone respectively.

Figure 4.9 Chatbox of the resource-sharing platform in computer

From the above Figure 4.9, it is shown that before the first ESC lesson, one student named “Lisa” in the chatbox asked his/her classmates questions to confirm whether they needed to attend the classroom for the ESC lesson. Another student named “LHX” answered him/her: “I think teacher said we don’t need to go classroom.” However, when “Lisa” tried to confirm again whether “LHX” was sure about his/her answer, “LHX” indicated uncertainty and suggested “Lisa” to confirm it with the monitor. These conversations indicate that both of the students were not completely sure about what they should do according to the new ESC routines. The reactions from “LHX” indicate that even he/she did hear what the teacher asked them to do. However, he/she ended up less confirmed to what he/she had heard after being questioned again. This indicates that either he/she had a lack of confidence or it was not easy for him/her

to believe in the new routines at the beginning.

The last sentence in the chatbox by another student named “幸:0 福” confirmed that the NS teacher said they did not need to attend the classroom for Activity 1 but they did need to attend the classroom for Activity 2. Based on the chat histories later and the Chinese higher education context, it was clear that “he” in the last sentence by “幸:0 福” referred to the NS teacher, while “no need to go in the first lesson” referred to the description that they could go anywhere for Activity 1 (45mins), “we go in the second lesson” referred to the description that students should attend the classroom for Activity 2 and Activity 3. In general, each lesson in Chinese higher education lasts for 90 minutes. To avoid making students lose concentration due to the long lesson, there is always a regulated 10-minute or 15-minute break in the middle to split the lesson into two halves. In this case, the students often refer to the split two halves as two small lessons. Consequently, it was easy to interpret what “幸:0 福” meant for “the first lesson” (45mins) was Activity 1 (45mins).

Figure 4.10 Chatbox of the resource-sharing platform in mobilephone

From the above Figure 4.10, it is shown that the coordinator in Team A was organizing something with his/her teammates. One of the members in this team sent a sticker saying “I get it” in response to the coordinator. Meanwhile, this member also indicated that she/he was nervous and asked someone to help her/him if she/he failed to speak in the classroom. Based on the context and the whole chat histories that were not captured in Figure 4.10, it is clear that in the second ESC lesson, students had less confusion about the new routines but more discussion on their classroom activities, especially regarding Activity 2, the ongoing role play game.

Week after week, students were getting used to the new routines. The chat concerning asking and/or confirming information became less and less week by week. This indicates that given the freedom for some time, the students were getting better and better at taking the initiative to learn in their own ways. However, the chat concerning the concept "preparation and discussion of classroom performance", referring to students' discussion about their preparation for the role play game they were going to play in the next lesson or their performance in the last lesson, increased its percentage as the weeks went by. The content of the students' discussion in the platform which attempted to develop the plots in the role play game or reflect on each other's performance became more and more diverse, dynamic and interactive, indicating that they became more autonomous learners as they got better and better at planning their own study with their co-learners and without a teacher's supervision.

Besides the changes in chat histories in the resource-sharing platform, students' reflection reports showed similar changes as well. At the first week, all the students uploaded information and resources concerning their assigned roles only. However, the information and resources students uploaded gradually became more and more diverse and detailed, with better quality (from random individuals' products to scholarly papers, authorized universities' public resources, nationally famous teachers' presentation or PPT, etc.). The content of the information and resources they uploaded were no longer limited to something directly related to the corresponding ESC lessons

but more and more about English-speaking learning strategies and methods, future career in relation to English, job interviews in English, etc. This indicates that the students were gradually taking control over what they want to learn and finding their own way to more effective and more efficient learning. These changes reflect the development of learner autonomy among the students in the experimental group.

The researcher's observation field notes reinforce these changes. It was noted that, at the beginning, most of the students arrived in the classroom for Activity 1, which they were supposed to be in somewhere they preferred to locate information and resources to get prepared for the second half of the lesson. Unless their favorite place for learning was the classroom, it seems that they did not fully understand or did not get used to the ideas of autonomous learning and Personal Learning Environment (PLE) at the beginning of the experiment. From the second week on, fewer and fewer students arrived in the classroom for Activity 1. Moreover, they also showed more confidence in playing the ongoing role play game as well as more familiarity with writing the reflection reports. This might suggest that the students were getting familiar with and adapting to the new ESC lessons week by week.

4.2.4 Answer and discussion regarding research question 2: Is the students' sense of learner autonomy strengthened after exposure to the new approach? If yes, in what ways?

From the above findings from the questionnaires, semi-structured interviews,

students' reflection reports, observation field notes, and resource-sharing platform, the answer to research question 2 is positive. Students' sense of learner autonomy strengthened significantly after exposure to the RILT approach for 11 weeks. They became more active and autonomous learners in that they were gradually taking control over their own study, making decisions relevant to their roles in the ESC lessons, developing and adjusting their motivation in learning. As most of the interviewees reported in the interview directly or indirectly, they became more motivated and confident to learn English-speaking skills. Some of them reported that they had done things that were helpful for the ESC lessons after class on their own initiative, which was never happened before. With a strong sense of autonomy and motivation in learning, the students fully engaged themselves in the ESC lessons.

As described in chapter 2, the design of the three activities were underpinned by Constructivist view of learning and Rhizomatic learning structure, at the same time, inspired by Sudbury Valley School (Greenberg, 1985) and Minimally Invasive Education (Mitra, 2005)' core idea of setting students free to do their own learning. Although the context and constraints of Chinese higher education limited the level of freedom could be given to the students, the design of the three activities provided them the chance to learn autonomously to different extents. Moreover, considering that it is now a new era of information overabundance and technology convenience, the design of the three activities intended to train the students basic skills of information literacy

in relation to technology devices. The design of the training lesson on information literacy followed Campbell (2004)'s suggestion to focus on cultivating the students' critical thinking and raising their awareness of information as well as developing their ability to use information and resources at hand appropriately. To do so, a training lesson on basic information literacy skills in technology devices was conducted to raise students' awareness of information and technology convenience. Moreover, Activity 1 as the practice of the training lesson set the students free to collect learning resources and information with their own technology devices as one kind of preparation for the following role play game (Activity 2) in any places they felt comfortable.

In Activity 1, the students not only needed to collect learning resources and information on their own, but also needed to discuss with their teammates to work out some main plots and conversations for Activity 2. In so doing, they were gradually establishing a sense of agreement on their teammates, themselves, and what they were doing. They were gradually forming a sense of responsibility for their own learning as well as getting used to taking control over their own learning. Consequently, their sense of learner autonomy was promoted, and therefore, their motivation in learning English-speaking skills was developed as well. These findings came from a synthesis of the data from the questionnaires, semi-structured interviews, their reflection reports, observation field notes, and chat histories.

As for Activity 3, i.e. the reflection report, which seemed to have no direct

effect on English-speaking skills nor learner autonomy, was in fact an indirect factor that helped them achieve their improvement in English-speaking skills and development of learner autonomy (both by promoting students' sense of learner autonomy through doing self-reflection). First of all, the reports helped the students reflect on what they had done in every ESC lesson's first activity through summarizing and introducing learning resources and information they collected as well as the process of collecting them. By doing so, the students' sense of learner autonomy was gradually promoted in different ways. First of all, the report helped them reflect on the whole process of learning resources and information collection, therefore they could see better at what good and bad they had done during the whole process and how to improve accordingly in the next time. As a result, they became better and better in collecting whatever resources and information through their own technology devices to solve different learning problems at hand. This could release them from the restriction of resources, time, and space for learning, hence promote the possibility for them to learn more effectively, efficiently, and autonomously.

Besides, doing reflection itself helped them practice and strengthen their ability to learn autonomously directly since it is one of the elements that reflects learner autonomy. As Tassinari put in her dynamic model of learner autonomy (Tassinari, 2012), evaluation is one of the foremost components of learner autonomy and the first step in the evaluation process is eliciting learners' previous experience with autonomous

language learning and their beliefs. Consequently, doing reflection on what they had done in Activity 1 (sometimes Activity 2 as well) inevitably enhanced their sense of learner autonomy to some extent. At the same time, through analyzing the reports, it was found that the students became better and better at using their own technology devices to gather high-quality information/resources and doing self-reflection as well as self-evaluation on their own learning.

In the early stage of the experiment, many of the students seemed to suffer from not knowing what to write, therefore, they imitated the example report strictly. However, lesson after lesson, their reports became more diverse and better in quality in terms of the information/resources they introduced and the way they organized the introduction, the way they did the self-reflection and self-evaluation. This indicated that students' autonomous learning ability was getting promoted through writing the reports. By having the freedom to use their own technology devices to facilitate learning in their private zones (i.e. PLE), deciding what information/resources to use (learning materials), and developing stories and plots for the games (learning objectives), the students were getting used to taking control over their own learning.

At the beginning of the intervention, students might feel struggle to understand and follow the new tasks to different extents. Yet they gradually and unconsciously engaged themselves in the tasks, either because they developed an interest in them or that they were driven by the desire of impressing their classmates

and teacher or the fear of embarrassing themselves in the classroom. Six interviewees mentioned that they had problems during the experiment and all their problems were related to the uncertainty and unfamiliarity of the tasks. They often were not sure of what they were doing in the beginning of the experiment. As one interviewee put it “At the first and second lesson I was confused by the strange approach and I was not sure whether I understood what the teacher said.” Within two or three weeks, students started to enjoy the ESC lessons. Another interviewee said “The problems were solved in the second week when I saw what my classmates were doing. I started to know the characteristics of the ESC lessons.”

According to the interviews, when they fully engaged in the three tasks, they unconsciously developed a sense of learner autonomy, motivation, confidence, and interest in English-speaking learning. As one interviewee put it “I really like the new ESC lessons. It was challenging and fun. During the experiment, I expected to have ESC lessons every week. I especially like the role play game because I am a member of the drama club of our college and I like to act.” Another interviewee said that having the ESC lessons a few weeks later, he started to feel less nervous and more confident when he talked to his classmates or teachers in English. This finding is consistent with Little (2003)’s observation, autonomous learners tend to “affectively engaged” in planning, sustaining, monitoring and evaluating their learning behaviors and performance in certain tasks or general learning. That is to say, motivation is an

essential element for learner autonomy development and vise versa, the promotion of learner autonomy is a key strategy for motivating learners.

4.3 Results regarding research question 3

To answer research question 3 “What are the students’ perceptions and suggestions concerning the experiment?” a questionnaire in the form of a 5-point Likert-Scale was constructed to elicit students’ perceptions of and suggestions for the pedagogic intervention in the current study. Moreover, a semi-structured interview with 10 leading questions was also designed to triangulate the data. During the process of the interviews, new ideas and questions were allowed to be brought up according to the situation due to the characteristics of a semi-structured interview (Edwards & Holland, 2013).

4.3.1 Results of the questionnaire

The questionnaire concerning students’ perceptions of the pedagogic intervention was administered to the students in the experimental group after the experiment when the posttest was completed. The questionnaire consisted of two parts with part one asking relevant information of the students while part two asking students’ perceptions of the experiment in the form of a 5-point Likert-scale (see Appendix H). There were three items in part one of the questionnaire. The first one asked the students to tick the technology devices they had. The second and the third item asked the students about the amount of time they spent in learning or practicing English-speaking skills

each week and the amount of time they spent in surfing the Internet each day respectively. The second and third item were also embedded in the questionnaire for students' learner autonomy as well.

The results of part one showed that 100% of the students in the experimental group had a mobile phone, 92.85% had a personal computer, and 45.23% had other technology devices. As for the second and the third item, students' answers were similar to the answers from the questionnaire for learner autonomy with a mean of 3.36 hours for time spent in learning or practicing English-speaking each week and a mean of 4.18 hours for the time spent in surfing the Internet each day.

Table 4.13 presents the results of the 5-point Likert-scale questions concerning students' perceptions of the experiment. It is shown in the table that all the items in the scale had a mean higher than 3.5 except for item number 6 "I prefer the traditional way of teaching ESC than the experiment." which was a negative statement for the experiment ($\bar{x}$=1.83). The students generally agreed that the experiment improved their English-speaking skills ($\bar{x}$=3.81) and strengthened their confidence in learning English-speaking skills ($\bar{x}$=3.71). They liked the way of teaching during the experiment ($\bar{x}$=4.21), which was consistent with the low level of agreement on the statement that they preferred the traditional way of teaching ($\bar{x}$=1.83). The students agreed that the experiment enhanced their sense of learner autonomy ($\bar{x}$=3.95), which was consistent with the findings from the questionnaire and the semi-structured

interview concerning learner autonomy in the earlier section. They thought the experiment introduced them a better way to make use of technology devices to facilitate their study ($\bar{x}$=4.26) and it increased the chance of inter-student interactions ($\bar{x}$=4.24). Students considered having ESC lessons during the experiment as enjoyable ($\bar{x}$=3.83) and they thought they became more interested in learning English-speaking skills because of the experiment ($\bar{x}$=3.69).

Table 4.13 Descriptive statistics of students' perceptions of the experiment

Items	N	$\bar{x}$	SD
1.This experiment improved my English-speaking ability.	42	3.81	.917
2. The new ESC lessons strengthened my confidence in learni English-speaking skills.	42	3.71	.805
3. This new ESC lessons enhanced my sense of learner autonomy.	42	3.95	.730
4. This new ESC lessons showed me a better way to use technology tools to facilitate study.	42	4.26	.665
5. I like the way of teaching in the new ESC lessons.	42	4.21	.682
6. I prefer the traditional way of teaching in previous ESC lessons than that in the new ESC lessons.	42	1.83	.660
7. I think the way of teaching in the new ESC lessons should be widely applied to other courses.	42	3.88	.633
8. The new ESC lessons enhanced my interest in learning English-speaking skills.	42	3.69	.924
9. The new ESC lessons increased the chance of inter-student interaction	42	4.24	.691
10. I enjoyed having the new ESC lessons.	42	3.83	.696
Valid N	42		

4.3.2 Results of the semi-structured interview

The semi-structured interview concerning students' perceptions of the experiment was conducted after the experiment with 13 students selected from the experimental group by random sampling. There were 10 validated guiding questions predesigned based on a review on relevant literate, covering students' opinions, feelings, experiences, and acceptance concerning the experiment (see Appendix K). The interviewees were informed that they could express their opinions freely and that the interviews would be used anonymously and only for academic purposes.

All the interviewees considered the experiment as effective in improving their English-speaking skills. There were 8 interviewees who reported that they thought the new ESC lessons in the experiment were "very effective" while the other 5 interviewees reported "somewhat effective". One interviewee stated that "I could notice that my English-speaking skills were getting better and better during the 11 weeks, and some of my roommates made progress too." Another interviewee said that taking part in the experiment a few weeks later, he started to feel less nervous and more confident when he talked to his classmates or teachers in English. As for the experiment's effects concerning learner autonomy, 7 interviewees reported it was "very helpful" in improving their sense of learner autonomy, 4 considered it as "helpful", whereas 2 considered it as "somewhat helpful". This was presented in detail in Section 4.2.2 about the results of interview questions regarding learner autonomy.

The interviewees were then asked to describe in detail their opinions and feelings on the experiment. All of their answers contained complimentary words such as “innovative”, “interesting”, “fun”, “enjoyable”, and “interactive”, etc. As one interviewee put it “I really like the new ESC lessons. It was challenging and fun to play the role play game. In fact, I especially like the role play game because I am a member of the drama club in our college and I like to act.” Another interviewee said that “I think the experiment is very innovative, like the courses in the universities of western countries. Especially, we were allowed to learn in our own style and we didn’t need to go to the classroom in the first half of the lesson. Moreover, we were taught to use our mobilephones and computers to obtain useful information and resources. I think it is very useful in many other courses too.”

Some interviewees seemed to be extremely keen on Activity 1, in which they were expected to use their own technology devices to locate information and resources that could be used in the ongoing role play game section. As one of them said, “I really like the design of the first half of the lesson because we could use mobilephones and computers to search for the materials and any resources that we want to learn and practice.” Another interviewee said that “Before the experiment, I used mobilephone all the time but only for chatting and playing games. When I was showed many examples of using mobilephones and computers to facilitate learning, I thought it was inspiring and I could do that too.”

Most of the interviewees thought that the traditional ESC lessons were more relaxing and easier than the ESC lessons in the experiment. However, they all agreed that the experiment was better for learning to speak English effectively. Quoting one interviewee's words, "The traditional ESC was very relaxing. We didn't need to prepare anything before the lesson and the teacher promised us at the beginning that none of us would fail this course. The experiment was more stressful since we needed to perform ongoing role play games in front of our classmates and teachers in every lesson. We inevitably needed to think more about how to act in the role play game and how to get suitable information and resources. However, I liked the experiment more than the traditional ESC because it was interesting and challenging. I think a more serious but also more interesting learning pattern can push me to learn more."

Six interviewees mentioned that they had problems during the experiment and all their problems were related to the uncertainty and unfamiliarity of the experiment. They often felt not sure of what they were doing at the beginning of the experiment. As one interviewee put it "In the first and second lesson I was confused by the strange approach and I was not sure whether I understood the routines of each lesson." Within two or three weeks, students started to enjoy the experiment. Another interviewee said "The problems were solved in the second week when I saw what my classmates were doing. I started to understand the characteristics and purposes of the lessons." These findings are consistent with the findings from the researcher's

observation field notes.

When the interviewees were asked whether they had any suggestions for this experiment, 6 of them answered positively. Five of them suggested that they needed more feedback with 2 thinking it would be much better if the teacher could give feedback on the reflection reports they uploaded in the resource-sharing platform and 3 wanted in-depth feedback on their performance in the role play game. As one of them put it "I really want to know whether the information and resources I uploaded are useful or not and whether my ideas are good or not." Another interviewee said that "The feedback we gained was very little. I think the teacher should give us more feedback on each students' performance." One interviewee suggested that instead of being assigned a role, the students should be the ones to choose the roles they liked. In that case, they would be more interested in playing the game.

4.3.3 Answer and discussion regarding research question 3: What are the students' perceptions and suggestions concerning the experiment?

From the findings of the questionnaire and semi-structured interviews presented above, the answer to research question 3 is clear. The students had positive attitudes toward the experiment in general, they thought it was effective in improving their English-speaking skills and enhancing their sense of learner autonomy. They also considered it as innovative and interesting. They reported that they enjoyed having ESC lessons in the experiment, even though some of them considered it more difficult and

intense than the traditional ESC lessons. Some of them indicated that a slight feeling of intensity and pressure in having the ESC lessons during the experiment helped them learn better and improve faster. This indicates students well realized that the experiment was more difficult and intense than the traditional ESC, yet they also understood the benefits could be brought to them from having this kind of challenging and intensive lessons. When they were given traditional ESC lessons, they felt relaxing and no pressure. However, when they were intervened, they felt a little pressure, challenging, and fun, etc. From the findings of both the questionnaire and interview, the students prefered to have ESC lessons in the experiment than traditional ESC lessons. These findings are consistent with Tang et al (2008)'s arguments that it is necessary to develop a systematic and student-centered teaching model for this course to avoid students being passive and negative. In other words, it is necessary to plan and adjust the ESC clearly and systematically to make it more effective.

The students liked the idea of having the freedom to some extent to use their own technology devices to obtain relevant learning information and resources. Even though they were not used to this way of learning at the beginning, given some time they started to appreciate it. This indicates that new changes in the classroom might make the students feel uncomfortable at the beginning, yet students' ability to adapt to the environment should not be underestimated but encouraged and reinforced. As Nunan (1997) points out that autonomy can be fostered regardless of a learner's

personality. With patience, they could pick up the new changes quickly, get used to them, and benefit from them. For example, in playing the ongoing role play game, some of the students might feel reluctant to perform and speaking English in front of the class at the beginning, but soon they devoted themselves to the game and enjoyed acting out their roles.

To sum up, students liked the way of teaching and learning in the experiment and they had positive attitudes toward all the three activities in general. Moreover, they thought what they learned in the training lessons were useful and that it could be used in other courses. They suggested that they would like to have more feedback on the reflection report and role play game performance from the teacher. In other words, students would welcome this approach to teaching and learning. They believed this approach had the potential to be applied to other courses with a little refinement and more detailed feedback.

4.4 Results regarding research question 4

In order to answer research question 4 “What are the teacher’s perceptions and suggestions concerning the experiment?” a semi-structured interview (see Appendix N) was designed to investigate the teacher’s opinions, feelings, suggestions, and perceptions of the whole experiment. The teacher who was responsible for the experimental group and the control group was an American male teacher with two and

a half years of teaching experience in China.

In his opinion, the experiment was innovative and challenging. He also thought it was effective in improving students' English-speaking skills as well as strengthening students' sense of learner autonomy. According to his statements, firstly, it was innovative that students were given the freedom to decide what to learn and then locate information and resources that were useful for their learning in any place they like. In this process when students were given the freedom to decide and implement their decisions, their sense of learner autonomy and critical thinking would inevitably be raised or strengthened. Secondly, the students were trained to use their mobilephones and computers to facilitate their learning which would introduce them a lot more of effective methods and strategies to learn as well as to locate useful and available learning information and resources. Thirdly, the ongoing role play game was well designed and innovative as well to let the students develop their own stories and plots to engage themselves in speaking English.

He thought that the traditional ESC lesson would make the students feel relaxed and know different cultures while the experiment was more intense and challenging during which the students needed to think more and speak more so that they could perform well in the role play game. In his original statements, he said that "the purpose of the program was to show the students different cultures and improve their English-speaking skills. However, the university did not provide a clear course curriculum.

Therefore, I don't want to make it too serious or difficult for them. The new arrangement for the course, however, was more intense and challenging than expected. The students definitely would learn more and improve greatly by having this kind of lesson.” The teacher indicated that he prefered the experiment since it was more beneficial for both the teacher and the students in a long-term manner.

The teacher also indicated that he didn’t have problems when he was teaching during the experiment. As he said “I don't think I had problems with it but I think the students might. Some of them seemed to be confused by the new routines.” However, he indicated that the students’ performance was satisfying in general. Quoting his words “They became familiar with the new routines quickly and tried their best to perform the role play game. I was so proud of them.” Same as some of the students, he also thought that the experiment had the potential to be applied in some other courses but a few refinements might be needed. From his point of view, the challenges and difficulties for him to teach the ESC has alwas been the large-size classrooms, the lack of knowledge of students’ learning needs, and a clear syllabus of the course. As a result, he thought the experiment helped him solve the problem of large-size classrooms and meet most of the students’ learning needs. He suggested that it would be much better if the training lesson could be more detailed in showing the students how to judge the information and resources from the Internet critically.

Answer to research question 4: What are the teacher’s perceptions and

suggestions concerning the experiment?

The findings presented above clearly answer research question 4. The teacher had positive attitudes toward the experiment. He considered it as challenging and innovative. In comparison with the traditional ESC lessons, he thought the experiment was more systematic in terms of classroom activity design and more effective in engaging students in speaking English. The traditional ESC lessons were more relaxed with its main focus on sharing cultures. In his opinion, the experiment had the potential to benefit both the teacher and the students in a long-term manner, although he also indicated some concern that students might have trouble with the new routines at the beginning. He agreed with the students' opinion which suggested that the way of teaching and learning in the experiment could be applied to other courses with some refinements. This indicated that the teacher realized it might take some time for the students to get familiar with the new approach, yet he still believed this effort is worthwhile. Moreover, he suggested that the experiment could be better if the training lesson was more detailed in showing the students how to judge the information and resources from the internet critically. This showed that he welcomed the new approach but he also believed some improvement could be done to make it better.

4.5 Summary

This chapter presented the statistical results and qualitative findings from the

experiment and answered the 4 research questions based on the results and findings. Moreover, the discussion of the results and findings were presented as well. The statistical results of the pretest and the posttest showed that the experiment was more effective in improving students' English-speaking skills than the traditional ESC. The findings of the questionnaires and semi-structured interviews showed that the experiment was more effective in strengthening the students' sense of learner autonomy than the traditional ESC. Moreover, the students and the teacher have positive attitudes toward the experiment in general. In the next chapter, conclusions, implications, and recommendations concerning the study will be presented.

CHAPTER 5

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

This chapter concludes the thesis. It is organized into four sections. First of all, section one summarizes the present study, including the research design and major findings. Section two explores the implications of the study for the English-Speaking Course (ESC), and English as a Foreign Language (EFL) education in China. Section three describes the strengths and limitations of the study. In the end, section four proposes recommendations for further research on the basis of the current study.

5.1 Summary of the study

The present study was conducted to examine the effects of a Rhizomatic and Information Literacy Training (RILT) approach on improving Chinese undergraduate students' English-speaking skills and their sense of learner autonomy, meanwhile, to investigate the students and teacher's perceptions of this approach. The study employed a mixed methods design. A quantitative framework was used to assess the participants' English-speaking skills and their level of learner autonomy before and after the experiment. A qualitative framework was used to explore the student-participants and

the teacher's perceptions of the RILT intervention and the student-participants' development of learner autonomy through the use of semi-structured interviews and the analysis of other qualitative data.

Based on the research purposes, four research questions were formulated, regarding 1. the effects of the RILT approach on Chinese undergraduates' English-speaking skills; 2. the development of the students' sense of learner autonomy; 3. the students' perceptions of the approach; and 4. the teacher's perceptions of the approach, respectively. In order to examine these research questions, a quasi-experimental design consisting of a pretest-intervention-posttest procedure was used. The duration of the intervention was 11 weeks (90mins*11) distributed through an 18 weeks semester. Two intact classes of students majoring in Business English were selected to participate in the experiment as the experimental group and the control group respectively.

The RILT approach was implemented in the experimental group's ESC lessons, while the control group had ESC lessons in the traditional way. The tasks students in the experimental group needed to complete in every ESC lesson were 1. Resources and information collection task; 2. Ongoing role play game; and 3. Weekly reflection report. The instruments used in this study to collect data were pretest and posttest of English-speaking, questionnaire of students' learner autonomy, questionnaire of students' perceptions of the approach, semi-structured interview concerning students and teacher's perceptions of the approach, chat history in the resource-sharing platform,

students' weekly report, and observation field note. Independent samples t-test and paired samples t-test were used to analyze the data collected from the pretest and posttest as well as the 5-point Likert scale questions in the questionnaires, while thematic analysis and open coding technique were used to analyze interview transcript and other qualitative data.

The major findings of the study were summarized as follows:

The findings from the pretest and posttest showed that students in the experimental group improved their English-speaking skills significantly after 11 weeks of pedagogy intervention. They outperformed students in the control group in the posttest. Specifically, they had significant improvement in English-speaking skill in terms of speaking fluency and coherence, lexical resource, grammar range and accuracy, and pronunciation. It indicated that the RILT approach helped the students improve their English-speaking skills in a comprehensive manner. Moreover, based on the data from the questionnaire and interview, they also improved their sense of learner autonomy significantly.

Students in the control group, however, did not have significant improvement in English-speaking skill in general nor significant improvement in students' sense of learner autonomy. They had shown significant improvement in terms of fluency and coherence as well as lexical resource in English-speaking, but no significant improvement in terms of grammar range and accuracy, nor in pronunciation. It

indicated that the traditional way of teaching and learning in the ESC classroom failed to help the students improve their English-speaking skills in general.

As for the perceptions, students in the experimental group had positive attitudes toward the RILT approach in general. They found the experience of having ESC lessons during the experiment challenging, motivated, and enjoyable. They indicated that a certain amount of pressure in the experiment helped them improve their English-speaking skills faster and strengthened their sense of learner autonomy as well. They considered the RILT approach as effective and they suggested that it could be applied to other courses if possible. The teacher who was responsible for the ESC lessons of the experimental group and the control group also reported similar ideas about the RILT approach. He commented on the approach as innovative and challenging, in a way that could benefit students and teachers in a long-term manner. Same as the students, he also suggested that the approach had the potential to be applied to other courses.

In conclusion, the findings show that the RILT approach was effective in improving students' English-speaking skills and their sense of learner autonomy. Consequently, it could be an alternative approach to the teaching and learning in the ESC classroom. Both the students and the teacher showed positive attitudes toward the approach. They all considered this approach had the potential to be applied widely in other courses or in other contexts. These findings also underpinned and provided empirical evidence for the well-developed Rhizomatic structure of learning and

constructivism view of learning, which were proposed to construct a theoretical framework for this study in the literature review section.

5.2 Pedagogical implications

The findings of this study point to some significant implications for the teaching and learning of EFL in general for Chinese undergraduate students.

5.2.1 Necessity of applying RILT approach in the ESC

The results and findings of the study are sufficiently compelling to suggest the necessity of reforming current practices of teaching and learning in the ESC. According to the research findings, problem analysis in Chapter 1, and literature review in Chapter 2，it is known that the traditional way of teaching and learning in ESC classroom failed in helping students improve their English-speaking skills significantly. As described in Chapter 1 (see Section 1.1.2 and Section 1.1.4) and Chapter 2 (see Section 2.1.3), the idea of hiring Native Speakers of English (NS) as teachers for the ESC has always been a motivator for students, yet their inexperience in dealing with large-size classrooms and obedient Chinese students eventually made the course less effective than expected. As for the institutes, they only assigned very general teaching objectives for the NS teachers and then let them take charge of everything.

As Xiao (2012) reported, in China, teachers always have clearly predefined teaching objectives and uniformly standard textbooks for their teaching, but the NS

teachers prefer to do their teaching flexibly without standard textbooks nor clear objectives. It is not saying that the only appropriate teaching approach for the Chinese students have to be constructed by predefined teaching and learning objectives together with standard textbooks, but changes and reforms should be led to take place step by step, leaving students some spaces to get adaptive. The NS teachers' flexibility and relaxing style, reflecting changes in a sudden, did win students' appreciation and motivate them at the beginning, yet students usually lost their interests and came back to their passive and obedient mode after a period of time. Due to the cultural issues, Chinese students are not easy to learn in a completely autonomous environment nor a teacher without a clear and systematic teaching sequence. Nonetheless, the history of the ESC in China is not long enough to make course arrangement, teacher's role, and course objectives clear and sufficiently detailed (Tang et al., 2008; Xiao, 2012; Wen, 2016). Consequently, the ESC has always been less effective than it is expected to be.

Based on these backgrounds, the current study was specially designed in an attempt to improve the effectiveness of the ESC. According to the results and findings, the researcher argues that the RILT approach in the study could be a good model as an alternative to reform the ESC teaching and learning. The detailed arguments and reasons for applying the RILT approach in the ESC classroom are presented as follows:

Firstly, the design of the three activities of the RILT approach was not only based on a well-found theoretical framework but also a specific investigation on the

situation of the ESC classroom in Qingyuan Polytechnic as well as a review of the literature regarding the situation of ESC classrooms in China in general. It could be said that this approach was specially designed for the ESC. Consequently, the application of it should not in any way conflict with the current context of Chinese higher education or the ESC itself. Even though in Activity 1, instead of attending the classroom, students would be set free to any places they like to collect learning resources and information. It might seem like a challenge to the traditional classroom and face-to-face teaching and learning, nonetheless, it would not affect the authority of classroom discipline since the ESC classroom led by the NS teachers has always been more flexible, more recreational, and less test-dominant (speaking skill as the foremost course objective of the ESC, is not included in most of the national tests for English proficiency). Consequently, it is not unusual for the NS teachers to bring the students out of the classroom and play games outdoor. In other words, this activity does not violate the existing educational system. Therefore, it can be applied to the ESC classroom directly without any extra effort on applying for permission from the institutes or the local board of Ministry of Education.

Secondly, the design of the three activities working together (characterized by autonomy, sequence, challenges, information literacy) can be more effective in helping students improve their English-speaking skills and fulfill course objectives than the traditional way of teaching (characterized by flexibility, randomness, easiness). In

completing Activity 1, students not just implement a process of using technology devices to locate resources and information, but also need to evaluate and make decisions on what they are going to choose, use, and learn. This activity gives students the freedom to select their own learning resources and information, in other words, select what they what to learn and what they want to use for learning. As for the rest two activities, Activity 2 provides students a complex problem-solving environment that reflects the real world for them to practice their English-speaking skills in a meaningful context. In this activity, every student has a comparatively equal amount of time to interact with their teammates in English. Initiative or not, regardless of incompetent students or shy students, no one single student would be left in silence. Consequently, students' English-speaking skills would be improved in a way that is more comprehensive and balanced. Activity 3 lets students reflect on what they have done in Activity 1 and Activity 2 to make them understand better their performance and their weakness as well as strength in the whole learning process. This activity linking with the other two activities could have a good effect especially on the development of students' sense of learner autonomy, motivation, and confidence in learning English-speaking skills. This is in accordance with Holec (1981)'s argument that an autonomous learner holds the responsibility for deciding the contents of learning, methods and techniques to be used in learning, monitoring and evaluating his/her own learning.

Finally, the RILT approach could be beneficial for the students and the

teachers in a long-term manner in that, for the students, the approach not only strengthens their sense of learner autonomy, develops their information literacy skills in relation to their technology devices, but also promotes their confidence and motivation in learning English-speaking skills. Having the RILT approach, students can learn how to make use of their personal technology devices to locate learning resources and information anywhere anytime. Consequently, they no longer are restricted by the limited learning resources provided by the institutes and the fixed time schedule for learning. This would make them more autonomous and motivated learners eventually, which is beneficial for them in their lifetime. These effects might not be easy to be observed in a short-term manner, yet its long-term benefits could be more profound and useful for developing their lifelong learning ability. For the teachers, however, they could spend their time in managing the classroom environment and understand their students better rather than making lesson plans with different classroom activities for every lesson. In this case, they can make sure that every lesson goes smoothly without chaos caused by unreasonable classroom activities and management. Moreover, this approach could save the NS teachers from being overwhelmed by students' enthusiasm for interacting with them. All they need to do is to coordinate and facilitate the students when they are engaging in the activities, give encouragement and detailed feedback at the right time. Based on the findings from the questionnaire and interview, both the students and teachers involved in the current study showed positive attitudes toward

this approach. They all considered it as effective in fulfilling course objectives and developing students' sense of learning autonomy. As a result, the application of the RILT approach in the ESC should be welcomed and appreciated by both the students and teachers.

5.2.2 Teachers and other shareholders should rethink EFL education in China

Due to many constraints, EFL education in China has always been test-dominant. Nonetheless, most of the standardized tests for English proficiency in China do not include speaking skill as one part of the assessment, making English-speaking a neglected skill in the whole EFL educational system. As a result, many Chinese students who have good scores in English proficiency tests like CET4 or CET6 often fail in communicating with others in English in a real-world situation. According to He and Zhang (2005), the main reasons that caused this unsatisfactory outcome could be the utilitarian society and ways of assessment, etc. Besides, most of the teachers blame their deficient English proficiency and inadequate pedagogic experience for preventing them from organizing and carrying out speaking activities, which they consider as key factors that challenge oral English instruction. As a matter of fact, besides the deficiency in English-speaking skill, there are many other problems should be working on in the EFL education in China. As a result, the calls for reforming EFL education in different ways from different perspectives have never stepped down from the stage.

Based on the above description concerning EFL education in China and the promising results of the study, the researcher argues that teachers and other shareholders such as educators, government, and educational policy-makers, should rethink EFL education in China in relation to the RILT intervention in the current study. These relevant parties should consider study or use the RILT intervention in the current study as a reference to the reform of EFL education in general. Especially for educators and educational policy-makers who are directly relevant to education and have the power to directly influence EFL education on a national scale. They need to consider at least four things based on the current study.

The first thing is to rethink the role of speaking skill in EFL education in China. The educators and educational policy-makers should rethink the amount of attention should be given to speaking skill under the core purposes of EFL education in different levels of school (from primary school to college) and its practice in the current context of China. After that, instead of general curriculums, clear and detailed EFL curriculums should be developed for different levels of schools and actions should be taken (such as embedding speaking skill in all kinds of English proficiency tests) to ensure the implementation of the curriculums of different levels. In this case, it can prevent the schools and teachers from finding a way to perfunctory walk through the routines by doing pay lip services.

For example, the Ministry of Education (MOE) has published quite a lot of

policies highlighting the importance of listening and speaking skills over the last two decades (Chen & Goh, 2011), especially for college EFL education. One of MOE's publications in 2007 stated that "The objective of College English is to develop students' ability to use English in an all-round way, especially in listening and speaking." Nevertheless, these schools of different levels still run in their own traditional ways without any notable changes. Primary schools focus on producing students with high scores in English proficiency test (in which, speaking skill is not assessed) so that the students can go to a better secondary school and then the primary schools themselves could win a good reputation because of this. Secondary schools focus on the English proficiency test for the enrollment of high schools while high schools focus on the English proficiency test for college entrance examination. The colleges and universities, however, focus on different tests for certificates of all kinds, accreditation or not. In a word, none of these schools actually pays attention to listening and speaking skills under the subject of EFL. Consequently, the educators and educational policy-makers should rethink the role of speaking skill under the core purposes of EFL education in different levels of school and its practice in the current context of China. If it is really as significant as what MOE had declared in their publications, detailed curriculums and different types of assessments (including speaking skill) for different levels of EFL education should be developed and actions should be taken to implement these curriculums and assessments.

The second is the potential of the RILT approach in different courses, subjects, and contexts. While the results and findings indicated the effectiveness of the RILT approach to ESC teaching and learning, the students and the NS teacher suggested in the interview that this approach has the potential to be widely applied to other courses, other subjects, or in other educational contexts. As a result, educators and educational policy-makers, and relevant researchers should consider conducting replication studies on a larger scale to test the validity and generalizability of the present findings in the ESC. Moreover, they should consider the possibilities of applying this approach in other courses of EFL education. Last but not least, they should also conduct replication studies on different subjects or different contexts to investigate the full potential of the RILT approach regarding achieving course objectives.

The third is the necessity of developing students' sense of learner autonomy and their awareness of information and technology convenience. As is widely recognized that we are in an era of overabundant information and convenient technology, which can be the crucial challenges as well as opportunities that formal education and students of all levels face today. Educators and educational policy-makers should research the situations and contexts regarding information and technology convenience in China and the possible effects they could or would have in the Chinese educational system. With a better understanding of the background and environment of fast information and convenient technology, we can therefore, face the

challenges brought from them and turn them into opportunities. However, above all, educators and educational policy-makers should consider the urgent need of developing students' sense of learner autonomy and their awareness of information literacy skills with their personal technology devices. Since the trend of fast information and convenient technology is unstoppable but evolving, they should figure out a way to embed the development of learner autonomy and information literacy skills into curriculums of all levels of schools accordingly. In so doing, they are preparing the students for an age of uncertainty and overabundance because these are the foremost skills or qualities one needs to pursue lifelong learning and make better decisions.

The last one is setting up in-service teacher training programs in EFL education. As discussed in the literature review, many EFL teachers in China blamed their low English-speaking proficiency as the main reason preventing them from implementing oral English instruction. However, they did not indicate any attempt to make effort and make changes to improve their English-speaking proficiency. This could be another challenge to develop students' English-speaking skills – the teachers themselves do not have confidence in teaching English-speaking skill nor initiate the pursuit of improvement in their English-speaking proficiency, making the development of students' English-speaking skills a task merely for the NS teacher in the ESC classrooms. As is already known, the ESC has always been less effective than we expect it to be. To change this unfavorable situation, educators and educational policy-makers

should consider the need for setting up in-service teacher training programs for EFL education in China (especially for higher education) to cultivate teachers' responsibility and professional qualifications in their own fields.

5.2.3 Implications for pre-service teacher training

As a matter of fact, findings from the current study not only implied the need for setting up in-service teacher training programs for EFL education in China, but also the need for reforming pre-service teacher training programs. Pre-service teachers training programs here refer to university or college undergraduate programs (majors) regarding "Education" in general and subject-oriented education such as "English education", "preschool children education", "music education", etc. Studying in these majors, students are going to be teachers of different subjects when they are graduated, such as "English teacher", "kindergarten teacher", "music teacher", etc. The programs require these undergraduates (i.e. pre-service teachers) to take different courses that are assumed to be helpful for their future career as a teacher. Most of these courses are about information and knowledge of the subject they are supposed to be teaching (like the courses non-educational majors have). Besides, they usually need to take a few additional courses comparing to non-educational majors, such as "pedagogy" and "educational psychology" (usually theoretical but superficial), calligraphy (including chalk, fountain pen, and Chinese brush pen), classroom management, plus approximately one term's teaching practice. Generally speaking, this is the formal pre-

service teachers training in China. However, considering today's unpredictable global environment, the researcher argues that a reform of pre-service teachers training program is necessary.

Put the institutes, educators, and policy-makers away, we all know that teachers and students are the two parties most directly involved in the whole process of classroom teaching and learning. To fulfill the educational purposes, teachers always need to directly connect or interact with students so as to display "knowledge" to them, either verbally or in other ways. However, this is an old framework of teaching more suitable for the world two decades ago or even earlier. Today's modern world is full of uncertainty with overabundant information (or so-called knowledge) which could be outdated in a blink of an eye. It is not appropriate nor efficient enough to simply maintain this way of teaching, which is cramming information or knowledge into students' brains. According to the present situation, the speed of cramming knowledge into students' heads would no longer be able to catch with the speed of information and knowledge getting outdated and losing validity.

Nevertheless, formal education of all levels in China still maintains this way of teaching, moreover, various national standardized tests are developed to test whether the students remember this information and knowledge well. If the test-dominant nature of formal education in China could not be changed easily, perhaps due to the feasibility and practicality of selecting talented individuals out of a large population more than 1.4

billion. The changes and reforms of teaching approaches and pre-service teachers training programs under the current framework of formal education are in urgent need so as to prepare the students for the uncertain future. In other words, alternative approaches such as the RILT approach should be developed for better teaching and better learning.

As a matter of fact, the RILT approach not only could be the students' model of better learning but with some refinement, it could also be the teachers' model of better teaching. As a Chinese says goes "it is better to teach someone how to fish rather than giving him/her fishes", like fishes, information and knowledge do not last forever. Instead of cramming all kinds of information and knowledge into students' heads, it is better to teach them the way of getting validated information and the ability of better and lifelong learning. Based on the current study, we can imagine that students update their knowledge anywhere anytime using their technology devices and information literacy skills they learned from the training lesson. However, the reforms of pre-service teachers training programs do not necessarily mean to let the teachers and students teach and learn by the RILT approach exclusively. The idea is that instead of focusing on the information and knowledge itself, we should take a look at teaching and learning in a broader scope. Perhaps, pre-service teachers themselves need to be trained the theory of learning and understand better the process of learning so that they can teach better and help students learn better. They also need to be trained to use accessible technology

devices to facilitate teaching and learning as well as use technology to locate information and resources for their teaching. Only in this case, could they be the role model to show students how to make better use of their own technology devices to learn effectively and efficiently. Moreover, the meaning and significance of autonomy in better learning and lifelong learning should be introduced to the pre-service teachers as well. At the same time, they should also be trained the ways to develop students' sense of learner autonomy. Only when the teachers themselves understand the idea of learner autonomy, can they facilitate students to become more autonomous and successful learners.

5.3 Strengths and limitations of the study

Although the study contributed to EFL education (mostly in China) by achieving positive findings and providing pedagogical implications, the strengths and limitations of the study should be addressed in an objective and fair manner.

The first and foremost strength of the study could be the innovation and effectiveness of the RILT approach itself as described in the earlier sections. Academically, it bridged the research gap to a certain extent by innovatively combining information literacy training into English-speaking skill teaching and learning, which could be beneficial for the students in a long-term manner. As for the proved effectiveness, the Personal Learning Environment helped students strengthen their

sense of learner autonomy, which could be another long-term benefit. Mostly directly, the RILT approach did help students improve their English-speaking skills, which is the course objective of the ESC. Theoretically, it provided empirical evidence for the Rhizomatic learning structure and Constructivism view of learning. Pedagogically, it pointed to significant implications as described in the above sections.

After that, employing a mix-method approach, the study triangulated data by collecting different sources of data, including pretest, posttest, questionnaire, semi-structured interview, weekly report, and observation field note, and students' chat history. The triangulation of quantitative and qualitative data contributed to a better understanding of the effects of the RILT approach and provides an overall picture of how students and the teacher evaluated the approach. Arguably, the triangulation of the data made the study more rigorous and the results more reliable. What is more, two intact classes of students were selected as the participants for the current study under the quasi-experimental design, remaining the classroom conditions the same as any regular classes. At the same time, the RILT approach was implemented in a regular ESC classroom for the experimental group, in comparison with the traditional ESC classroom for the control group. This made the findings of the current study more reliable and generalizable since the study was based on a real-world context. The context of the college in which the current study was conducted was well described. Consequently, this made the findings from the current study easier to be generalized in

other universities and colleges with similar contexts.

As described above, the current study has many strengths in terms of the approach itself, sources of data, research design, and research contexts, etc. Meanwhile, it did yield many promising insights and implications about improving the effectiveness of the ESC and EFL education in general as well as developing in-service and pre-service teacher training programs to realize better EFL teaching and learning. Nonetheless, some limitations should be addressed.

First, the participants were two intact classes chosen on the basis of convenience and availability. As a result, there were not equal numbers of male and female students for the experimental group (male=5; female=37) and the control group (male=4; female=39). Even though the imbalance of the numbers of male and female participated in the current study did not necessarily decrease the credit of research findings, it still represented a limitation.

Second, technically, the time duration of the Information Literacy Training (ILT) lesson was not long enough and the content of it was not detailed enough. One 90-minute lesson seemed not enough to cover the whole training plan on information literacy skills in relation to personal technology devices. Students were introduced to some basic techniques of applying their mobilephones or computers to locate resources and information. Nevertheless, they were not trained in detail how to evaluate the quality or judge the truth or false of the resource and information they encountered in

their mobilephone or computer. For the current study, the ability to use mobilephones or computers to collect resources and information should be as significant as the ability to evaluate the quality and judge the truth and false of the resources and information. Nonetheless, it can be said that due to the limitation of training lesson design and implementation, students participated in the training were merely raised their awareness of information literacy skills and technology convenience. As a result, this could be a limitation concerning the ILT lesson.

Third, the teacher's role in the whole experiment was not well defined. Even though the current study defined the NS teacher who was responsible for the ESC lessons as a facilitator, in fact, he was taking a role counting for little. It is not saying that it was not good to let the students do their own learning autonomously since learner autonomy was one of the dependent variables for the study. Rather, there is a possibility that the RILT approach could be even more effective if the NS teacher had a clear role to play. If he was designed to be a facilitator, the specific techniques and responsibilities concerning how would he facilitate should be well planned. For example, as several interviewees reported that they wanted more feedback from the teacher in terms of their performance in ongoing role play game and their weekly report, which indicated students' need for encouragement, approval, and praise from someone they respected – their teacher. Consequently, the NS teacher could be more active and make more effort in commenting on the students' performance and giving them detailed feedback to

reinforce students' learning behaviors. Regarding this point, the current study did not define and explain the teacher's role clearly enough, counting for another limitation.

5.4 Recommendations for further research

In light of the limitations discussed above and remaining issues regarding the RILT approach and the ESC, EFL education in China, more research should be conducted to further explore the maximum effects of this approach.

First, the study was a preliminary attempt to improving Chinese undergraduate students' English-speaking skills and their sense of learner autonomy. Clearly, a large-scale replication study would be necessary, yet with some refinement concerning the ILT lesson and teacher's role as discussed in the limitations.

Second, the study provided a chance for students to locate resources and information in their own Personal Learning Environment (PLE) in the hope of developing students' sense of learner autonomy through setting them free to do their own learning. However, the current study did not investigate in detail what was going on in this PLE when students tried to learn autonomously. It would be interesting if there were empirical studies setting up to explore students' learning process and learner autonomy development process in a PLE like this.

Third, the ILT lesson and practice was one of the most significant features in the RILT approach. However, in the current study, it was merely an independent variable

used as one part of the treatment. In the information and technology age, benefits brought by the training of information literacy skills in relation to technology devices are worth being further researched. Therefore, it would be of value to examine the development of students' information literacy skills as a dependent variable.

Finally, further studies are needed to explore the RILT approach in other levels of education such as high school, secondary school, etc., or other universities and colleges with similar or different contexts. Just so to check the potential of this approach's validity and generalizability levels. Furthermore, more variables could be considered to be examined, such as gender, age, and major, or learners with different mother tongues, etc. These kinds of studies should be able to offer valuable pedagogy implications.

These remarks bring the thesis to a conclusion. The research questions have been answered to different extents. However, some questions have been raised based on the experiment administration situation, the research findings, and discussion, etc. Recommendations for future studies are presented based on these questions to be tackled. Hopefully, the study makes a contribution to the ESC teaching and learning, EFL education, or in-services and pre-service teacher training programs in similar contexts.

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APPENDIXES

APPENDIX A

A questionnaire on students' learner autonomy in learning English-speaking (For student-participants)

Directions:

This questionnaire is designed to gather information about your state of learner autonomy. There is no wrong or right answer. Please read each statement carefully and tick (√) the response which represents your opinions. Your answers will be used confidentially. Thank you for your participation!

Part 1 Personal Information

Your level of English-speaking skills: Low☐ Medium☐ High☐ Not sure☐

Time spent in learning/practicing English-speaking per week (hours) _____.

Time spent in surfing the Internet per day (hours)_____.

Part 2 Questionnaire

The numbers 5 to 1 stand for the following responses: 5 = strongly agree; 4 = agree; 3 = undecided; 2 = disagree; 1 = strongly disagree. Please read each statement carefully and tick (√) the response which represents your opinions.

No.	Statement	5	4	3	2	1
1	I can autonomously evaluate my English-speaking skills.					
2	I can practice English-speaking skills with others on my own initiative.					
3	I can ask teachers or co-learners to evaluate my proficiency and learning methods of English-speaking skills.					
4	I can make study plans for learning English-speaking skills.					
5	I can practice English-speaking skills on my own.					
6	I can recognize my motivation for learning English-speaking skills.					
7	I am aware of my needs in learning English-speaking skills.					
8	I can find strategies that are suitable for me to improve English-speaking skills.					
9	I can set myself tasks to learn English-speaking skills.					
10	I can set myself specific goals for learning English-speaking skills.					

APPENDIX B

A questionnaire on students' learner autonomy in learning English-speaking (For student-participants)

Chinese version

关于学生自主学习英语口语的问卷调查

（学生部分）

说明：

本次的问卷是用于收集关于学生们英语口语自主学习程度的信息。本次问卷没有对错或者标准答案。请认真阅读问题之后在你认为符合你情况的空格下打钩（√）。你的答案将会被保密处理后再进行使用。感谢你的参与。

第一部分 个人信息

你的英语口语水平是：低☐　　中☐　　高☐　　不确定☐

每周学习/练习英语口语的时间（小时）_____.

每天使用互联网的时间 （小时）_____.

第二部分 问卷

以下数字从 5 到 1 依次代表了：5=非常同意；4=同意；3=既不同意也不反对；2=不同意；1=非常不同意。请仔细阅读每一个描述并选择符合情况的打勾（√）

题号	**描述**	**5**	**4**	**3**	**2**	**1**
1	我会对自己的英语口语进行评估。					
2	我能主动跟别人一起练习英语口语。					
3	我会请老师或同学评价指点自己的英语口语学习。					
4	我会就学习英语口语做出学习计划。					
5	我能自己练习英语口语。					
6	我能意识到自己学习英语口语的动力。					
7	我知道自己学习英语口语的短板。					
8	我会寻找适合自己的学习方法来学习英语口语。					
9	我能给自己设立英语口语学习的任务。					
10	我会制定明确详细的英语口语学习目标。					

APPENDIX C

IOC analysis for a questionnaire on students' learner autonomy in learning English-speaking (For student-participants)

Item	Expert A	Expert B	Expert C	Expert D	Expert E	Result of analysis
1	+1	+1	+1	+1	0	√
2	0	-1	+1	0	+1	√
3	+1	+1	+1	+1	+1	√
4	+1	+1	+1	+1	+1	√
5	+1	0	+1	+1	-1	√
6	+1	+1	+1	+1	+1	√
7	+1	+1	0	+1	+1	√
8	+1	0	+1	+1	+1	√
9	+1	+1	+1	+1	+1	√
10	+1	+1	+1	+1	+1	√
Total	9	6	9	9	8	√

Notes:

1. +1= the item is congruent with the objective
2. -1= the item is not congruent with the objective
3. 0=uncertain about this item

Result of IOC:

(IOC=∑R/N)

Item number: 10

R=9+6+9+9+8=41(Scores from experts)

N=5(Number of experts)

IOC=41/5=8.2

Percentage: 8.2/10×100%=82%

The table above shows that the analysis result of IOC is 8.2, and the percentage is 82% which is higher than 80%. Therefore, the items are suitable for adoption in this questionnaire.

APPENDIX D

Test for English-speaking proficiency A (Pre-test)

Description:

This test is an adaptation of the IELTS Speaking test. it is a one-to-one interaction between the candidate and an examiner. It consists of two parts and lasts for around 5 to 6 minutes in total.

Part I Personal introduction and interview

This lasts for about 2-3 minutes. Candidates will be led to introduce himself/herself to the examiner and be asked some questions. The questions are on general topics about their lives. This test will follow the questions behind in general, in accordance with the time and other conditions:

* Could you tell me a little bit of yourself?
* How was your study?
* Do you have any teachers that you like particularly?
* Could you tell me which subject you consider as the most difficult one?
* After class, what activities do you usually have to relax yourself?
* How many people live in your dormitory?
* Can you describe your best friend?
* Do you have any pets? (If yes, could you tell me about it? If no, what animal do you like to keep as a pet?)

Part II Speak about a topic

In this section, candidates are given a topic card and then have 1 minute to prepare after which they must speak about the given topic for 1 to 2 minutes. During the preparation, they can take notes if they like. This lasts around 2 to 3 minutes.

Topic: Describe a memorable journey you have made.

You should say:

you were going

how you were traveling

why you were making the journey

and explain what made the journey so memorable

APPENDIX E

Test for English-speaking proficiency B (Post-test)

Description:

This test is an adaptation of the IELTS Speaking test. it is a one-to-one interaction between the candidate and an examiner. It consists of two parts and lasts for around 5 to 6 minutes in total.

Part I Personal introduction and interview

This lasts for about 2-3 minutes. Candidates will be led to introduce himself/herself to the examiner and be asked some questions. The questions are on general topics about their lives. This test will follow the questions behind in general, in accordance with the time and other conditions:

* Could you tell me a little bit of yourself?
* Could you tell me something about your hometown?
* How has your town changed over the last twenty years?
* What do people do in your town in their free time?
* What do you do in your free time?
* What is public transport like in your town?
* Which kind of public transport you like best and why?
* What do you think we can do to improve the service of public transport?

Part II Speak about a topic

In this section candidates are given a topic card and then have 1 minute to prepare after which they must speak about the given topic for 1 to 2 minutes. During the preparation they can take notes if they like. This lasts around 2 to 3 minutes.

Topic: Describe your favorite shop.

You should say:

where it is

what things it sells

what sort of people are its customers

and explain why you like the shop so much.

APPENDIX F

Consent form for participating the experiment

Introduction:

- You are being asked to be in a research study of English-speaking teaching and learning.
- You were selected as a possible participant through purposive sampling.
- We ask that you read this form and ask any questions that you may have before agreeing to be in the study.

1. Description of the Study Procedures

If you agree to be in this study, you will be asked to do the following things: attend a training lesson on information literacy and 12 ESC lessons.

2. Risks/Discomforts of Being in this Study

The study has the following risks. First, the way of teaching and learning you have in ESC lessons during the experiment may be different from normal classes. Second, your scores of ESC final exam may be affected negatively.

3. Benefits of Being in the Study

The benefits of participation are: first, you will learn how to make use of technology tools to facilitate learning on your own; second, your English-speaking ability and sense of learner autonomy may be improved.

4. Confidentiality

Some of your personal information might be collected for the study (your name, age, gender, score of CET 4, etc.), these information will be used anonymously, and for academic purposes only.

5. Right to Refuse or Withdraw

The decision to participate in this study is entirely up to you. You may refuse to take part in the study. Your decision will not result in any loss or benefits.

Consent:

Your signature below indicates that you have decided to volunteer as a research participant for this study, and that you have read and understood the information provided above.

Subject's signature: _____.

Date: _____.

APPENDIX G

Consent form for participating the experiment

Chinese version

科研实验知情同意书

说明：

- 您正被邀请参与一项关于英语口语教学的学术研究。
- 通过立意抽样，您已被选为本次实验的一名潜在参与者。
- 我们希望您在同意参与本次实验前能仔细阅读本表内容，如有疑问，请及时提出。

1. 实验程序及内容

如果您同意参与实验，您将要参与以下活动：填写相关问卷调查，（部分人）接受相关采访，参与一个信息素养及信息通讯技术培训，参与 10 节英语口语课。

2. 本次实验可能给参与者带来的潜在风险与不适

参与本次实验有以下潜在风险：首先英语口语课将会换一种完全不同的形式上课，参与者也许会短时难以适应；其次，虽然本次实验旨在提高参与者英语口语水平，但由于实验的不确定性，参与者的口语期末分数有可能会受到负面影响。

3. 本次实验可能给参与者带来的益处

参与本次实验有以下潜在益处：首先参与者能够学习如何利用个人科技产品来辅助学习，其次是参与者的英语口语水平以及自主学习意识都有可能提高。

4. 个人信息保密

本次实验过程中会收集参与者少许个人信息（姓名，性别，年龄，四级分数等），这些信息将会被以匿名的方式使用，且只用于学术用途。

5. 可以自愿选择拒绝参与或中途退出本实验

参与本次实验纯属自愿。您可以拒绝参与此次实验。您的拒绝参与不会导致任何相关损失或得益。

同意声明：

在下方签名栏处签名将意味着您决定同意参与本次实验，且您已认真读完并理解以上信息。在您签名以后您会得以保留一份本同意书的复印件。

参与者签名：_____。

日期：_____。

APPENDIX H

A questionnaire on students' perceptions of the intervention

(For the experimental group)

Directions:

This questionnaire is designed to gather information about your opinions of the ESC lessons you participated. There is no wrong or right answer. Please read each statement carefully and tick (√) the response which represents your opinions. Your answers will be used confidentially. Thank you for your participation!

Part 1 Personal Information

Tick " √ " in the right side of the item(s) you have.

Mobile ☐ PC ☐ Others ☐

Time spent in learning/practicing English-speaking per week (hours):_____.

Time spent in surfing the Internet per day (hours): _____.

Part 2 Questionnaire

The numbers 5 to 1 stand for the following responses: 5 = strongly agree; 4 = agree; 3 = undecided; 2 = disagree; 1 = strongly disagree. Please read each statement carefully and tick (√) the response which represents your opinions.

No.	Statement	5	4	3	2	1
1	This new ESC lessons improved my English-speaking ability.					
2	The new ESC lessons strengthened my confidence in learning English-speaking skills.					
3	This new ESC lessons enhanced my sense of learner autonomy.					
4	This new ESC lessons showed me a better way to use technology tools to facilitate study.					
5	I like the way of teaching in the new ESC lessons.					
6	I prefer the traditional way of teaching in previous ESC lessons than that in the new ESC lessons.					
7	I think the way of teaching in the new ESC lessons should be widely applied to other courses.					
8	The new ESC lessons enhanced my interest in learning English-speaking skills.					
9	The new ESC lessons increased the chance of inter-student interaction.					
10	I enjoyed having the new ESC lessons.					

The numbers 5 to 1 stand for the following responses: 5 = strongly agree; 4 = agree; 3 = undecided; 2 = disagree; 1 = strongly disagree. Please read each statement carefully and tick (√) the response which represents your opinions.

APPENDIX I

A questionnaire on students' perceptions of the intervention

(For experimental group)

Chinese version

关于学生对本次实验感知的问卷调查（实验组专用）

说明：

这个问卷是为了收集关于同学们对本次实验的意见与想法。本次问卷没有对错也没有标准答案，请不必顾虑。请认真地读清楚内容之后在你认为最符合你情况的答案里打钩（ √ ）。你的答案将采取不记名的方式被使用。感谢你的配合参与！

第一部分 个人信息

在你拥有的电子产品前打 √

手机☐　　电脑 ☐　　其他 ☐

每周使用在学习或者练习英语口语的时间（小时）_____.

每天使用互联网的时间 （小时）_____.

第二部分 问卷

以下数字从 5 到 1 依次代表了：5=非常同意；4=同意；3=既不同意也不反对；2=不同意；1=非常不同意。请仔细阅读每一个描述并选择符合情况的打勾（√）

题号	描述	5	4	3	2	1
1	新式口语课帮我提高了英语口语。					
2	新式口语课增加了我对口语的学习信心。					
3	新式口语课使我的自主学习意识提高了。					
4	经过新式口语课的学习我能更好地利用科技产品来辅助学习。					
5	我更喜欢新式口语课中的教学模式。					
6	我更喜欢传统的以前的口语课课堂。					
7	我认为新式口语课这样的教学方式应该推广。					
8	经过新式口语课的学习我对学好英语口语更有兴趣了。					
9	新式口语课增加了学生与学生互动的机会。					
10	我享受新式的口语课课堂。					

APPENDIX J

IOC analysis for a questionnaire on students' perceptions of the experiment (For the experiment group)

Item	Expert A	Expert B	Expert C	Expert D	Expert E	Result of analysis
1	+1	+1	+1	+1	+1	√
2	+1	+1	+1	+1	+1	√
3	+1	0	+1	+1	+1	√
4	+1	+1	+1	+1	+1	√
5	+1	+1	+1	+1	+1	√
6	0	-1	+1	0	+1	√
7	+1	0	0	+1	+1	√
8	+1	+1	+1	+1	+1	√
9	+1	+1	+1	+1	+1	√
10	+1	0	+1	+1	+1	√
Total	9	5	9	9	10	√

Notes:
1. +1= the item is congruent with the objective
2. -1= the item is not congruent with the objective
3. 0=uncertain about this item

Result of IOC:
(IOC=∑R/N)
Item number: 10
R=9+5+9+9+10=42(Scores from experts)
N=5(Number of experts)
IOC=42/5=8.4
Percentage: 8.4/10×100%=84%
The table above shows that the analysis result of IOC is 8.4, and the percentage is 84% which is higher than 80%. Therefore, the items are suitable for adoption in this questionnaire.

APPENDIX K

A semi-structured interview on students' perceptions of the intervention (For the experimental group)

Dear students,

This interview is to elicit your opinions on new English-Speaking Course (ESC) you had participated. There is no right or wrong answer. Please feel free to say anything you think and feel about the course. Your response will be kept confidential. Thank you for your participation!

Guiding questions:

1. What do you think of autonomous learning?
2. What do you think and feel about the new ESC lessons during the 11 weeks?
3. Did you have any problems when you were taking ESC lessons during the 11 weeks? (If yes, what problems did you have?)
4. In your opinion, whether the 11 weeks has an effect on improving your English-speaking skills?
5. What do you think about the traditional way of teaching ESC lessons?
6. What do you think of the idea of using your own PC, mobile, or any other kinds of technology products to facilitate English speaking learning?
7. From your perspective, what effects the new ESC lessons have on you regarding learner autonomy development?

8. Can you compare the traditional way of teaching ESC lessons with the new way of teaching in the 11 weeks from your perspective?
9. How do you feel about applying the new approach in the 11 weeks to the ESC lessons or other courses for the whole college?
10. Can you give some suggestions to improve the way of teaching ESC based on the 11 weeks of ESC lessons?

APPENDIX L

A semi-structured interview on students' perceptions of the experiment (For the experimental group)

Chinese version

关于英语口语课的采访问卷 （实验组用）

亲爱的同学们，你们好,

本次的访谈是为了了解你们关于英语口语课的意见与想法。本次访谈没有对错或者标准答案，请自由地说出你们的想法。你的答案会采取不记名方式发挥作用，请不必顾虑保密问题。感谢你的参与！

访谈问题

1. 请谈谈你对自主学习的认识。
2. 请说说你对新式英语口语课的看法和感受？
3. 你在上新式英语口语课的时候遇到过问题吗？如果有，是什么问题？
4. 就你看来，这个新式口语课对提高你的口语水平有帮助吗？
5. 你是怎么看待以前那种英语口语课模式的？
6. 你对使用手机电脑等电子产品来辅助英语口语学习有什么看法？
7. 你认为以这个新方式上的口语课对你的自主学习意识发展有什么作用吗？
8. 请比较性地谈一下以前那种上英语口语的方式与这 11 周的方式的异同。
9. 你认为这个新式英语口语课的教学方式可以广泛运用到其他专业其他班级的英语口语课或者其他课的教学中吗？
10. 可以基于这 11 周的教学方式给英语口语课提出一些建议吗？

APPENDIX M

IOC analysis for a semi-structured interview on students' perceptions of the experiment

(For the experimental group)

Item	Expert A	Expert B	Expert C	Expert D	Expert E	Result of analysis
1	+1	+1	+1	+1	+1	√
2	+1	+1	+1	+1	+1	√
3	+1	+1	+1	+1	+1	√
4	+1	+1	+1	+1	+1	√
5	+1	+1	0	+1	+1	√
6	+1	0	+1	+1	+1	√
7	+1	+1	+1	+1	+1	√
8	+1	+1	+1	+1	+1	√
9	+1	+1	+1	+1	+1	√
10	+1	+1	+1	+1	+1	√
Total	10	9	9	10	10	√

Notes:
1. +1= the item is congruent with the objective
2. -1= the item is not congruent with the objective
3. 0=uncertain about this item

Result of IOC:
(IOC=∑R/N)
Item number: 10
R=10+9+9+10+10=48(Scores from experts)
N=5(Number of experts)
IOC=48/5=9.6
Percentage: 9.6/10×100%=96%
The table above shows that the analysis result of IOC is 9.6, and the percentage is 96% which is higher than 80%. Therefore, the items are suitable for adoption in this interview.

APPENDIX N

A Semi-structured Interview on Teachers' Perception of the intervention (For Teacher)

Dear Mr. XX,

This interview is to elicit your opinions on English-Speaking Course (ESC) you have been teaching. There is no right or wrong answer. Please feel free to say anything you think and feel about the course, your teaching, and students' reaction, etc. Your response will be kept confidential. Thank you for your participation!

Guiding questions:

1. Do you think the RILT approach was effective in improving students' English-speaking skills? If yes, in what ways? If no, why?
2. What do you think of this approach?
3. How do you think of the traditional ESC in comparing with the intervention?
4. Did you have any problems when you were teaching for the experiment?
5. From your perspective, which approach do you prefer, the traditional way to teach ESC or the RILT approach? Why?
6. What do you think of students' performance during the experiment?
7. Do your think the experiment was effective in strengthening students' sense of leather autonomy? If yes, in what way, if no, why?
8. Do you think the RILT approach has the potential to be applied to other courses? If yes, in what way, if no, why?
9. Do you think there are challenges or difficulties for you to teach ESC better? If yes, what are they?

10. Could you give some comments and suggestions to the RILT approach based on your teaching experience to make the approach better?

APPENDIX O

IOC analysis for a semi-structured interview on teacher's perceptions of the experiment

Item	Expert A	Expert B	Expert C	Expert D	Expert E	Result of analysis
1	+1	+1	+1	+1	+1	√
2	+1	+1	+1	0	+1	√
3	+1	+1	+1	+1	+1	√
4	+1	+1	+1	+1	+1	√
5	+1	+1	+1	0	+1	√
6	+1	+1	+1	+1	+1	√
7	+1	+1	+1	+1	+1	√
8	+1	+1	+1	+1	+1	√
9	+1	0	+1	+1	+1	√
10	+1	+1	+1	+1	+1	√
Total	10	9	10	8	10	√

Notes:
1. +1= the item is congruent with the objective
2. -1= the item is not congruent with the objective
3. 0=uncertain about this item

Result of IOC:
(IOC=∑R/N)
Item number: 10
R=10+9+10+8+10=47(Scores from experts)
N=5(Number of experts)
IOC=48/5=9.4
Percentage: 9.4/10×100%=94%
The table above shows that the analysis result of IOC is 9.4, and the percentage is 94% which is higher than 80%. Therefore, the items are suitable for adoption in this interview.

APPENDIX P

Rubric of English-Speaking Tests

Score	Fluency and coherence	Lexical resource	Grammatical range and accuracy	Pronunciation
21~25	• speaks fluently with only rare repetition or self-correction; • speaks coherently with fully appropriate cohesive features • any hesitation is content-related rather than to find words or grammar • develops topics fully and appropriately	• uses vocabulary with full flexibility and precision in all topics • uses idiomatic language naturally and accurately	• uses a full range of structures naturally and appropriately • produces consistently accurate structures apart from 'slips' characteristic of native speaker speech	• uses a full range of pronunciation features with precision and subtlety • sustains flexible use of features throughout • is effortless to understand
16~20	• speaks fluently with only occasional repetition or self-correction; hesitation is usually content-related and only rarely to search for language • develops topics coherently and appropriately	• uses a wide vocabulary resource readily and flexibly to convey precise meaning • uses less common and idiomatic vocabulary skillfully, with occasional inaccuracies • uses paraphrase effectively as required	• uses a wide range of structures flexibly • produces a majority of error-free sentences with only very occasional inappropriacies or basic/non-systematic errors	• uses a wide range of pronunciation features • sustains flexible use of features, with only occasional lapses • is easy to understand throughout; L1 accent has minimal effect on intelligibility
11~15	• cannot respond without noticeable pauses and may speak slowly, with frequent repetition and self-correction • links basic sentences but with repetitious use of simple connectives and some breakdowns in coherence	• is able to talk about familiar topics but can only convey basic meaning on unfamiliar topics and makes frequent errors in word choice • rarely attempts paraphrase	• produces basic sentence forms and some correct simple sentences but subordinate structures are rare • errors are frequent and may lead to misunderstanding	• uses basic pronunciation features • mispronunciations are still frequent but more intelligible
6~10	• speaks with long pauses • has limited ability to link simple sentences • gives only simple responses and is	• uses simple vocabulary to convey personal information • has insufficient vocabulary for	• attempts basic sentence forms but with limited success, or relies on apparently	• uses a limited range of pronunciation features • attempts to control features

Score	Fluency and coherence	Lexical resource	Grammatical range and accuracy	Pronunciation
	frequently unable to convey basic message	less familiar topics	memorized utterances • makes numerous errors except in memorized expressions	but lapses are frequent • mispronunciations are frequent and cause some difficulty for the listener
4~5	• pauses lengthily before most words • little communication possible	• only produces isolated words or memorized utterances	• cannot produce basic sentence forms	• speech is often unintelligible
1~3	• no communication possible • no rateable language			
0	• does not attend			

APPENDIX Q

Plot development and main topics on the 10 ESC lessons

	Team A (N=11)	**Team B (N=11)**	**Team C (N=10)**	**Team D (N=10)**
Roles	HRs in different companies; job applicants for different positions with different backgrounds	Moderator/MC; judges; different student participants with different backgrounds; teacher audiences; parent audiences	Boss/manager/several staffs of a small foreign trade company; businessmen from America, German, Italy, South Africa	President/directors of different departments/staffs in the club; several students who are interested in joining the club
Lesson 1	**Starting scene:** On-campus job fair; **Main plots:** HRs interviewed applicants; applicants shared the experience with one another, etc.	**Starting scene:** CV design contest; **Main plots:** Participants presented their CVs; parents encouraged their children; teachers gave advice; moderator hosted the competition	**Starting scene:** Canton trade fair **Main plots:** The boss and his staffs joined the canton trade fair; businessmen from different countries asked information in the exhibition booth	**Starting scene:** College music club's activities **Main plots:** President of the music club held a meeting on recruiting students to join the club; students interested in music discussed whether to join the music club
Lesson 2	**Continued plots:** HRs informed the interview results; successful applicants started to work; failed applicants revised CVs and tried other companies	**Continued plots:** Judges commented on the presentation; the moderator announced the results for the first round; participants who reached the final celebrated with their parents and teachers	**Continued plots:** Businessmen sent price inquiry to the company via email and phone call; Staffs made replied the inquiry and made an offer for special productions	**Continued plots:** Staffs in the music club distributed recruitment leaflets in the campus; interested students asked information; president and directors of the club answered students' questions
Lesson 3	**Continued plots:** HRs hosted welcome parties for new employees; failed applicants	**Continued plots:** Participants presented in the final; judges commented on the performance; parents	**Continued plots:** Staffs made contracts and faxed to the foreign businessmen; businessmen called back and signed the contracts	**Continued plots:** Students filled in application forms and submitted to the club staffs; president and directors of the club

	Team A (N=11)	**Team B (N=11)**	**Team C (N=10)**	**Team D (N=10)**
	went to other interviews	socialized with teachers		interviewed the applicants
Lesson 4	**Continued plots:** New employees made friends with colleges; HR tried to develop incentive systems to encourage the employees	**Continued plots:** Participants became friends and came back to school life; parents discussed their children's education; teachers made teaching plans	**Continued plots:** Businessmen made payment; Staffs informed their manager and prepared the goods for shipping	**Continued plots:** The club's president held a party to welcome the new members; new members learned to do their job in the club from the senior staffs
Lesson 5	**Continued plots:** HRs of different companies organized a fellowship party to share experience and seek cooperation	**Continued plots:** Judges, participants, and moderator came back to their daily roles (teachers and student); parents went back to work	**Continued plots:** Businessmen received the goods and gave feedback to the staffs; one businessman complaint the quality of goods was low	**Continued plots:** The music club planned to organize a "King of Karaoke" singing contest; a meeting was held to discuss how they would organize it and attract students to join
Lesson 6	**Continued plots:** Employees of different companies became friends and share their experience, daily duty, and salary	**Continued plots:** Teachers held a parents' meeting to let the parents understand the students' performance and hope they spend more time together	**Continued plots:** The boss let the manager and two staffs follow up the goods' quality; the unsatisfied businessman received compensation	**Continued plots:** All the staffs were sent to distribute leaflets to attract students to join the singing contest; students called the president and directors for information
Lesson 7	**Continued plots:** These companies started a project together; several staffs were appointed to work for the project	**Continued plots:** After the parents' meeting, they organized a trip together, including the relevant teachers, students, and parents	**Continued plots:** The manager and two staffs visited the factory; other staffs checked feedback from other customers	**Continued plots:** President and directors invited two local famous musician/professor as the judges; staffs collected all the registration form for the contest

	Team A (N=11)	Team B (N=11)	Team C (N=10)	Team D (N=10)
Lesson 8	**Continued plots:** HRs talked to these staffs and assigned them to work in a branch of one of the companies in another city	**Continued plots:** The parents created a chat group and invited the teachers in to contact each other; the students became close friends	**Continued plots:** The boss and manager decided to look for another factory as their supplier; the staffs dealt with other compensation	**Continued plots:** Preliminary contest was held; judges gave scores to the candidates after they finished singing; president/director/staffs kept order in the contest
Lesson 9	**Continued plots:** The staffs arrived at the branch; they were introduced to the new environment and new colleagues	**Continued plots:** Students planned to join a debate contest together; parents and teachers discussed whether they should agree them to join	**Continued plots:** Three factories were found to be great options; the boss held a meeting to discuss the change of their supplier	**Continued plots:** The final contest was held; judges gave scores after the candidates finished singing; directors/staffs kept order in the contest; president closed up the contest
Lesson 10	**Continued plots:** HRs contacted the staffs to check the project's progress; the staffs cooperated to write a report on the progress	**Continued plots:** Students prepared for the debate contest; parents expressed worries about students' study would be influenced by the contest to teachers	**Continued plots:** The boss and two staffs visited the free factories; the manager and the rest staffs stayed in the company and checked all the goods	**Continued plots:** The music club organized an outdoor BBQ activity to celebrate the successful organization of the contest; the staffs invited the top 5 winners to join with them

CURRICULUM VITAE

Kezhen Liu was born in May 1992, Guangdong Province, China. She graduated from Guangdong University of Petrochemical Technology in 2015 with a Bachelor of Arts degree in Business English. Upon that, she worked as an English-Chinese translator in Guangdong Province, China. From 2016 to 2019，she pursued her M.A. in English language studies in the School of Foreign Languages, Institute of Social Technology, Suranaree University of Technology, Thailand. Her research interests mainly include English as a foreign language teaching and learning, learner autonomy, individual differences, information literacy training, and lifelong learning, etc.