



**LEARNER AUTONOMY: AN EXPERIMENTAL STUDY OF LANGUAGE
LEARNING STRATEGIES, LEARNING ATTITUDES AND MOTIVATION
THROUGH COMPUTER ASSISTED LANGUAGE LEARNING (CALL)
AMONG VIETNAMESE COLLEGE STUDENTS**

A Thesis submitted by:

Van Han Nguyen

B.A, M.ED, M.LAD

For the award of
Doctor of Philosophy

2018

Abstract

This research investigated the effects of Computer Assisted Language Learning (CALL) on Vietnamese students' learner autonomy, or more specifically, how three components of learner autonomy, including students' use of language learning strategies, students' attitudes towards learning English, and their motivation to learn English, changed through CALL within a Learning Management System (LMS). Learner autonomy has been considered as a key strategic focus for educational reforms in Vietnam to encourage students to be more independent and responsible in their language learning. CALL has been found to be effective in fostering learner autonomy in Western countries. However, there is very little research on how CALL can promote learner autonomy in Asian countries, especially in the Vietnamese context where teaching practices and learning behaviors have been strongly influenced by Confucianism.

The research employed qualitative and quantitative methods and was conducted in three phases: the questionnaire validation phase (phase 1); the experimental phase (phase 2); and the interview phase (phase 3). Phase 1 involved validating a questionnaire adapted from previous studies regarding language learning strategies (50 items), attitudes towards learning English (10 items), and motivation to learn English (18 items). Data from 352 students studying at four different colleges in the South of Vietnam were analysed with Exploratory Factor Analysis (EFA). The data showed that a new questionnaire (language learning strategies-37 items, attitudes towards learning English-9 items, and motivation to learn English-15 items) was valid and reliable.

In phase 2 of the study, the experiment involved one hundred students and four teachers from College A in the South of Vietnam. The students were randomly assigned to two experimental groups (25 students in each group) and two control groups (25 students in each group). Two control groups were taught by two teachers, with only the current textbook as teaching aid, while the LMS was integrated in two experimental groups. All groups followed the same curriculum during a twelve-week semester. Before and after the experiment, students in the experimental and control groups were asked to fill out the questionnaire validated in phase 1 as the pre-test and post-test. When the experimental phase ended, two teachers and fifteen students from the experimental groups were invited to take part in the interview phase.

The findings revealed before the treatment took place, there was no difference in students' language learning strategy use, attitudes and motivation between the experimental and control groups. After the treatment, students in the experimental groups employed significantly more learning strategies, especially in the categories of metacognitive and cognitive strategies. In addition, students in the experimental groups changed their attitudes positively as well as they had greater intrinsic motivation. On the contrary, no significant difference in student language learning strategy use, attitudes and motivation was found in the control groups when the treatment ended. The findings led to the conclusion that CALL had positive effects on fostering Vietnamese students' learner autonomy and these findings have implications for English teachers, administrators, teacher educators and for future research in Vietnam.

Certification of Thesis

This thesis is entirely the work of Van Han Nguyen except where otherwise acknowledged. The work is original and has not been previously submitted for any other award, except where otherwise acknowledged.

Student and supervisors signatures of endorsement are held at USQ.

Principal Supervisor: *A/Prof Henriette van Rensburg*

Associate Supervisor: *A/Prof Warren Midgley*

Acknowledgment

On the completion of this research, I wish to express my gratitude to the University of Southern Queensland which has given me the opportunity to conduct my PhD study. Also, I would like to thank the participants of the study who allowed their time, energy, and thoughts to contribute to the research.

Most importantly, my deepest gratitude goes to Associate Professor Henriette van Rensburg and Associate Professor Warren Midgley who have guided, assisted and encouraged me continuously to complete this thesis.

I would also like to thank Associate Professor Peter McIlveen for helping to set up the ground work during the early stages of this study, and Dr Henk Huijser who helped edit my work.

Finally, I wish to express my greatest indebtedness to my mother and siblings for their continuous support during my study journey.

Thank you.

Table of Contents

Abstract.....	i
Certification of Thesis	iii
Acknowledgement	iv
Table of Contents	v
List of Figures	ix
List of Tables	x
Chapter 1: Introduction.....	1
1.1 Introduction.....	1
1.2 Background to the study	2
1.3 Overview of the Vietnamese higher education	4
1.4 Vietnamese English language teaching and learning context.....	5
1.4.1 The emergence of English language in Vietnam	6
1.4.2 Learning practice within the context of Confucianism in Vietnam	7
1.4.3 Challenges of English language teaching and learning in Vietnam	8
1.4.4 Responses to the challenges of language teaching and learning	10
1.5 Study aim and research questions	11
1.6 Significance of the study	12
1.7 Thesis organization.....	13
Chapter 2: Literature Review	15
2.1 Introduction.....	15
2.2 Learner autonomy in language education.....	16
2.2.1 Definitions of learner autonomy	16
2.2.2 Perspectives of learner autonomy.....	18
2.2.3 Components of learner autonomy	21
2.2.3.1 Language learning strategies.....	23
2.2.3.2 Learning attitudes	26
2.2.3.3 Learning motivation	28
2.2.4 Approaches to promoting learner autonomy.....	31

2.3 Computer Assisted Language Learning (CALL) in language education	36
2.3.1 Definitions of CALL	36
2.3.2 Advantages of CALL	38
2.3.3 Limitations and pitfalls of CALL.....	40
2.3.4 Factors influencing the use of technology	41
2.3.5 The roles of teachers when implementing CALL-based initiatives	42
2.4 CALL and learner autonomy	44
2.4.1 Implementation of CALL-based programs and learner autonomy: Empirical evidence	47
2.4.2 Learner autonomy research in Vietnam.....	51
2.5 Theoretical framework	53
2.6 Chapter summary	59
Chapter 3: Methodology	61
3.1 Introduction.....	61
3.2 Mixed method design	62
3.3 Experimental research design	64
3.4 Research paradigm	65
3.5 The research context.....	67
3.6 Phase 1	70
3.6.1 Participants.....	70
3.6.2 Instrument development	71
3.6.3 Procedures.....	73
3.6.4 Data analysis	74
3.7 Phase 2.....	75
3.7.1 Participants.....	76
3.7.2 Instrument development	77
3.7.3 Procedures.....	78
3.7.4 Description of the Learning Management System (LMS) course.....	80
3.7.5 Data analysis.	85
3.8 Phase 3.....	86
3.8.1 Participants.....	86
3.8.2 Interview protocol development.....	86
3.8.3 Procedures.....	87
3.8.4 Data analysis	87

3.9 Triangulation of two data sets	91
3.10 Ethical issues	92
3.11 Chapter summary	92
Chapter 4: Results.....	94
4.1 Introduction.....	94
4.2 Results of phase 1: Questionnaire validation.....	94
4.2.1 Data management, coding and screening	94
4.2.2 Demographic information.....	96
4.2.3 The exploratory factor analysis	98
Factor analysis for the Language learning strategies measure	98
Factor analysis for the Attitudes towards learning English measure	103
Factor analysis for the Motivation to learn English measure	105
4.2.4 Summary of phase 1 results	108
4.3 Results of phase 2: The experiment	109
4.3.1 Personal profiles of respondents	109
4.3.2 Reliability of the questionnaire instrument.....	111
4.3.3 Results of pre- and post-experiment questionnaire	112
Language learning strategies	113
Attitudes towards learning English	116
Motivation to learn English	118
4.3.4 Summary of phase 2 results	120
4.4 Results of phase 3: Interviews	120
4.4.1 Results of interviews with students	122
4.4.2 Results of interviews with teachers	138
4.4.3 Summay of phase 3 results	142
4.5 Chapter summary	142
Chapter 5: Discussion	143
5.1 Introduction.....	143
5.2 Language learning strategies.....	143
5.3 Attitudes towards learning English	151
5.4 Motivation to learn English	154
5.5 Conclusion	159
5.6 Chapter summary	161

Chapter 6: Conclusion.....	162
6.1 Introduction.....	162
6.2 Theoretical contributions	163
6.3 Methodological contributions	165
6.4 Pedagogical contributions.....	166
6.5 Limitations and directions for future research	167
6.6 Conclusion	168
References.....	170
Appendices.....	204
Appendix 3A: Questionnaire for students (phase 1).....	204
Appendix 3B: Questionnaire for students (phase 2).....	212
Appendix 3C: Teaching plan.....	218
Appendix 3D: Interview questions.....	224
Appendix 4A: Descriptive statistics of the 78 questionnaire items.....	226
Appendix 4B: Factor analysis procedures.....	228

List of Figures

2.1 The dynamic model of learner autonomy	22
2.2 Framework of three components of learner autonomy.....	23
3.1 Sequential explanatory design	63
3.2 Diagram of research design employed in the study.	69
3.3 Diagram of the sequential questionnaire validation.....	70
3.4 Research design for phase 2.....	75
3.5 LMS course home page	81
3.6 Conversation topics	82
3.7 Reading activities	83
3.8 Listening activities	83
3.9 Vocabulary activities	84
3.10 Extra activities.....	85
3.11 Data analysis process.....	91
4.1 Themes identified from each group of interviewees	121
4.2 Language learning strategy use related-themes	122
4.3 Attitudes towards learning English related-themes.....	129
4.4 Motivation to learn English related-themes.....	134
4.5 Teacher interview related-themes	138
5.1 The model of learner autonomy in Vietnam.....	160

List of Tables

2.1 Strategy groups and strategy sets	24
3.1 Assignment of students and means placement test scores.....	76
3.2 Lecturer profiles	77
4.1 Participants' academic majors and school in the four-college sample.....	96
4.2 Participants' gender, grade level, computer proficiency, and age in the four-college sample.....	97
4.3 KMO and Barlett's Test of the sample	99
4.4 An extract of the total variance explained when 38 items were included	100
4.5 Factor analysis of the 38 items on the Language learning strategies measure	101
4.6 Inter-factor correlations for subscales of the Language learning strategies measure	102
4.7 KMO and Barlett's Test of the sample	103
4.8 The total variance explained when 9 items were included	104
4.9 Factor analysis of the 9 items on the Attitudes measure	104
4.10 Inter-factor correlations for subscales of the Attitudes measure.....	105
4.11 KMO and Barlett's Test of the sample	106
4.12 The total variance explained when 15 items were included	107
4.13 Factor analysis of 15 items on the Motivation measure	107
4.14 Inter-factor correlations for subscales of the Motivation measure.....	108
4.15 A summary of the result of phase 1	108
4.16 The demographics of students.....	110
4.17 Cronbach's Alpha of three components of learner autonomy	112
4.18 Independent t-test of the pre- and post-tests of the two groups	113
4.19 Paired-samples t-test on the pre- and post-tests of the experimental group	114
4.20 Paired-samples t-test on the pre- and post-tests of the control group.....	115
4.21 Independent t-test of the pre- and post-tests of the two groups	116
4.22 Paired-samples t-test on the pre- and post-tests of the experimental group	117
4.23 Paired-samples t-test on the pre- and post-tests of the control group.....	117
4.24 Independent t-test of the pre- and post-tests of the two groups	118
4.25 Paired-samples t-test on the pre- and post-tests of the experimental group	119
4.26 Paired-samples t-test on the pre- and post-tests of the control group.....	119

Chapter 1: Introduction

1.1 Introduction

Learner autonomy in English as a foreign language education has been researched extensively over the last three decades including a great number of studies done in both Western countries (Holec, 1981; Little, 1991) and Asian countries (Aoki, 2001; Littlewood, 2007). The aims of these studies were to find out ways to make students more autonomous in their language learning process. With different perspectives in fostering learner autonomy, researchers have approached this capacity in different ways. One of the perspectives that has been considered to be effective to promote learner autonomy is a technical perspective (Chu, 2014; Le, 2013; Nguyen, 2014).

A technical perspective refers to Computer Assisted Language Learning (CALL) which is seen as a valuable tool for language learners, especially in serving those who want to improve their learner autonomy. Many universities around the world have recognized and exploited the advantages of CALL in language education (Mukhallafi, 2014; Pham, 2015). Therefore, educators and researchers have become increasingly interested in applying a CALL application, which they then integrate into their language learning and teaching practice to help students succeed in fostering learner autonomy.

There is the vague understanding of the concept and principles behind the links between CALL and learner autonomy, which has made it difficult for CALL practitioners to pursue their research. Learner autonomy can be manifested in different learning behaviors in different socio-cultural contexts (Dang, 2012). Students in one particular situation exercise learner autonomy differently from students in other contexts. It is necessary to understand how CALL affects learner autonomy in a local context to improve the input inserted into CALL with effective teaching methods to promote learner autonomy. In addition, examination of the effects of CALL on learner autonomy is more important in relation to cross-cultural aspects of learner autonomy in the contemporary higher education sector in Vietnam where Chinese influence has a great impact on teaching and learning practices. Vietnamese students traditionally tend to be passive and dependent in their learning as a result (Le, 2013).

To date, there is no research that focuses on three components of learner autonomy, including learners' use of language learning strategies, learners' attitudes, and motivation in language learning, which help develop Vietnamese students' learner autonomy. This study involved an experimental study and was conducted at a Vietnamese college in the South of Vietnam.

The research was aimed at examining the effects of CALL on fostering three components of learner autonomy. This chapter starts with the background to the study, before providing an overview of Vietnamese higher education. The next part presents the emergence of English language use in Vietnam, learning practice within the context of Confucianism, the existing challenges of English language teaching and learning, and the responses from government to those challenges. Also, it highlights the study's aim and research questions as well as the significance of the study. Finally, this chapter provides the structure of the thesis.

1.2 Background to the study

Since Vietnam became a member of a range of international economic associations (for example, the World Trade Organization (WTO) in 2007, and the Trans-Pacific Strategic Economic Partnership Agreement (TPP) in 2015), there has been recognition of the importance of a labour force with good English skills. A suitably qualified labor force is considered to contribute greatly to a nation's economic development in the current era of globalisation and, in the Vietnamese context, of industrialisation. The Vietnamese government has invested in language education and training in order to improve the quality of higher education graduates. Despite this investment, there are not enough suitably qualified graduates to meet the demand for skilled labour. In general, employers find it hard to recruit Vietnamese graduates for a variety of reasons. One of these reasons is that students lack English language competence as they have often failed to achieve the required level in their training programs (Le, 2016; Nguyen, 2008; Nguyen, 2017; Phan, 2015). It is claimed that teaching and learning practices in Vietnam are the reasons why students are failing to meet these standards (Kieu, 2015).

These teaching and learning practices have been influenced by Confucianism. This has come about as a result of a long period under Chinese domination with its resulting impact

on Vietnamese society. The greatest influence of Confucianism is that it still regulates Vietnamese people's social relationships and behavior as well as their attitudes (Le, 2013). In the field of education, Confucianism strongly influences teaching and learning practices. Under this influence, Vietnamese teachers are considered to be good examples for all students to follow, as they have mastered knowledge well and so are the keepers of it (Nguyen, 2017; Wang, 2003). In following their teachers, students need to listen to them without any doubt or asking questions, thus creating a culture where teachers have most of the power, a situation considered normal in Asian culture (Littlewood, 2001).

It is not surprising that in this type of learning situation, students are unable to do learning activities by themselves, but rather need detailed guidelines from their teachers (Phan, 2015). Students are often afraid to raise questions or express ideas in class (Ramsay, 2005) because they are concerned about losing face (Hoang, 2013). Consequently, they are usually passive and quiet in class to protect their 'face' and to avoid being different from other students. These types of behaviours indicate that Asian students generally have low levels of learner autonomy. The importance of learner autonomy has been recognised by the Vietnamese government which has included goals related to it in the National Education Objective 2008-2020 (Government of the Socialist Republic of Vietnam, 2008). In response to this new policy, educational leaders have been seeking ways to foster learner autonomy.

One of the ways that the issue of low levels of learner autonomy could be addressed is through the development of CALL, which has been found to be effective in Western countries. This approach to learning could assist students in becoming lifelong learners by providing them with the knowledge and skills they need to take responsibility for their own learning. There may, however, be difficulties with implementing CALL in the Vietnamese context. As discussed, educational approaches familiar to language teachers and students are strongly influenced by Confucianism which promotes methods that contrast sharply to those used in CALL.

This section has discussed the background to the current study and what follows is an overview of the Vietnamese higher education.

1.3 Overview of the Vietnamese higher education

As a country with the oldest higher learning institution in South East Asia, Vietnam has a long and rich history of learning. Although originally based on Confucian beliefs and ethics, the country's higher education system has evolved significantly in the 20th century, and even more so in the 21st century. Vietnamese people have a deep respect for learning, which is why education plays a vital role in the development of modern Vietnam (Harman & Le, 2010).

After 1986 and the implementation of the *Doi Moi* policy, Vietnam shifted from a centralized socialist state into a partially free economy with state management. Education was a significant part of the reforms, but the country was ill-equipped to deal with the increase in demand for highly skilled labor (Sharidan, 2010). This is why, after 1994 and the lift of the US trade embargo, Vietnam implemented strategic government-led plans to change the education system to suit the needs of a globalized market. Scholarships, foreign schools and colleges, student exchange programs and other initiatives were meant to create a steady base of highly educated individuals who could bear the weight of the changing economy. These measures led to a surge of almost 40,000 exchange students going to study abroad from Vietnam, with this trend continuing its steady increase ever since (Nguyen, 2012).

After twenty years of *Doi moi* policy, Vietnamese education achieved some positive results (Kieu, 2015). However, to meet the country's mission of international integration, Vietnam needs stronger and deeper policies and reforms. Two significant education reforms have been carried out to improve the quality of education and training. *Vietnam's education and training development strategy 2001-2010* was the first reform to be implemented. This strategy focused on the quality of human resources with high levels of education as a key factor for social development and economic growth. Vietnam is still a developing country with a large population. Education and training must be the key to integrate the country into international industrialization and modernization to improve Vietnamese people's living standards (Government of the Socialist Republic of Vietnam, 2001). Thus, *Vietnam's education and training development strategy 2011-2020* was established with a number of goals to reform the educational system and curriculum in order to attain international standards (Government of the Socialist Republic of Vietnam,

2012). The important goal of this strategy was to make Vietnamese students more independent and more active in their studies (Chu, 2014). Students were supposed to take control of their learning by applying learning strategies to enhance their language competency.

Another policy that also took students' activeness and independence into consideration is the Educational policy with number 43/2007/QĐ-BGDĐT (Ministry of Education and Training-MoET) issued by Vietnamese government, in which learner autonomy was mentioned. This policy required all students to be responsible for their studies and to be more confident in learning in order to achieve a good language outcome. According to Nguyen (2014), this policy focused on lifelong learning and autonomous students. Authorities at all universities and colleges were required to follow the central accreditation-based system, in which the enhancement of learner autonomy was included. Teachers were required to adapt their teaching methodologies in flexible ways to meet the demands of learners and objectives of the program and thus to improve the quality of education. It was considered that learners needed to have good learning strategies for knowledge construction and sustainable learning to learn actively and to take responsibility for their studies (Le, 2013; Nguyen, 2014). English language teaching and learning is one of the focuses of Vietnamese higher education. In order to better understand the overall picture of the higher education system, it is necessary to present some issues with respect to English language education, which will be mentioned in the following section.

1.4 Vietnamese English language teaching and learning context

English has rapidly become an international language due to globalisation and the lingering effects of colonialism in recent years. In Vietnam, English has been considered as one of the main foreign languages to be included in the national curriculum.

Undergraduate students need to study English as a requirement for their graduation to make sure that students with good English competence can satisfy the employers' needs. This section provides a description of the emergence of English in Vietnam. It also presents teaching practices and learning strategies within the context of Confucianism in Vietnam, the challenges of English teaching and learning in the current context, and the responses from the government to those challenges.

1.4.1 The emergence of English language in Vietnam

Although traces of the English language could be found in Vietnam since the late 18th century, namely through passing travelers and missionaries that often visited South East Asia, it has not been a language of choice until the late 20th century (Kieu, 2015). Historically, Vietnam has a long tradition of embracing foreign languages, starting with Chinese, which dominated the country for over a millennium, French, and Russian, and finally, after 1990, the preferred choice became English (Do, 2006).

During colonial times, starting in the 18th century, much of what is now Vietnam was under the control of the French, which necessitated that the French language was the preferred second language choice for most citizens. This situation persisted until the end of the World War II, in 1945, when the prevailing influence of the Soviet Union changed the preferences of the population. From then until the end of the 20th century, the preferred foreign language in Vietnam was Russian (Chu, 2014). The prevailing influence of communism lasted through the Vietnam war, at least in the northern parts of the country, but started to diminish with the fall of the Iron Curtain. The onset of globalization, free trade and economic prosperity necessitated stronger ties with the West, for which the English language was the perfect choice (Nguyen, 2012).

The introduction and fast proliferation of the English language in Vietnam has to do with the expansion of multinational companies and the strengthening of economic ties between Vietnam and the West. As the country had all the necessary resources to mass produce consumer goods for the global market, it became one of the fastest growing export markets in the world, alongside Taiwan, China and India. The economic reforms implemented in the early 1990s further removed the country from Russian influence (Do, 2006; Wright, 2002). The large number of multinational corporations that operate plants in Vietnam has mandated that the population be well versed in the language as it secures them advancement opportunities they would not otherwise be given. Knowledge of the English language is pivotal for all individuals who hope to achieve a notable career in politics, law, industry and trade, as almost all dealings are conducted in the English language (Phan, Dat, & Ha, 2014).

In order both to develop international relations and to preserve Vietnamese identity, the spread of English must be expanded in Vietnam. The expansion of English meets not only the short term need of working with the integrated world of economic market, but is also consistent with the long term objectives of developing an independent self-sustaining, determined Vietnamese culture, capable of making its own choices about what it wants to do within an international world. As the global market developed, Vietnam started to not only produce goods for foreign companies, but also play an active role in the market as a separate entity. This also requires the population to be well educated and be able to communicate in at least one foreign language. Considering the immense influence of the English language on a global scale, it is not surprising that it has become the preferred choice for almost all Vietnamese students, either in primary, secondary or tertiary education (Do, 2006).

Since its inception in the 1990s, English has become synonymous with the ‘foreign language’s of choice. It has been introduced in schools, colleges and universities and over time, knowledge of the English language has become not only a necessity, but also a sign of a well-educated individual. Considering the turbulent history between Vietnam, the USA and England, this is a surprising development (Chu, 2014; Nguyen, 2012). In the section that follows, English language learning practice within the context of Confucianism in Vietnam will be highlighted.

1.4.2 Learning practice within the context of Confucianism in Vietnam

Confucianism has a long history and a strong influence in Vietnamese society and culture. The system of beliefs was introduced, re-introduced and made obsolete many times, largely due to the frequent wars with China and the changes in the dynastic structure within the country. However, over time, the Vietnamese society embraced this ideology, and it has become one of the pillars of society until the present (Nguyen, 2012).

As a direct Chinese import into the Vietnamese culture, Confucianism was not welcomed at first. Yet, a brief look at the contemporary culture of Vietnam reveals just how deeply rooted it is into the culture and society. Education is no different; although there are no remaining Confucian learning institutions in the country, the influence of the religion is seen in the basic tenets of English language education (Le, 2013). Students are taught to be

kind and respect others, which is seen as a higher ranking value than knowledge. Although this system of thought has been changed somewhat due to higher permeation of western values into society, it is still the basic moral and ethical norm in Vietnam (Littlewood, 2001; Nguyen, 2012).

Despite the increasing modern influence, Confucianism is deeply embedded into the daily lives of Vietnamese citizens. In this context, English learning practice in Vietnam poses a significant challenge for outsiders, who may not be acclimatised to the social, cultural and philosophical underpinnings of that society (Nguyen, 2012; Pham, 2010). Tran (2013a) argues that there is a significant difference between the learning practice of students from a Confucian cultural heritage and other students. Students from some Asian countries, including Vietnam, demonstrate little flexibility and have a tendency to adapt their learning styles towards a specific task or learning approach. For example, Le (2007) discusses the overreliance of Vietnamese students on memorizing materials as opposed to indulging into productive practices, such as communication or language exchange.

At the same time, as argued by Tran (2013a), students with so-called Confucian heritage are often characterized as having a passive learning style, heavily dependent on memorizing, recognition of the teacher's authority, and being quiet within the classroom. In addition, there is very little room for in-class negotiation and/or power-play, which is customary in the West. Students are expected to listen and attend all of their classes, something that is deeply rooted within Confucian ideology. Examinations are frequent and standardized, allowing teachers to test their student's participation and attention levels (Nguyen, 2011; Nguyen, 2017).

Some of the attributes traditionally perceived as “Western” or “Confucian” have resulted in challenges in English language teaching and learning in the Vietnamese context, and these challenges will be addressed in the following section.

1.4.3 Challenges of English language teaching and learning in Vietnam

The educational context in Vietnam is characterised by a number of peculiarities, particularly concerning teaching students English. Le (2007) notes that although a number of foreign languages are spoken in the country, English remains by far the most popular

one. As a result of demand by students and adult learners to master English, Think (2006) reports the emergence of a high number of language centers and schools throughout the country that specialise in teaching English as a foreign language (EFL). Despite this, the quality of English and other foreign language teaching in Vietnam remains poor as teachers struggle with a number of issues. For example, according to Nguyen (2017), one of the key problems is teaching students to communicate in English in real life situations. The need for students to communicate effectively in the English language was recognized by the government of Vietnam, especially after the realization that the current level of English knowledge does not allow students to communicate effectively. This has to do with the poor quality of English education, at all levels of education. Even college students with years of training often fail to communicate effectively.

The two main issues pinpointed by the government were teaching methods and learning practice that did not support learners. The teaching methods were mostly teacher-centered, and lacked a progressive learning curve and the use of conversational skills. Students had to memorize grammatical rules while not being able to learn how to communicate. Since the Vietnamese model of learning centers around the teacher, learners were unable to engage in activities that could incentivize them to pursue the spoken language (World Bank, 2006).

Phan (2015) has illustrated how language proficiency can limit job opportunities of undergraduates. Intel Company planned to invest more capital in their manufacturing in Ho Chi Minh City and recruited undergraduates majoring in engineering to work for them. There were 2000 candidates invited for the interview but only 40 candidates were hired because the English communication of most applicants was not good enough. It is obvious that Vietnamese students should develop good English proficiency to take part in the competitive labor market, otherwise finding a good job will be difficult.

In order to deal with the above mentioned challenges, the Vietnamese government has found it necessary to carry out some responses and these responses are explained in the next section.

1.4.4 Responses to the challenges of language teaching and learning

With regard to foreign language improvement for students, Decision 1400/QĐ-TTg was signed and dated 30 September 2008 by the Prime Minister and was a decision on the Approval of the Project entitled “Teaching and Learning, Foreign Languages in the National Education System, Period 2008-2020” with the following goal:

... by 2020 most Vietnamese students graduating from secondary, vocational schools, colleges and universities will be able to use a foreign language confidently in their daily communication, their study and work in an integrated, multi-cultural and multi-lingual environment, making foreign languages a comparative advantage of development for Vietnamese people in the cause of industrialization and modernization for the country. (Nguyen, 2013)

The aim of this specific project was to enhance students’ language output. In order to achieve this aim, two of its mentioned components were firstly the promotion of the use of computers and technology in English language learning and teaching; and secondly learner autonomy focusing on the development of active classrooms and effective use of learning strategies. Such discussion has also played an important role in education reform and is an organizing concept within many EFL classrooms. Strategies in developing learner autonomy are assumed to empower learners around the acquisition of language and to make them better able to comprehend and retain material due to greater motivation in learning.

With the encouragement from the government, technological elements have increasingly been implemented in the teaching of EFL to provide autonomy to students, which is important to a sense of mastery and true integration of the foreign language (Dang, 2012). Over the past few years, Vietnam has become one of the countries that has the fastest growth rate of not only computer use but also internet use. According Pham (2015), the percentage of internet users in Vietnam was over 35% in 2013, which translates into more than 31 million users. Significantly, the use of the internet for school activities was also rather high, accounting for more than 70%. The internet and the use of computers have made a great contribution to all fields of society, especially language education.

The Ministry of Education and Training issued the Circular 01/2014/TT-BGDĐT on 24 January, 2014 which was aimed at specifically requiring tertiary graduates to meet a certain English proficiency level as a requirement when they complete their studies. The government demands that students of all majors have good language competence before entering the marketplace. The Circular, adapted and developed from the Common European Framework of Reference for Languages (CEFR), outlines six levels from A1 (least competent), A2, B1, B2, C1, and C2 (most competent) (Ministry of Education and Training, 2014). According to this Circular, students of a non-English major need to attend 350 to 400 45-minute periods of English class and obtain a B level when graduating. This required level allows them to use general and technical English language to communicate effectively in the workplace. Meanwhile, students undertaking their major in English are requested to attend 700 to 800 45-minute classes to achieve a C1 level so as to understand complicated documents written in English and communicate in all situations (Nguyen, 2017).

It is clear that the Vietnamese government has made an attempt to deal with challenges in language education as mentioned above in order to make students more proficient in foreign language with the focus on the use of technology and learner autonomy. The next section highlights the research aim and questions of this study.

1.5 Study aim and research questions

The study set out to explore the effects of CALL on learner autonomy, and more specifically, how students' language learning strategies, attitudes and motivation changed through CALL. The research was carried out to answer the following main research question and three sub-questions:

How does Computer Assisted Language Learning (CALL) affect Vietnamese college students' learner autonomy?

The sub-questions are:

1. To what extent do Vietnamese EFL students change their use of language learning strategies as an effect of completing a CALL intervention?

2. To what extent do Vietnamese EFL students change their attitudes towards learning English as an effect of completing a CALL intervention?
3. To what extent do Vietnamese EFL students change their motivation to learn English as an effect of completing a CALL intervention?

1.6 Significance of the study

The use of computers and CALL materials have been integrated into English language teaching and learning, providing both teachers and students opportunities and resources to achieve language outcomes effectively. Research has been conducted to explore ways to enhance learner autonomy in the world. However, there is a little available research on enhancing learner autonomy through CALL in Vietnam, the available research mainly focusing on this issue using a survey to understand students' perceptions of learning autonomy. By contrast, this study expands on the existing methods to include a mixed-method design to contribute research evidence to better understanding and more effectively exploring learner autonomy in EFL education in Vietnam.

In addition, there have not been any studies that explore the components of learner autonomy in Vietnam. This study supplies necessary insights into components of learner autonomy drawing on Vietnamese students' opinions and thereby directly making a contribution to the process of enhancing learner autonomy in language education. Thus, the findings in the study will contribute to improved knowledge about the enhancement of learner autonomy and the use of technical approaches in EFL field in a non-Western setting.

The questionnaire developed and validated during phase 1 can be a reliable tool for further research regarding learner autonomy. The large number items in the questionnaire that have been refined in phase 1 of this study ensure its validity and reliability. Similar research can adapt the questionnaire to measure the components of learner autonomy in EFL study.

The insights gained from the intervention can help education policy makers in terms of clinical and policy realms so that the Vietnamese Ministry of Education and Training can use it as a valid reference to set up strategies for the development of language education in

the coming years. The insights could also alter the perceptions of educational administrators and EFL teachers in relation to applying CALL in English language teaching and learning.

1.7 Thesis organization

This thesis is divided into six chapters. Chapter 1 is the introductory chapter, starting with the background to the study before providing an overview of Vietnamese higher education. The next part presents the emergence of English language in Vietnam, learning practice within the context of Confucianism, the existing challenges of English language teaching and learning, and the responses from government to those challenges. Also, it highlights the study aim and research questions, as well as the significance of the study.

Chapter 2 reviews relevant literature on learner autonomy and CALL. This chapter discusses the definitions of learner autonomy. It then continues to present components of learner autonomy and different perspectives of learner autonomy as well as the approaches to promoting learner autonomy. Next, it briefly provides definitions of CALL and its advantages and disadvantages. Factors influencing the use of technology and the roles of teachers are also analyzed in this chapter. The discussion includes documenting the previous studies of learner autonomy and CALL in a global context and in Vietnam. Finally, the chapter discusses the study's theoretical framework.

Chapter 3 discusses the research design of the study. First, it develops methodological issues in learner autonomy and CALL, which is followed by a research perspective consistent with the theoretical framework discussed in chapter 2. It also presents the research purposes, research questions, and participants. The chapter further deals with considerations on issues of ethics.

Chapter 4 details the results of the study conducted in the current investigation. The results are presented based on mixed methods design. The findings from the questionnaire regarding learning strategies, attitudes, motivation and interviews are taken into consideration.

Chapter 5 contains a full discussion, interpretation and evaluation of the results. It brings the theoretical and empirical findings together and examines the trustworthiness of the study. Discussion in this chapter directly addresses the research questions. Links to other literature are drawn where possible.

Chapter 6 presents the conclusion and limitations of the research and how it can be utilized for future research. The chapter highlights the contributions made by this study and provides implications for policy makers and stakeholders at a tertiary level in Vietnam.

Chapter 2: Literature Review

2.1 Introduction

Learner autonomy has attracted the attention and interests of many researchers during the last three decades. It is considered to be important in general education and language teaching and learning. Learner autonomy plays a crucial role in both traditional face-to-face and online learning environments. The increasing use of technology in the teaching of language aligns with learner autonomy, allowing for independent interaction with materials (Gardner & Miller, 2011; Hashmi, 2016; Haverila, 2012; Morrison, 2008; Ushioda, 2005). In other words, technology assists learners in enhancing the important components of learner autonomy, namely language learning strategies, attitudes towards learning language, and motivation to learn the target language. This chapter addresses the literature regarding learner autonomy and Computer Assisted Language (CALL), and it is divided into three main parts.

The first part of the chapter presents key elements of learner autonomy. It starts with a review of definitions of learner autonomy, which is followed by an analysis of four perspectives on learner autonomy including psychological perspectives, technical perspectives, socio-cultural perspectives, and political-critical perspectives. The main components of learner autonomy are mentioned to provide readers with the focus of the study. Finally, there is a description of approaches to promoting learner autonomy.

The second part of this chapter is about CALL with attention being paid to its effects on learner autonomy. This part starts with definitions of CALL. It then provides a review of advantages, limitations and pitfalls of CALL. Factors influencing the use of technology and the roles of teachers are also explained. This part focuses mainly on how CALL fosters learner autonomy by providing empirical evidence and discussing learner autonomy research in Vietnam.

Finally, there is an introduction of the theoretical framework consisting of four models/systems. The first model is constructivist learning theory (Piaget, 1980), a common model that has been adopted by researchers to explore the way learners construct knowledge through independent learning. The second model is the community of practice

as explained by Wenger, McDermott and Snyder (2002) to help understand the process of learning. The third model is Vygotsky's notion of socio-cultural theory, as proposed by Lantolf and Thorne (2006), which describes the importance of social and cultural environments for individual development and learning. The fourth model is self-determination theory, as developed by Deci and Ryan (1985), which examines intrinsic motivation and extrinsic motivation. Within this integrated framework, the foundation and logical connections of the three components of learner autonomy were conceptualised through CALL.

2.2 Learner autonomy in language education

Learner autonomy has grown into a distinct area of research, particularly in language studies. As Brown (2009) notes, researchers studying the acquisition of language began to focus on learner autonomy towards the end of the 1970s. As they examined the importance of learner autonomy in language education, they also focused on responsible and autonomous language learners, who seemed best able to learn and retain language. This section will first give definitions of learner autonomy.

2.2.1 Definitions of learner autonomy

A number of definitions of learner autonomy exist in language education literature. Holec (1981) defines learner autonomy as an "ability to take charge of one's own learning" (p. 3) and this point of view has been reinforced by many other researchers. For example, Nunan (2003) and Benson (2001) contend that learner autonomy is an ability to put one's own study into effect. In order to study effectively, learners need to know how to determine the objectives, define the content, select methods and techniques to be used, and monitor and evaluate the learning procedures (Holec, 1981).

Recently, Nguyen (2014) and Phan (2015) see autonomy as a situation in which learners take responsibility for all of the decisions regarding their learning, and they debate that an autonomous learner is able to take charge of all the implementation of those decisions. This implies that the learners are able to plan and manage their learning, assess its values independently and even recommend the mark that their work deserves. Similarly, Richard

and Schmidt (2002) define learner autonomy as the principle that learners should be encouraged to maximize their responsibility for what they learn and how they learn it.

According to Nunan (1997), “a fully autonomous learner operates independently of the classroom, teacher or textbooks” (p. 193). However, Palfreyman’s (2003) does not agree with that point of view. He claims that being an autonomous learner does not mean that a student needs to avoid any reliance on sources of help, but it means being conscious of those sources in various situations. Thanasoulas (2000) seems to agree with Nunan when he argues that an autonomous learner is able to set goals, choose materials, and evaluate his or her final work.

Psychological attributes are mentioned in Little’s (1991) definition of learner autonomy, which is “a capacity for detachment, critical reflection, decision making and independent action” (p. 4). According to Nguyen (2014), this definition raises questions about what are the most important components of autonomy. She claims that learners’ attitudes towards their learning and metacognitive strategies in language learning are crucial. Autonomous learners are described as those who are motivated in their learning to make choices independently (Dam, 2008; Littlewood, 1996). Littlewood (1996) further argues that motivation and the skills to choose appropriate learning strategies are two components that autonomous learners should have. These components of learner autonomy are investigated in this study.

Little (1999) considers autonomy as self-regulation, before moving on to divide the concept of autonomy into two levels of self-regulation. The first form of autonomy is proactive autonomy, which is reflected by learners’ ability to “take charge of their own learning, determine their objectives, select methods and techniques and evaluate what has been acquired” (Littlewood, 1999, p. 75). This kind of autonomy is consistently associated with western learners and it appears to share the idea with Holec (1981) and Little (1991). The second form of autonomy is reactive autonomy- “the kind of autonomy which does not create its own directions, but, once a direction has been initiated, enables learners to organize their resources autonomously in order to reach their goal” (Littlewood, 1999, p. 75).

Although the term ‘autonomy’ has been defined in different ways over decades, there is broad consensus that autonomous learners need to understand the purpose of their learning tasks, take responsibility for their studies, monitor and evaluate their learning performance, and have critical abilities (Benson, 2001; Benson, 2007b; Glas & Cárdenas-Glaros, 2013; Little, 2007; Weinstein & Preiss, 2017). In addition, the practice of learner autonomy requires motivation in learning, a positive attitudes, an ability to select appropriate learning strategies, and to be proactive in self-management and in interaction with others (Dang, 2012; Jácome, 2012; Little, 1991; Nguyen, 2009).

This section has described how learner autonomy is defined and a detailed discussion on autonomy with its perspectives will be presented in the section that follows.

2.2.2 Perspectives of learner autonomy

There are different versions or perspectives on learner autonomy in foreign language education including psychological, technical, socio-cultural, and political-critical (Benson, 1997; Oxford, 2003). Firstly, according to the *psychological perspective*, learner autonomy is regarded as a construct of learner characteristics, including attitudes and abilities that enable an individual to take control of the learning process (Benson, 2013b; Oxford, 2003). Smith (2000) suggests that the performance of learner autonomy can be enhanced with a combination of a proper attitudes, skills and knowledge. Skills are related to the ability to choose materials, methods and peers to work with in class (Horváth, 2005). The psychological perspective focuses on emotional characteristics of individuals as the foundation for autonomy enhancement. Benson (2001) identifies autonomy in terms of control, which includes three cognitive processes: metacognitive knowledge, reflection, and attention. Metacognitive knowledge involves learner abilities in planning goals, monitoring their study process, and evaluating their performance (Wenden, 1998). Little (2003) claims that autonomous learners are not only fully aware of their decision making but also understand learning goals and course objectives. Reflection, self-reflection, evaluation, and self-evaluation as part of learning strategies are the most important values in promoting learner autonomy (Horváth, 2005).

The psychological perspective emphasising learners’ motivation, learning styles, and positive attitudes is in line with constructivist theories that focus on the role of learners in

the target language construction process. Within the constructivist paradigm, internal understandings, transformations and developments, along with external help, can make learning more effective (Benson, 2011; Benson, 2013b). According to Benson (2013b), constructivism takes broader attitudes, interpretations, and learning styles into consideration because they allow learners to be responsible for their learning through their individual negotiation of meaning.

Secondly, the *technical perspective* has driven much of the current interest in learner autonomy. With globalization, the demand for English has increased, but the developing trajectory of technology has also provided many new options for learning; it has “provided teachers and researchers with further opportunities to explore, analyze, and learn more about professional and academic communication” (Arno-Macia, 2012, p. 89).

Technological approaches are already somewhat ingrained in the teaching and learning of language because technology has long been used in the teaching of language. This perspective emphasizes the contexts in which learners teach themselves without teachers’ presence, having been provided with the learning strategies they need to deal with the learning activities (Reinders & White, 2016). These types of contexts, which include classrooms and self-access centers, can promote learner autonomy (Benson, 2011; Oxford, 2003). Technology is integrated into the classroom, but learners can also work alone. They select their level of challenge and the tasks on which they will focus, and they can work ahead of a class or review as needed. The ideal environment is full of rich resources, increases learner motivation, and encourages learners to use the best learning strategies.

In those contexts, the autonomous learners do not need any intervention from facilitators or teachers (Benson, 2011; Dickinson, 1987). Students can control their own learning by making all the decisions and carrying out learning activities on their own. Phan (2015) suggests that it is necessary to help the students control the curriculum and gain access to resources and then let them decide how, what, and where to learn. Learners need to work alone in ‘bookish’ situations to perform their study tasks as part of good learning practice, which aims to promote their responsibility for their own study. The more robust technology packages can also be better tailored to the needs of specific learners and programs. Where once technology tools presented simplistic approaches to learning, such tools have now become complex and nuanced, and thus better able to aid autonomous learning.

Thirdly, another perspective influencing autonomous learning in language classrooms is the *socio-cultural perspective*. Though it is widely accepted as positive that learners become the focus within an autonomous learning framework, and it is understood that the learning and empowerment elements will translate into the individual's experience within society, there are also various socio-cultural elements that can impact on how the autonomous learner model may best be implemented (Feryok, 2013). Within the socio-cultural perspective, learner autonomy is shaped and enhanced through learners' interactions with their learning environment and it is considered to be a socially situated construct (Smith & Ushioda, 2009). This is because autonomy is now widely recognized to have both a social and an individual dimension (Feryok, 2013; Sinclair, 2000). The impacts of external environments need to go through an internalization process with the involvement of learners' psychological factors that help them gain control over their learning activities (Dang, 2010). Therefore, this perspective is firmly grounded in the work of Vygotsky (1978), especially his idea of the Zone of Proximal Development (ZPD), which gives us a better understanding of the learning process. The ZPD suggests that less capable learners are able to solve problems and achieve learning outcomes under adult guidance and more capable peers' support in facilitating the learners' participation process and motivation (Vygotsky, 1978). It emphasizes that learner autonomy does not happen in an isolated manner (Kostina, 2011). Oxford's (2003) socio-cultural theory highlights the importance of interaction in human capacity development. In this sense, learner autonomy development "is placed within a wider socio-cultural context in a particular place and time with dynamic interactions between learners and either more capable others, old timers or the context itself" (Le, 2013, p. 44). According to Turuk (2008), and Fani and Farid (2011), students need to be given chances to exercise their actual zone of development in order to have responsibilities as well as abilities to be successful in their learning.

The fourth perspective is called the *political-critical perspective*, which involves issues of access, power, control and ideology (Oxford, 2003). In this perspective, agency involves the power to control one's situation and to exercise choice. Learners try to rule their own world because freedom and power belong to the concept of learner autonomy (Benseman, 2013; Dang, 2012). With the political-critical perspective, personal identities such as age, gender, class, religion, and culture need to be addressed in an attempt to enhance learner autonomy. Benson (1997) believes that it is essential to consider factors such as individual actions and beliefs as well as social contexts to help learners control the learning context

and processes in terms of autonomy. This perspective does not seem as broad and complex as Oxford's. Autonomous learners attempt to give up their former identities and beliefs to adopt new ones, which they believe will be useful for their development in the target community. In addition, students make use of possible alternatives to control the situation and demonstrate their power in life (Feryok, 2013; Kaur, 2011).

This section has reviewed four perspectives of learner autonomy. With the psychological perspective, learner autonomy is considered as a capacity with two interrelated elements, namely "behavioral" and "(meta-) cognitive" (Benson, 2001). While the technical perspective emphasizes the learning environment in which learner autonomy may develop, the socio-cultural perspective values the social interaction between learners and surrounding environment and the political-critical perspective is concerned with learners' power, ideology and access. Three constructs, namely language learning strategies, attitudes, and motivation have also been mentioned in some of these perspectives. My study has intended to provide a combined perspective of learner autonomy, enabling students to develop their psychological attributes (attitudes and motivation) and learning strategies in order to actively control over their learning performance. In the section that follows, language learning strategies, learning attitudes and motivation will be focused on as the components of learner autonomy.

2.2.3 Components of learner autonomy

It is due to the recognition of the importance of autonomy in earlier research that learner autonomy has become an increasingly significant area of research study. Schmenk (2005) points out that "recent publications mark learner autonomy's evolution into a field of its own, with its own research and pedagogical agenda" (p. 107). Much of the research on language learning, and specifically on EFL, discusses the important components of autonomy and ways to best increase it. With the aim of developing the components of learner autonomy, my study has adapted Tassinari's (2010) dynamic autonomy model, as shown in Figure 2.1.

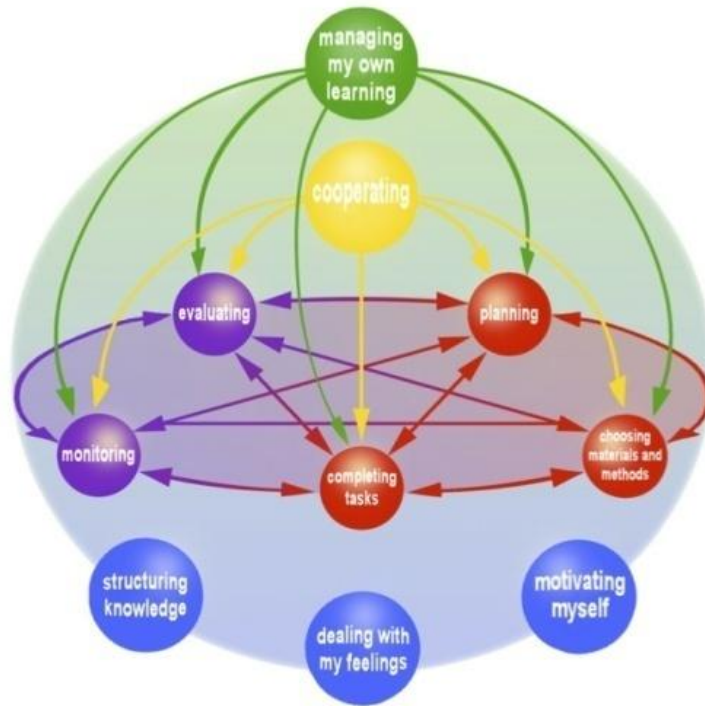


Figure 2.1: The dynamic model of learner autonomy (Tassinari, 2010, p. 203)

According to Tassinari, the dynamic model describes three dimensions: (1) a predominantly action-oriented dimension comprises planning, choosing materials and methods, completing tasks, monitoring, evaluating, cooperating, and managing my own learning; (2) a predominantly cognitive and metacognitive dimension includes structuring knowledge; and (3) a predominantly affective and motivational dimension includes dealing with my feelings, motivating myself. In addition, a social dimension that is concerned with cooperation is integrated into each component.

However, in learning and teaching processes all these aspects are closely interrelated. As such, for the purposes of my research, these aspects are grouped into three main components to reflect learner autonomy according to technical and psychological perspectives, which were discussed in section 2.2.2. The three new components are comprised of: (1) language learning strategies: planning, choosing materials and methods, completing tasks, monitoring, evaluating, cooperating, managing my own learning, structuring knowledge, and cooperating; (2) attitudes: dealing with my feelings; and (3) motivation: motivating myself. Other researchers (Kormos & Csizér, 2014; Rezaei, Keivanpanah, & Najibi, 2015; Thanasoulas, 2000) believe that learning strategies,

learners' attitudes, and motivation are the important components in promoting learner autonomy. The new framework of these three components of learner autonomy, which has now been developed and employed in my study, is shown in Figure 2.2.

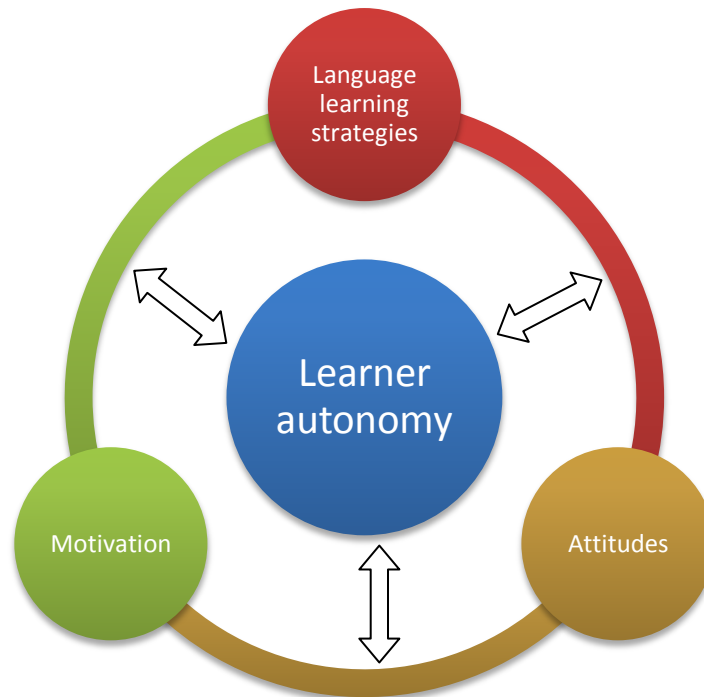


Figure 2.2: Framework of three components of learner autonomy

The relationship between each component and learner autonomy will be analysed in greater detail below.

2.2.3.1 Language learning strategies

Language learning strategies are defined as plans, steps or actions that should be undertaken to achieve a particular goal or objective (Oxford, 1990). The importance of learning strategies for language learning should receive attention because they are considered to be tools that help learners to be active and self-directed in their studies (Hsiao & Oxford, 2002; Oxford, 1996; Zarei & Rahami, 2015). The use of learning strategies encourages learners to improve and regulate their learning performance in order to become good language learners (Chuin & Kaur, 2015; Khaldieh, 2000; Oxford, Griffiths, Longhini, Cohen, Macaro, & Harris, 2014). As a result, learning strategies have been extensively employed in the language education field.

According to Ellis (1994), and Griffith and Oxford (2014), Oxford’s classification of learning strategies is mostly used by researchers because it is the most comprehensive classification. Oxford (1990) classifies learning strategies into direct and indirect strategies (see Table 2.1). There are six categories within both direct and indirect strategies. Direct strategies include memory, cognitive and compensation strategies, while indirect strategies are comprised of metacognitive, affective and social strategies. Memory strategies enable learners to store and retrieve new information of the new language. Cognitive strategies are the ones learners use to manipulate the language materials in a direct way. Compensation strategies are strategies through which learners understand the language despite knowledge gaps.

Table 2.1: Strategy groups and strategy sets (Source: Oxford, 1990, p. 17)

Direct Strategies		Indirect Strategies	
I. Memory strategies	A. Creating mental linkages B. Applying images and sounds C. Reviewing well	I. Metacognitive strategies	A. Centering your learning B. Arranging and planning your learning C. Evaluating your learning
II. Cognitive strategies	A. Practising B. Receiving and sending messages C. Analysing and reasoning D. Creating structure for input and output	II. Affective strategies	A. Lowering your anxiety B. Encouraging yourself C. Taking your emotional temperature
III. Compensation strategies	A. Guessing intelligently B. Overcoming limitations in speaking and writing	III. Social strategies	A. Empathising with others B. Cooperating with others C. Asking questions

Metacognitive strategies are used to evaluate learners’ language learning patterns and coordinate the learning process, and metacognitive strategies include planning, monitoring, problem-solving, and evaluating strategies. Hu (2016) and Turner (2009) argue that metacognitive strategies are associated with self-study. Affective strategies refer to strategies learners use to gain control and regulate personal emotions, attitudes, and values. Social strategies are strategies that can help learners work with others and understand the target culture and the language. While direct strategies are involved in the

mental process and have direct influence on the target language, indirect strategies support and manage language without having an impact on the target language (Oxford, 1990).

Learner autonomy is related to learning strategies (Hsiao & Oxford, 2002; Kumaravadivelu, 2006; Oxford, 2001; Williams & Burden, 1997). Learning strategies help learners take responsibility for their own learning, which is important for effective language learning (Liu & Chang, 2013; Nikoopour & Hajian, 2015). This assumption means that when learners know how to use the strategies in their learning, they become autonomous and autonomous learners need to not only learn independently of the learning context but also negotiate and collaborate with other students (Foster & Ohta, 2005). Learners have their own learning style, and their task is to find out what learning strategies are best for them to become more active and vigorous participants in the process of language learning. Being socially autonomous will help students to develop not only their own learning qualities and that of their peers, but also a degree of sensibility toward other learners (Griffith & Oxford, 2014). Subramaniam and Palanisamy (2014) argue that interaction is vital in the development of effective language learning because it increases the possibility of a greater amount of input becoming available, thus considerably enhancing the opportunities for the activation of fundamental processes that are essential to learner development.

The relationship between learner autonomy and learning strategies has been found in some studies (Alhaysony, 2017; Cohen, 1998; Green & Oxford, 1995; Kato, 2005; Shi, 2017). Elizondo and Garita (2013) carried out a study on Hong Kong learners to investigate the role of learner autonomy and possible consequences on achievement. The findings concluded that the students would have more successful linguistic achievement if they had a higher level of autonomy and this level of autonomy highly depended on the use of learning strategies. In addition, metacognitive strategies were used the most and social strategies were used the least by the participants among six strategies asked about in the questionnaire. Based on the results, metacognitive strategies were recommended to focus on in terms of training in the language curriculum and it was the responsibility of both teachers and students to boost autonomy levels in teaching and learning.

In another study about learner autonomy and learning strategies, Liu (2015) explored the association between field of study, gender, language proficiency, and the use of learning

strategies. The main aim of the study was to discover the link between learner autonomy and use of strategies. One hundred and fifty university freshmen taking English classes in China answered Oxford's (1990) 50-item version of the Strategy Inventory of Language Learning (SILL) and a 43-item questionnaire on learner autonomy. The study revealed some interesting findings. First of all, the level of learner proficiency increased because their use of strategies increased. This result was similar to previous studies (Lee & Oxford, 2008; Sheu, 2009). Secondly, there was a high level of correlation between learning strategies and learner autonomy. Cognitive and metacognitive strategies had the strongest association with autonomy. The use of cognitive strategies contributed the most to the prediction of learner autonomy, followed by the use of metacognitive strategies.

Many researchers consider that learning strategies help students develop language competency and use language effectively (Ardasheva, Wang, Adesope, & Valentine, 2017; Bozorgian, 2012; Bruen, 2001; Chand, 2013; Chen, 2002; Chou, 2017; Griffiths, 2003; Fewell, 2010; Nasihah & Cahyono, 2017; Sedhu, Mohd, & Harun, 2017; Wharton, 2000; Wei, Chen, & Adawu, 2014; Young, 1997), and among six substrategies of learning strategies, metacognitive strategies appear to contribute greatly to the enhancement of learner autonomy (Çakici, 2015; Chen & Pan, 2015; Çubukcu, 2017; Fuchs, 2017; Habibian, 2015; HYTE, 2002; Ismael, 2010; Koban-Koç & Koç, 2016; Lamb, 2015; Little, 1991; Nunan, 2003; OECD, 2008; Rahimi & Katal, 2012; Zarrabi, 2016). The intention of my study is to reveal how learning strategies are useful and effective in Vietnamese language teaching and learning context in terms of supporting students to be more autonomous.

2.2.3.2 Learning attitudes

Another important component of learner autonomy is attitudes. Wenden (1998) defines attitudes as favorable or unfavorable valued beliefs, and evaluations towards an object, person, institution, or event. According to Gardner (1980), and Montana and Kasprzyk (2008), attitudes is considered as the sum total of an individual's instinct and feelings about any outcomes or attributes of performing the behavior. A learner's attitudes, which is a crucial factor in language learning, needs to be paid attention to in any learning context (Bristi, 2015; Gardner, 1980; Guryay, 2016; Tetik, 2016; Wenden, 1971), and if learners do not have a positive attitudes towards learning, their learning does not happen

easily. Subramaiam (2008) argues that Asian students do not have positive attitudes towards their English language learning. Attitudes has a big role to play in determining a learner's performance and language learning process and it is argued that attitudes is comprised of three elements. The beliefs and thoughts of the language learners about the knowledge that they receive forms the first element, which is called cognitive. The second element is affective and describes the emotions of learners towards learning activities, while the third element is behavioral, which involves a learner's actions or tendency to adopt special learning behaviors (Saidat, 2010).

A number of recent studies have addressed the role of attitudes in fostering learner autonomy in the learning of foreign languages in different countries with different cultures. For instance, Yan (2007) conducted a study on postgraduate students' autonomous English learning (AEL) in a Chinese context. The study employed a questionnaire to ask students to report on their attitudes towards AEL, involving 292 postgraduate students from seven universities. The questionnaire was designed and developed based on combined theoretical input suggested by the literature. The findings concluded that Chinese postgraduate students held positive attitudes towards AEL and they had a medium level of autonomous learning behaviors. Yan's study suggested that future research may examine the effects of other learning variables such as motivation and use of strategies on students' learner autonomy. This suggestion supports the need for my research.

Two other studies have investigated the relationship between attitudes and learner autonomy. Gholami (2016) conducted a quasi-experiment design to investigate the impact of self and peer assessment on learner autonomy among Iranian learners. In his study, Gholami surveyed 25 participants in the control group and 24 participants in the treatment group. The participants were in the age range of 28-35 with intermediate English level. The study found that the mean of the treatment group was higher than that of the control group and ($p < 0.05$) showed a positive impact of self assessment on learner autonomy. The study revealed that attitudes of the participants in the treatment group changed positively and they considered themselves to be active entities in language learning compared to the control group participants.

Similar to Gholami's (2016) project, Zarie and Elakaei (2012) carried out research in which 108 intermediate level EFL learners were asked to respond to a questionnaire aimed at examining the relationship between learner autonomy and attitudes. The questionnaire was based on a five-point scale with 21 items to obtain participants' beliefs about autonomy and 27 items regarding their attitudes. Zarie and Elakaei pointed out that the relationship between attitudes and learner autonomy of EFL learners was significant to some extent and that there was a trend. According to these two researchers, an essential factor accounting for the finding was the socio-cultural educational setting. Students usually listened to teachers without raising any questions or concerns, which is similar to the context in Vietnam where classes are predominantly teacher-centered.

These three empirical studies have enriched the research literature about the relationship between learner autonomy and attitudes in the field of language education. The instruments were mainly questionnaires and if more qualitative methods, such as class observations or interviews had been employed, the results may have provided more insight and depth. This has important implications for the design of my research to fully explore the level of attitudes that Vietnamese students have to develop their ability to assume an active and independent role in their learning.

2.2.3.3 Learning motivation

Dörnyei (2001) defines motivation as "an abstract, hypothetical concept that we use to explain why people think and behave as they do" (p. 1), and more specifically related to the educational context, motivation is considered as "a general way of referring to the antecedents (i.e. the causes and origins) of action" (Sella, 2014, p. 26). In the words of Wachob (2006), "learners' motivation depends on a variety of factors, one of which is how they perceive their own achievements. Other factors include how autonomous learners feel; classroom methodology, especially fun and engaging methods; learners' relationship to the classroom group, as well as to the society at large; how they view their teacher and power relationships within the educational institution; and their own anxiety in classroom activities such as speaking and test talking" (p. 99).

The link between learner autonomy and motivation is clearly mentioned in self-determination theory (SDT) as outlined by Deci and Ryan (1985). According to this

theory, intrinsic motivation and extrinsic motivation are two main components to decide the level of autonomy. Intrinsic motivation (IM) refers to the pursuit of an “activity in the absence of a reward contingency or control” (Deci & Ryan, 1985, p. 38). A student with IM usually finds the learning tasks pleasant and enjoyable. Vallerand (1997) proposed a three-part taxonomy of IM. The first type of IM is IM-Knowledge, which involves doing an activity to explore new ideas and develop knowledge. A second type, IM Accomplishment, refers to motivation to master a task or achieve a goal. The third type, IM-Stimulation, stimulates learners to do an activity for aesthetic appreciation or fun and excitement. Some researchers (Dang, 2012; Ma, 2012; Zarie & Hashemipour, 2015) agree that students who are intrinsically motivated are inclined to study independently. One factor that leads to intrinsic motivation is when students are not controlled in their learning (Alkhoudary, 2015; Dickinson, 1995), which makes it easier for them to determine their learning goals (Mallik, 2017; Nicholson, 2013; Oga-Baldwin, Nakata, Parker, & Ryan, 2017; Scharle & Szabo, 2000).

Extrinsic motivation (EM) is one kind of motivation to engage in activity as a means to an end (Ngo, 2015). External forces including praise, tangible rewards, or punishment are used to foster extrinsic motivation. Vallerand (1997) distinguished three levels of EM: external regulation, introjected regulation, and identified regulation. External regulation involves external sources such as tangible benefits or costs. A second type of extrinsic motivation is introjected regulation which refers to reasons for performing activities due to pressure that individuals have incorporated into the self. Identified regulation refers to motivation to perform an activity for personally relevant reasons and to thereby achieve a valued goal. Extrinsic motivation has a short-term impact on language outcomes. Students learn English not only because of intrinsic motivation (Alkhoudary, 2015; Bi, 2015; Freiermuth & Huang, 2012) but they also learn English as a result of extrinsic motivation (Bradford, 2007; Tran, 2007; Yashima, 2009; You & Dörnyei, 2014).

Motivation is a factor that is seen as linked to learner autonomy (Dörnyei, 2001; Fazey & Fazey, 2001; Girmus, 2001; Liu, 2015; Spratt, Humphreys, & Chan, 2002; Üstünlüoğlu, 2009; Wachob, 2006). Deci and Ryan (1985) put extrinsic motivation and intrinsic motivation on a continuum from the left to the right respectively. The two forms of motivation differ in their relative autonomy and individuals with intrinsic motivation are considered the most autonomous. Ma (2012) explored how motivation could reinforce

learner autonomy through developing a negotiated syllabus, which was aimed at motivating Chinese students in their language learning. The syllabus required participants at DaLian University of Technology to undergo various stages of producing language and it focused on the value of learner autonomy, learner-centeredness, and shared decision making. The negotiated syllabus was different from a traditional syllabus because it concentrated on the skills and processes in learning languages rather than on the end products of these processes. Through the research on the development of the syllabus, the researcher found that students were more responsible for their learning because they were highly motivated. The study concluded that the intrinsic motivation of learners was stimulated when they were given the power to make decisions about why to learn, what to learn and how to learn.

Liu's (2015) study investigated the relationship between three constructs: sense of responsibility, engagement in learning activities, and perceived ability and motivation. In this research, 150 first year university students who were non-English majors enrolled in a regular private university in Central Taiwan took part in a survey. Results indicated that students had a sense of responsibility for their own learning. In addition, there were significant differences in all three dimensions of learner autonomy at different motivation levels, which meant that students could acquire a higher level of autonomy with greater motivation. The researcher also suggested that it was necessary for teachers to provide students with more encouragement and more task-based activities so that students could become more autonomous learners.

Kormos and Csizér (2014) conducted a more in-depth study to analyze the interaction between motivation, self-regulation strategies, and autonomy, across three different age groups, from high school students to adults in Budapest. They asked 638 language learners to complete a questionnaire that included 55 items. The results were consistent across all ages and showed that strong motivation and self-regulatory strategies lead to the enhancement of learner autonomy. These two researchers added new insights to the field of second language learning when they revealed that "motivational variables exert their influence on autonomous learning behavior with the mediation of self-regulatory strategies" (p. 294). The limits of these studies are that the levels of motivation and autonomy, and the use of strategies were self-reported by the students, which cannot be considered objective.

It is suggested that students should be equipped with an effective model of motivation (Girmus, 2011; Williams & Williams, 2011) in order to develop intrinsic motivation because this type of motivation has a positive impact on students' learning performance and learner autonomy (Hartnett, St. George, & Dron, 2014; Dörnyei & Ushioda, 2011). This has encouraged me to investigate the types of motivation that assist Vietnamese students in gaining their interest and passion, which is the ultimate aim of learner-centered education.

To summarize, language learning strategies, learning attitudes and motivation are three essential components that enhance students' ability to learn, especially to learn independently and to make decisions concerning their learning. In an attempt to help students become autonomous learners, these three components should be taken into consideration. In line with this consideration, the following is a description of the six approaches to promoting learner autonomy.

2.2.4 Approaches to promoting learner autonomy

Various studies have been conducted to find ways to develop learner autonomy because the development of learner autonomy is important in formal education (Nguyen, 2014). Benson (2003) argued that "autonomy can be fostered, but not be taught" (p. 290). In addition, research "show[s] that autonomy can be taught to any learner, regardless of level of proficiency, with positive results" (Carracelas-Juncal, 2012, p. 470). This section describes different approaches to promoting learner autonomy. These approaches include resource-based approach, technology-based approach, curriculum-based approach, teacher-based approach, classroom-based approach, and learner-based approach.

The first approach is the *resource-based approach*. It is claimed that skill building entails the establishment of opportunities in the surroundings of learners, which is the primary objective of learner autonomy. Resource-based approach emphasizes independent learners' interactions with learning materials (Benson, 2013a). According to Sheerin (1991), language students are provided with guided self-discovery tasks based on authentic data, questionnaires designed to help them exercise control over learning plans and take responsibility for their learning. Students can select educational materials, challenge their beliefs about language learning, study guides for language practice

activities, and evaluate their own language learning processes. These activities can support learners in developing skills through discovery and experimentation processes with the essential factor being freedom of choice (Benson, 2011). Learning materials that are helpful to learners in terms of exploiting study opportunities are external to the materials themselves (Sheerin, 1991).

Mechanisms for exploring opportunities and resources are provided to enable students in accessing comfortable environments (Gardner & Miller, 2011). Through self-access and self-supervision, it is possible to acquire learning insights through opportunities and materials within secure surroundings, given that the holistic objective is for the learner to obtain communication skills through the resources provided (Cranker & Servains, 2013). For instance, self-access centers may be used to encourage students to be less dependent on teachers in constructing their own practice tasks (Borg & Al-Busaidi, 2012; Littlejohn, 1997). Self-access centers influence the independence of learners, which is a transition from being dependent on their teachers. Once there is a provision of learning materials, it is easier for learners to access specific details about their studies, and gradually outgrow their dependence on their teachers (Chung, 2013). The factors that make self-access centers more successful and meaningful are students' learning activeness, availability of resources and materials, consideration given to the learning environment, and understanding of its functions. Learner autonomy advocates learner-centeredness, rather than teacher-centeredness, as a way of cultivating independence within an individual.

The second approach is the *technology-based approach*, which includes Computer-Mediated Communication (CMC) and Computer Assisted Language Learning (CALL), and emphasizes learners' independent interactions with educational technologies. Internet-based activities that can foster learner autonomy include emails, online discussion boards, and web authoring software (Benson, 2001; Klaus, 2012). Learners can develop control of, and responsibility for, their learning, and access collaborative interaction opportunities (Braine, 2004; Hamilton, 2013; Hanson-Smith, 2003). Ludwig (2016) affirms that the socio-cultural aspect pays attention to the settings of learners, in terms of what technologies they have access to. Also, learners interact more with their computers in the process of researching different topics during their studies. Teachers are encouraged to leverage such learning habits of students by uploading more learning resources online. In as much as technology-based research encourages e-learning, it focuses on the roles of

teachers in developing for example blog posts, so that it is easier for students to access and engage with online platforms (Dang & Robertson, 2010). The degree of control offered to learners can be limited by the structure and content of CALL materials. This needs to be addressed because technology has an essential role to play in language education.

The *curriculum-based approach* is the third approach that is used to foster learner autonomy. In most learning institutions, negotiating a particular subject has been a challenge, especially if it is the mandatory subject. According to Benson (2016), the curriculum-based approach encourages negotiations between both learners and facilitators to achieve quality learning content. Decision-making is prioritized under this technique, given that the learners are in a better position to articulate their goals and preferences. Additionally, learners' roles, virtues and values can easily be extracted when using a curriculum-based approach, particularly when it comes to learning procedures. Hu (2016) indicates that drawing responsibilities and benefits from learners may become a challenge, which is why the use of five major principles for curriculum specification is necessary. Learner objectives, the procedure of learning the language, responsibilities, learner's long and short-term strategies, as well as reflection on learning, are being articulated as the five principles. The major motive for implementing and using the five principles is to find means of transferring responsibility from the tutors to the learners, in a gradual and polite manner. To foster autonomy of learning in this respect, a person must consider creating awareness amongst learners in terms of the importance of goal identification, learning alternatives, and strategies (Sakai, Takagi, & Chu, 2010). As such, learner autonomy is enhanced with the growth of learning awareness. Under this approach, teachers are encouraged to adopt and adapt their teaching abilities to help students identify their goals and strategies as part of the learning processes. In short, curriculum-based approach extends learner control to the curriculum as a whole. Students interact with teachers to determine the content and procedures of learning in the syllabus.

The fourth approach is the *teacher-based approach*, emphasizing the primary role of the teacher and teacher education in fostering learner autonomy (Benson, 2001; Borg & Al-Busaidi, 2012). In this approach, teachers can provide learners with assistance in planning and implementing their independent language learning because they have knowledge and expertise to do so. Raya and Sircu (2013) suggest that a teacher's belief about learner autonomy will have a great impact on the practice of developing learner autonomy in the

classroom. Teachers need to help students plan work, choose learning materials, master language skills and evaluate themselves. If they do this well, students can study independently to complete the learning tasks. If teachers are faced with challenges in developing autonomy, teacher education programs should provide them with the development of personal theories and models of teaching (Hacker & Barkhuizen, 2008). Vieira, Barbosa, Paiva, and Fernandes (2008) have the same recommendation, which is that teacher education should consider action-based inquiry in designing pedagogy for autonomy in school contexts. It is advisable to consider certain elements when desirability and feasibility of learner autonomy are determined (Borg & Al-Busaidi, 2012). For example, to what extent are students able to recognize their strengths and weaknesses and evaluate their learning process, or to what degree can students make decisions regarding course objectives, using teaching methods and learning materials, and in-class activities and tasks.

The teacher-based approach also places a focus on teacher autonomy (Feryok, 2013; Nguyen, 2014). Teacher autonomy is not defined by the maximum skills implemented by teachers but by the ways in which they practice roles and responsibilities within the classrooms. Thus, there is an emphasis on what, as well as how, teachers practice autonomy in classrooms. In particular, the role of teachers in this approach is to organize a structured learning process, which is evaluated through the assessment of abilities within teachers (Raya & Sircu, 2013). Teacher autonomy is the development of both capacities and skills of teachers, which has advanced over the years (Aoki, 2008). The practice of a teacher-based approach is through teachers' commitments to achieve different goals and roles within a specified period. Contributing to the actual perception of relevance within the classrooms, the abilities and skills highlighted by teachers should influence learner autonomy in a positive manner.

The fifth approach is the *classroom-based approach*, emphasizing students' control of planning and evaluating classroom learning, which may increase learners' motivation and autonomy through collaborative learning in classrooms (Nguyen, 2010; Shao & Wu, 2007). According to Benson (2016), teachers and students are supposed to discuss goal-setting, learning for assessments and evaluation as well as the responsibilities in a language classroom context. In most learning institutions, the classroom-based approach is used to advance learner autonomy and instill more abilities during the learning process. In

this light, the classroom process encourages extraction of resources and other learning activities within the classroom. Specifically, the mechanism advocates for teachers' negotiations with learners on goals and strategies set, and after that, evaluating and assessing the newly agreed upon goals. During this process, passive learners may become active ones and acquire more learning skills that will benefit them in future, especially in terms of language learning. Miller and Ng (1996) suggest that students need assistance to deal with critical feedback from their classmates and be provided with appropriate evaluation techniques to maximize the benefits from peer assessment activities.

Finally, the *learner-based approach* is considered to be most in line with autonomous learning. In this approach, learners are given the skills to become better learners (Benson, 2013a). It is concepts such as facilitation and problem-solving that are keys to the potential benefits of a learner-centered approach. The idea of training learners, by contrast, emphasizes a kind of uniformity that is antithetical to the spirit of learner-centred teaching (Dislen, 2011; Liu & Chao, 2018; Ushioda, 2011). Training learners for the need to strategize their goals and roles within different learning institutions is reflected in a learner-based approach. For instance, developing metacognition in learners with an ultimate aim of developing advanced skills and abilities or motivation describes the practice of a learner-based approach. Teachers should help students reach their potential and be independent during the learning process (Betts, Carey, & Kapushion, 2016). There is a positive result when a learner-based approach is used since most learners become motivated and determined to achieve their goals and objectives. On the other hand, mutual understanding of a learner's motivation and autonomy is still a challenge, especially in defining the specified roles for both learner and teacher. Motivation is a fundamental element affecting a student's choice to learn in an independent manner (Ushioda, 2011; Phan, 2015). Therefore, cooperative work is required because it stimulates learners' motivation and fosters learner autonomy (Díaz Rezamí, 2014; Kojima, 2012; Yuliani & Lengkanawati, 2017). Learner-based approaches are influenced by the passion of each student in committing to a specified discipline or task within the classroom.

A concern with this approach, however, is that it may define "autonomy" too broadly, eschewing learning methods and learning styles that had previously been regarded as useful. Rees-Miller (1993) notes that "successful learners may use strategies not approved by the good language learner model or may prove successful without using recommended

strategies” (p. 261). Ng and Confessore (2010) suggest that five learning styles, namely competitive, participant, collaborative, dependent, and independent, have a close relationship with autonomous learners. Learners’ characteristics should be more focused in relation to autonomous learners and learners’ awareness of their roles, and the learning process needs to be taken into consideration within a learner-based approach (Nguyen, 2014).

The aforementioned approaches have different distinctive features. While teacher-based and classroom-based approaches emphasize students’ abilities to plan, implement and evaluating learning process, learner-based approach focuses on learners’ awareness of their roles. Learners’ interactions with learning materials are taken into consideration in resource-based approach. By contrast, technology-based approach stresses learners’ interactions with technology, for example CALL and a more detailed review of CALL will be presented in the section that follows.

2.3 Computer Assisted Language Learning (CALL) in language education

CALL has driven much of the current interest in language education. With globalisation, the demand for English has increased, but the developing trajectory of technology has also brought about many new options for learning; in addition, it has “provided teachers and researchers with further opportunities to explore, analyze, and learn more about professional and academic communication. For many years now, IT has also played a key role in language learning” (Arno-Macia, 2012, p. 89). The development of more robust applications allows students and teachers to work with more complex technologies in the interest of language learning. This section starts with the definitions of CALL.

2.3.1 Definitions of CALL

Beatty (2013) defines CALL as “... any process in which a learner uses a computer and, as a result, improves his or her language” (p. 7). This definition is regarded as very broad; however, its advantage is that it covers a wide range of activities that constitute CALL. It has also been pointed out that instead of being regarded solely as a technological tool, CALL is now understood as including a range of elements that relate to theoretical frameworks, pedagogical theories, technological tools, and design of learning materials

(Beatty, 2013). Levy and Stockwell (2006) believe that the technologies that constitute CALL go beyond simply communication tools. Instead, they also include various generic and specialized tools, such as online dictionaries, games to intensify the process of learning, or writing processors. CALL provides opportunities for more comfortable and effective means of language manipulation when compared to conventional learning methods such as live teaching. The CALL-based methodology offers various tools for context-sensitive help (such as pop-up rules of word definitions), and ensures the students can study at their own pace, as well as a time and place that best suits them (Hubbard, 2014; Levy & Stockwell, 2006).

Dang (2011) notes that the term CALL is frequently used in relation to a number of other concepts, namely CAI (Computer-Aided Instruction); CAL (Computer-Assisted Learning); CALT (Computer-Assisted Language Teaching); CMC (Computer-Mediated Communication); ICALL (Intelligent Computer-Assisted Language Learning); TELL (Technology Enhanced Language Learning); and WELL (Web Enhanced Language Learning). The other important concepts used throughout my thesis are CALL materials and Learning Management System (LMS). Levy and Stockwell (2006) define CALL materials as "... the wide range of CALL artifacts or products that language teachers and designers create using technological resources" (p. 3). According to Dickinson, Brew and Meurers (2012), this term is commonly used to refer to software, online courses, learning packages, web sites, and tasks that assist students during the process of learning. While Chun (2011a) recommends to view learning environments as a separate entity, Levy and Stockwell (2006) argue for its common nature with other CALL materials and therefore suggest to keep it under this umbrella of terms.

One term relevant to the purpose of my research, and mentioned above, is the LMS, which is interpreted as any form of discussion or communication that is conducted via the use of Web 2.0 tools. Today's education students can be best served by an LMS designed around the assumptions of particular learning theories. Learners need the opportunity to play a part in the development of their learning. Their learning is facilitated when they have the opportunity to tie it to real-world applications. Learners are self-directed, and so allowing them the opportunity to personalise the learning program through activities such as setting their own goals is important. An effective LMS for language programs should bring together students and teachers in a user-friendly, learner-centered environment. In such a

community, students and teachers will share resources, ideas, and own the learning together (Gillet & Hamori-Ota, 2017). These notable features of LMS appear to be suitable for the course design employed in my study.

Before developing an understanding of CALL, it is necessary to learn about how CALL is defined and this section has just addressed it. Then, it is also important to be aware of the benefits of CALL as well as its limitations and pitfalls, which will be taken into consideration in the following two sections.

2.3.2 Advantages of CALL

There are a number of advantages of a CALL approach when compared to more conventional language learning methods (Chun, 2011a; Hani, 2014). First of all, practitioners note that CALL provides language learners with more independence and flexibility compared to traditional classrooms (Afrin, 2014; Rost, 2002). Dina and Ciornei (2013) point out that students may increase their learning effectiveness through choosing a time and place most suitable for their learning needs. CALL can also enhance the effectiveness of teachers by being used in conjunction with traditional classroom exercises (e.g., verbal practice, dialogues, etc.) (Pathan, 2012). More merits of CALL are described as follows.

A number of theoretical and empirical studies have looked at possible mechanisms regarding how CALL may influence a student's motivation and attitudes during the learning process (Joshi, 2011; Kalanzadeh, Soleimani, & Bakhtiarvand, 2014; Kozlova & Priven, 2015; Lee, 2017; Tayebinik & Puteh, 2012; Uchidiuno, Ogan, Yarzebinski, & Hammer, 2016). Stockwell (2012a) confirms that the application of computer-based learning programs can serve as a strong stimulus for students. This can be explained by the fact that modern technology and language learning tools provide a number of opportunities for fun, game-based and interactive language learning (Lai & Kritsonis, 2006). Computer-based learning has been demonstrated to reduce the level of stress and anxiety in students (Huang & Hwang, 2013). Robertson, Ladewig, Strickland, and Boschung (1987) have conducted an empirical study looking at levels of stress between two groups of students: classroom (tutor learning) and home-based (computer learning). Interestingly, the latter group scored higher on variables such as self-esteem, suggesting

that computer-based learning is an important motivational tool. Ushioda (2005) suggests that within the context of CALL, high levels of student motivation are an important enhancer of the learning practice, and may also be a byproduct of a learning intervention. Ushioda (2005) compared motivation levels amongst students who studied in conventional classroom environments and computer-based environments. According to her observations, the level of motivation among students engaged in computer-based learning was higher.

Hauck and MacKinnon (2016) report that in the context of computer-based classrooms, students who were studying a second language were more prone to engage in student-initiated debates and discussions when compared to students in face-to-face language learning classes. Students from the latter were mostly relying on their instructors to initiate a discussion (Kohn & Hoffstaedter, 2015). Ushioda (2005) notes that students may be more likely to take initiative and produce more output, despite existing differences in personalities. CALL develops student motivation and positive attitudes by making some key routine exercises more interesting (Mubaslat, 2012). For example, grammar and vocabulary training exercises can be enhanced with the use of animation, automated messages (“Excellent!”, “Great job!”, or “Oops, try again!”). Constant feedback motivates students and maintains rapport between the student activity and the computer. It has been indicated that receiving such regular feedback is practically impossible within traditional class settings, where tutors have to assist multiple students, and therefore do not have time for it (Duus & Cooray, 2014). Unlike self-studies based on the usage of books and CDs, computers have an ability to interact with students through pointing out mistakes, and providing an explanation behind the correct answer (Higgins & Gomez, 2014). Thanks to authentic materials offered by CALL, students are able to learn language effectively (Kohn & Hoffstaedter, 2017; Sydorenko, Daurio, & Thorne, 2017).

Previous studies have shown that CALL environments impact on learning strategies (Dryer & Nel, 2003; Tsai & Talley, 2014). Amir (2006) observed that Malaysian students could use metacognitive strategies effectively. The observations were made during students’ online tutorial sessions. Results revealed that the majority of students were more involved in planning, monitoring and evaluation than they were before the course—they frequently used a wide range of metacognitive strategies that enabled them to enhance their autonomy. Amir (2006) suggested that it would be useful to provide online learners

with learning strategies that have been successfully employed through the study. A more recent study by Wei, Chen and Adawu (2014) in its investigation into language learning strategies in CALL environments found that Vietnamese and Korean students became more engaged in using planning and organizing strategies. The study also concluded that integration of graphic organizer writing software into teaching metacognitive planning and organizing strategies can help students become better strategy users. The studies done by Amir (2006), and Wei, Chen and Adawu (2014) showed that students only focused on certain types of metacognitive strategies. Students need to be guided how to employ different learning strategies appropriately with the support of CALL.

2.3.3 Limitations and pitfalls of CALL

A significant body of literature exists that is concerned with the pitfalls and limitations of CALL-based approaches to language learning (Dina & Ciornei, 2013; Lai & Kritsonis, 2006; Riasati, 2012; Ushioda, 2005). As one of such limitations researchers have discussed an overreliance of tutors on computer-based materials (Rahimpour, 2011; Ushioda, 2005). Ushioda (2005) argues that this may lead to inflexible learning practice, limited in scope and in terms of applied tools. In addition to that, a number of students who engage in CALL-based learning find independent handling of the materials and routines difficult, and as a result such students may lose motivation and interest to study (Ushioda, 2005).

Among other key factors that negatively affect the use of CALL is a lack of time and motivation among teachers and assisting staff to understand and learn the technology (Dawson & Heinecke, 2004; Feng, 2012). Başöz and Çubukçu (2014) point out that teachers should be given time to learn about the new tools, as well as develop a plan of how they can most effectively integrate them into the current learning process. Apart from time limitations, a number of studies have reported hardware and infrastructure-related problems as a key limitation of CALL implementation (Buabeng-Andoh, 2012; Divaharan & Lim, 2010). Dawson and Heinecke (2004) believe that a teacher's motivation to integrate the technology is rather low, unless they are provided with help and assistance from their colleagues and support staff. Ely (1999) brings up the issues of administrative assistance and general leadership as important factors determining whether CALL intervention will be successfully implemented within a given setting. Divaharan and Lim

(2010) argue for project-based CALL implementation, which involves proper planning, collaboration between teachers and departments, and task distribution. This wide scale project-focused approach facilitates effective integration of CALL into the existing system of teaching second languages (Divaharan & Lim, 2010).

Chapelle (2001) has further created a set of six criteria to minimize the demerits of a given CALL-program, among which the aspect of learner autonomy is indirectly implied through a number of criteria. As discussed by Chapelle (2001), the assessment criteria are as follows: learner fit, potential of the program to teach a specific language, practicality and overall positive impact, authenticity, main focus. Blin (2004) suggests viewing the criterion of positive impact as an ability of a specific CALL program to enhance and develop a student's independence. A number of studies focus on theoretical assessment of the relationship between CALL and learner autonomy (Little, 2007), however Chapelle (2001) highlights the importance of an integrated approach, in which evidence-based information is complemented by theoretical findings and frameworks.

Despite all the above-mentioned disadvantages of CALL, the advantages seem to be much more attractive, since more and more people depend on the internet and more institutions integrate technology into learning curriculum. The use of technology in language teaching and learning is influenced by various notable factors and teachers seem to have a considerable role in CALL implementation. These issues will be discussed in the next two sections as an attempt to maximize the merits of technology.

2.3.4 Factors influencing the use of technology

Various research suggesting that a number of factors directly or indirectly concerning students affect the effectiveness of technology-mediated learning: a student's age and socioeconomic status, learner attributes (e.g., motivation, interest), and previous learning experiences and learning styles (Blackwell, Lauricella, & Wartella, 2014; Selwyn, Gorard, & Williams, 2001; Wang, Wang, Wang, & Huang, 2006). For example, Selwyn et al. (2001) have demonstrated how overall negative attitudes towards computer-based teaching approaches (among students, school administration and teachers) and computer illiteracy reduce effectiveness of CALL. Toyoda (2001), similar to Selwyn et al. (2001), identified students' attitudes towards technology prior to the CALL program implementation as an

important factor capable of predicting its overall effectiveness, and impacting on learner autonomy. Toyoda (2001) and Anderson (2008) argued that it is the combination of the following factors, which is most crucial to the outcomes of a CALL initiative: (1) availability of the tested technology; (2) students being computer literate; (3) availability of support staff and peers, and efficient communication between the stakeholders; (4) technical problem free.

In addition, Wang et al. (2006) agree that such factors as student learning strategies and assessment types have a significant impact on learning efficiency within a technology-mediated environment. As demonstrated by Vaishnav (2013), learning strategies of a student are the key factor determining level of academic achievement. Wang et al. (2006) have conducted an empirical study investigating the role of learning strategies in the effectiveness of e-based learning. According to their results, ‘assimilators’ and ‘divergers’ demonstrated the highest performance, while ‘convergers’ demonstrated lower levels of performance, which was similar to ‘accommodator’-types of learning strategies.

Formative assessment taken by students is another important factor affecting learning success, and according to Wang et al. (2006), computer-based assessments have a number of advantages when compared to other forms of assessment. Computer- or web-based assessments reduce the level of overall stress experienced by students and therefore allow them to fully concentrate on the task. This leads to better performance, which in turn positively affects self-efficacy and enhances success in CALL-based learning.

2.3.5 The roles of teachers when implementing CALL-based initiatives

Researchers report on the important role of teachers and learning assistance in the success and effectiveness of CALL-based initiatives (Levy & Stockwell, 2013; Ushioda, 2005). Wudthayagorn (2000) has empirically demonstrated a strong positive correlation among the learning class and routine and whether a student likes their teacher or not. According to the empirical evidence, an instructor is part and parcel of the process of learning, and determines students’ attitudes towards it regardless of whether it is a traditional face-to-face session, or a computer-based language learning program (Ushioda, 2005).

A number of case studies have demonstrated that teachers may both be a power that can facilitate effective computer-based learning, as well as a force which can slow it down (Mollaei & Riasati, 2013; Zhu, 2010). Divaharan and Lim (2010) recommend that it is crucial to motivate teachers to learn, implement and integrate CALL-based approaches, and the key to motivation may be in teacher development. Divaharan and Lim (2010) describe a number of unsuccessful cases of CALL integration when instructors "... were seen as rooted in the traditional instructional form and hence they were not making the necessary effort to integrate ICT to create innovative learning experiences for their students" (p. 742).

Bilbatua and Herrero de Haro (2014) argue for the important role of teachers in facilitating success of a specific intervention by creating a specific type of learning environment inside the classroom. They distinguish between two types of learning environments and emphasize that only the second one can truly facilitate learner autonomy: (1) preoccupation with old materials and techniques; and (2) environments which are laboratory-like, and favor experiments and trying new ideas. According to Kelly (1955), laboratory-like environments provide learners with a feeling of safety when trying new approaches, which is noted by Schwienhorst (2003) as increasing effectiveness of CALL-based programs, as they are mostly based on innovative technological solutions. Creation of such a safe, experimental-type environment is in many ways the responsibility of a given teacher (Dawson & Heinecke, 2004).

A study by Nami, Marandi and Sotoudehnama (2016) has looked into how local teachers perceived the benefits of CALL lessons for promoting their professional development, and it was based on the collection of interview responses from a total of five teachers and the analysis of their reflective journals. Among the key factors that teachers appreciated in fostering their career with CALL were teaching practice and peer observation. At the same time, as demonstrated by Nami et al. (2016), the CALL lessons were perceived as rather effective and motivating for students due to immediate feedback and diversification of the existing teaching techniques. The results of the study indicated that support by CALL teacher educators, and the availability of technical support staff, were the key factors that helped EFL teachers to make CALL positively affect successful outcomes of CALL lessons.

Apart from examining the crucial roles of teachers in CALL classes, many researchers have been interested in investigating the effects of CALL on learner autonomy in language education as an effort to help learners recognize their potential to take responsibility for learning events and change their learning habits in a positive manner. This is also the focus of my study. In the section that follows, how CALL affects learner autonomy will be revealed.

2.4 CALL and learner autonomy

Multiple researchers stress that our current understanding of the relationship between CALL and learner autonomy is mostly based on either purely theoretical work (Chapelle, 2001), or unstandardized and unsystematic empirical evidence (Develotte, 2016; Stacke, 2007). Blin (2004) has attempted to systematize the current knowledge concerning CALL and its effect on learner autonomy, based on such factors as activity type (individual versus collective), level of control (e.g., technological autonomy versus psychological autonomy), and role of the specific technological tools in autonomy enhancement.

Although highly comprehensive, Blin's (2004) systematic assessment of the role of CALL for learner autonomy is not very straightforward and fails to provide an understanding of how specific common CALL tools may increase or decrease learner autonomy. A much more straightforward judgmental analysis has been conducted by Benson (2001).

Although purely theoretical in nature, it provides a clear overview of how behaviouristic, communicative and integrative CALL may affect learner autonomy. The researcher used the terminology developed by Warschauer and Healey (1998) to explain the evolution of CALL, and its evolving effect on learner autonomy (Benson, 2001). For instance, according to Benson (2001), CALL was initially designed to provide students with a certain degree of autonomy and control over which specific areas of language learning they would like to advance. This allowed the learners to control such important parameters as duration, time, and place of learning. Communicative CALL, on the other hand, enhanced learner autonomy to provide more freedom with regards to specific communication-related activities (e.g., practice mode of learning, communication with peers or native speakers). The widespread use of CMC is therefore able to "facilitate learner control over interaction" (Benson, 2001, p. 139). It is however important to realize

that the relationship between CALL and learner autonomy is not as straightforward as the models presented by Blin (2004) and Benson (2001) suggest.

Eneau and Develotte (2012), who are credited for providing an alternative view on the matter, concur that development of learner autonomy through the use of technology takes place via a process of reflection. Language learning processes occur through activities, which help negotiate meanings based on the learner's acquired knowledge (Collentine, 2011). This approach is based on an assumption by Vygotsky that "development of learner autonomy depends on the development and internalization of a capacity to participate fully and critically in social interactions" (Little, 1996, p. 211). Little (1996) further confirmed that most learners are well aware of various deficiencies that make their pronunciation, knowledge of grammar and ability to communicate in a foreign language different from native speakers. The researcher noted the crucial role of learner autonomy and ability to reflect in the creation of reference points that allow learners to notice the difference in the levels of skill already possessed and the desired skill levels, and try to improve on them.

Apart from trying to build a systematic way of viewing the relationship between CALL and learner autonomy, a number of researchers have investigated specific mechanisms through which CALL may potentially enhance autonomy (Benson, 2001; Chapelle, 2003), as well as important premises necessary to develop a degree of independence among learners (Min, 2009). Researchers have also discussed the advantages of CALL approaches with regards to enhancing student's autonomy (Fuchs, Hauck, & Müller-Hartmann, 2012; Hafner & Miller, 2011). According to Dang (2011), a CALL-based classroom is more student-oriented when compared to a conventional one. In addition, the roles of a student and a teacher change. Teachers become facilitators of knowledge, as opposed to being the only source of it (Mollaei & Riasati, 2013). Students, on the other hand, become experiential learners, as they also get to participate in coming up with an explanation of how foreign language works. As opposed to merely learning theoretical premises, students also focus a lot on practice, and take a more active part in the learning process (Nielson, 2011). Chun (2011a) adds that each classroom consists of students with various learning styles, while the teaching approach is not designed to accommodate them all at once. CALL-based learning does not interfere with these individual styles, as the students still get to learn and practice at their own pace.

According to Schwienhorst (2003) and Benson (2011), the ability of CALL-based approaches to enhance learning autonomy is based on characteristics such as its interactional nature. They therefore emphasize the role of CALL in preparing students for an adult life through engaging in communication, negotiation, as well as sharing. CALL offers an alternative to a traditional classroom, where "... joint creation of culture is often not perceived as a feasible option in the harsh reality of institutionalized language learning, where the restraints of the physical classroom and the language curriculum rarely allow learners to participate in joint culture creation with their peers, native speakers, and teachers" (Schwienhorst, 2003, p. 167).

Guth and Helm (2010) suggest students should develop their language identity, which is very difficult within most classrooms, where there is limited access to the studied language culture, as well as native speakers. The access to the latter two components is facilitated through the use of textbooks, teachers and various other elements of the learning processes. However, this deprives the classrooms from an atmosphere where students form a community (Schwienhorst, 2003). In addition, Schwienhorst (2003) contends that in most traditional classrooms around the world a clear separation still exists between learning a language and actually using it among peers or when communicating with native speakers.

CALL-based approaches, particularly the created platforms for communication and online or virtual learning environments, on the other hand, allow students to become more autonomous and help create their language identity. Little (1991) and Schwienhorst (2003), however, warn that despite a clear positive interrelation between CALL and learner autonomy, simply providing students with access to various CALL-based tools and technologies cannot ensure their autonomy. Students may find it difficult to change their perceptions concerning the role and impact of technology, and change their existing learning habits (Schwienhorst, 2003). As a result, student attitudes, teaching style, and teacher's assistance are crucial to developing learner autonomy through the use of CALL. This and other aspects influencing the efficiency of various CALL-based programs will be discussed in greater detail within the next sections.

2.4.1 Implementation of CALL-based programs and learner autonomy: empirical evidence

Recent years have seen an increased interest in learner autonomy, which may at least partially be contributed to the raise and development of educational technology (Blin, 2004). The exact impact of educational technology in general and CALL in particular is difficult to evaluate. Benson (2001) formulates it as follows: "... claims made for the potential of new technologies in regard to autonomy need to be evaluated against empirical evidence of the realization of this potential practice" (p.141). Although the topic of CALL-based learning within the context of Asia has received limited attention, there are a number of empirical studies that have focused on advantages, disadvantages, and local peculiarities concerning implementation of computer-based approaches in relation to learner autonomy around the world (Toyoda, 2001; van Daal & Reitsma, 2000).

Van Daal and Reitsma (2000) conducted an empirical study to see whether CALL-based program (a multimedia one) can enhance learner autonomy among learners. According to the obtained results, a multimedia program enhanced reading and spelling skills of the students, who were able to learn during the 16 hours of work on the computer the same amount of material they usually mastered in 3 months of traditional learning. Interestingly, van Daal and Reitsma (2000) also looked at students with reading disabilities and low levels of overall motivation, and how the multimedia program affected their learning. Their key finding was that CALL was an effective approach to minimize non-studying behavior of students, and therefore increased their overall interest and motivation in spending more time learning a new language. Van Daal and Reitsma's study contributed to the research literature because it was the first study that included children as the main participants. Their study shed light on the importance of further research into learner autonomy in developing countries, especially for those countries in which education is still teacher-centered like Vietnam.

An empirical study by Toyoda (2001) attempted to critically evaluate the effect of a project-oriented CALL program on learner autonomy. The specific program in focus was implemented at the University of Melbourne during the period of 1998-1999, and involved a total of 11 languages taught to a group of 250 students of diverse cultural backgrounds. Toyoda (2001) concluded that CALL had a significant positive effect on learner

autonomy, particularly within the conditions whereby students already had good knowledge of the technology and multimedia used by the program. According to the results of Toyoda's (2001) study, the students' perception of the technology and its role within the learning process, indirectly affected autonomy. The students who perceived technology as a highly useful tool demonstrated a higher degree of autonomy as a result of the CALL program. Toyoda's (2001) study is significant for my study because it included a large number of participants from different cultural backgrounds. The study, however, limited its scope to concentrate on students whose computer literacy was good. In the field of learner autonomy, students who are not used to using computers for their learning should be included and examined.

Another empirical research project focusing on the context of Asia, and in particular Japan, is that of Smith and Craig (2013). They evaluated the effectiveness of a CALL-based course to develop undergraduate EFL student autonomy at Meisei University. Three learning supports were trialed: a learner passport, an e-language learning portfolio, and an e-learner self-direction diary. The findings showed that the passport helped students to evaluate what they could and could not do. The portfolio helped the learners follow the study schedule. The self-reflection diary showed what students were doing including the software or websites they were exploring. The researchers concluded that learners' abilities to plan, organize, track, and evaluate their autonomous use of CALL resources improved. Smith and Craig also emphasized that the "regular and critical learner self-reflection was a key factor that made a positive shift in culture study" (p. 252). This study is significant for my research in the area of learning strategies. However, it could have offered more meaningful results if the learners' psychological attributes such as motivation and attitudes had been examined as well.

Hayta and Yaprak (2013) examined EFL students' awareness in using autonomous language learning activities through the use of computer technology. Seventy-five undergraduate students from a state university were invited to take part in answering the questionnaire that comprised three parts: technology use in autonomous learning activities, learners' awareness levels, and autonomous learning activities performed by students. The findings showed that students' awareness levels were high in terms of making decision and setting goals for their learning. In addition, a majority of participants felt enthusiastic about using the computers and internet for different study purposes and they were aware

of the learning processes they used. This study suggests ways to enhance autonomous learning activities. However, I would argue that a combination of questionnaire and interview instruments should be included in the study because that would probably add more depth to the findings of the study.

Hafner and Miller's (2011) study was aimed at producing a stronger learner autonomy focus in Hong Kong. The study involved a student-centered digital video project which required students to create and share a multimodal scientific documentary. The researchers used the term *technological learning environment* to describe the full range of technologies and resources used to support the learning process. The project included three phases: planning, filming and editing, and sharing. Hafner and Miller concluded that the technological learning environment had potential in terms of providing opportunities for autonomous language learning because students in this study could use the affordances of a technological learning environment to exercise high degrees of autonomy. The findings also revealed that taking part in the digital video project made students motivated to take control over their learning and practice language independently. Hafner and Miller's study highlights the importance of further research on computer technology and learner autonomy in formal contexts with the integration of many useful aspects of computers. My study will address a growing issue in the field of computers for fostering learner autonomy, with a focus on useful functions of learning management systems. Hafner and Miller's study is a key reference for my study, exploring students' motivation and ability to monitor their learning through interaction with online activities.

Lee (2011) carried out a study with 16 American students as participants in the fall of 2009 to explore the impact of blogs on autonomous learning, as a result of reflective and social processes. The researcher employed a social constructivist framework. According to Lee, within a social constructivist framework, "CALL provides catalytic conditions for active involvement in constructing knowledge, critical reflection on comment, and collaborative interaction with peers" (p. 89). Through data analysis, the researcher concluded that effective metacognitive and cognitive skills were important to maximize the potential of blogs in promoting learner autonomy. In addition, students felt motivated as they took advantage of using blogs to collaboratively share and exchange cultural perspectives. The study makes a great contribution to the discipline of applying digital technology for intercultural communication and how it affects learner autonomy.

However, its conclusions would have been more comprehensive and enhanced if learning strategies had been investigated.

Collentine (2011) investigated the impact of a CALL task on learner autonomy through autonomous moves within a 3D environment. The participants were 58 third year university students in the United States from an existing class. The quantitative analysis included chat activities gathered from the interactions among the participants. Collentine took Schwienhorst's (2003) design feature outlines into consideration to promote autonomy in CALL. The results revealed that participants' autonomous moves and the linguistic characteristics of the input they received affected their linguistic complexity and accuracy while completing CALL-based tasks. This study is significant for my research because writing linguistic production was taken into account, but the study would have been more in-depth if linguistic aspects of speaking and reading tasks had been included in the virtual environment.

Regarding the important component of learner autonomy, Zarei and Hashemipour (2015) carried out a study to examine the effect of CALL/web-based and conventional instruction on improving EFL learners' autonomy, and its specific component of motivation. The participants were 110 intermediate level Iranian students and they were divided into two groups: an experimental group and a comparison group. The students in the experimental group were taught with CALL/web-based instruction, while the conventional methods were applied in the comparison group. The researcher employed the web-based instruction theory developed by Hannum and Brigg (1982), and Ownton (1997). According to them, students who received exposure to web-based instruction became active in their learning and had more chance to interact with their classmates because the computer environment was more visual and stimulating. The study concluded that CALL/web-based instruction was a suitable environment for students to improve learner autonomy and increase learners' motivation because CALL offered learner-centered teaching methods, which could be considered an effective way for students to learn independently. This study shed a light on a research methodology that includes a treatment group and comparison group in order to gain a better understanding of the advantages of CALL in enhancing learner autonomy. I would argue that the modified questionnaire in this study should go through a validation period so that the instrument would become more reliable and valid.

The reviewed studies have focused on using CALL to foster learner autonomy in both developing countries and developed ones. My study concentrates on the effects of CALL on the aspects of learner autonomy to enhance this capacity as a whole and it will be situated in Vietnam. The next section will discuss the issues related to learner autonomy and language education in this context.

2.4.2 Learner autonomy research in Vietnam

Various studies related to learner autonomy have been done to identify the best ways to foster this capacity in the context of Vietnam where traditional teaching methods are commonly employed.

Le (2013) carried out an intervention study to provide more understanding of the development of learner autonomy in EFL among university students. The researcher employed both quantitative and qualitative analysis and the data were collected in three phases. The findings concluded that intervention students had positive attitudes about the effects of an integrated learner training program on fostering their autonomy. The researcher also argued that “the other aspects of the learner training program, such as, the effects of language learning strategy instruction, collaborative learning, and teacher-guided/learner approach” (p. 349) should be focused on to make the intervention program more convincing. In addition, time constraints, a stringent syllabus and the power distance between teachers and students were recognized as factors that contributed to hindering learner autonomy in Vietnam.

Nguyen (2009) examined learner autonomy in the Vietnamese EFL context and its relationship with language learning results. In her study, learner autonomy was defined as learner self-initiation and learner self-regulation. The study followed a top-down approach and focused on a more teachable and task-focused element of learner autonomy. The study’s data were analysed through three phases. The pilot study revealed that students’ levels of autonomy were connected to their levels of academic achievement. In phase one, the findings showed that most aspects of learner autonomy correlated positively and significantly with EFL proficiency measures. The finding suggested that writing scores and learner autonomy were positively and significantly affected by the task-specific training of self-regulation in phase two. In her conclusion, Nguyen recommended that

future research should employ the bottom up model to “gain insights into learners’ self-initiation, a less teachable and more learner-focused part of learner autonomy” (p. 305).

Nguyen (2014) explored the understandings of Vietnamese teachers regarding the concept of learner autonomy and how they applied their beliefs in their teaching practices. The triadic reciprocity model developed by Bandura (1986) was adapted in this study.

According to this model, there was a strong relationship among behavior, cognition and other personal factors, and the environment. In addition, teachers’ beliefs were considered to play an important role in language education and they would affect teachers’ behavior. While Nguyen (2009) explored learner autonomy as a learner-based approach, Nguyen (2014) later explored it through a teacher-based approach. The findings revealed that due to their lack of understanding of learner autonomy, teachers did not apply the concept in their teaching practices. Apart from some barriers identified by Le (2013) as underlying reasons for the current situation of learner autonomy in Vietnam, Nguyen (2014) added some more reasons including “lack of time, little belief that their students are capable of becoming autonomous in their learning” (p. 186). It was argued that education policy makers should take the importance of learner autonomy into consideration and the government should hold workshops and seminars on how to foster learner autonomy to attract teachers’ attention.

Dang (2012) investigated the relationship between performance and perception of learner autonomy in Vietnam. Two hundred and forty seven undergraduate students from one university attended five classes taught by three teachers. At the beginning, the course was introduced to the students, the pre-test questionnaire was administered and the log records were generated. At the end of the course, the post-test and the interview were done. Students took a specially designed course that included CALL to improve their English oral skills. The first two teachers made the course compulsory for their students and included it in the course assessment. The third teacher made the course optional for her students. Students were invited to fill in a questionnaire during the course and to participate in a semi-structured interview at the end of the sixteen-week course. The researcher used a Moodle site platform to give students opportunities to have good quality communication. The course included opportunities to give feedback and space for collaboration, reflection and negotiation. The results showed that students’ learning

attitudes, goal orientation and technological competence influenced their autonomous learning behaviours.

The first three studies reported on different aspects of learner autonomy and English teaching and learning in Vietnam. These studies, however, addressed other factors that had impact on learner autonomy rather than the benefits of CALL for autonomy enhancement, which capture different choices in improving the quality of foreign language education in Vietnam. There is only one study done that involved CALL; yet, the study did not investigate influential factors such as attitudes and motivation in depth.

The importance of language learning strategies, attitudes, and motivation has been examined separately in the field of language education, and significant contributions to understanding the impacts of CALL on each construct have also been made. However, there is a lack of research on how CALL influences these three constructs as the main components of learner autonomy, especially in Vietnamese context. Thus this is a particular gap that my study has addressed.

2.5 Theoretical framework

The theoretical framework the present study relies on consists of four models/systems: (a) constructivist learning theory (Piaget, 1980), (b) community of practice (Wenger, McDermott, & Snyder, 2002), (c) Vygotsky's notions of socio-cultural theory (Lantolf & Thorne, 2006), (d) self-determination theory (Deci & Ryan, 1985). The elements comprising each of these conceptual systems/models are directly or indirectly connected to, and interact with, each other in influencing the proliferation of learner autonomy, and therefore the theoretical framework is a result of the integration of different elements from the four models. This conceptual framework lays the conceptual groundwork for constructing possible pathways between and among three specific components learning strategies, attitudes, and motivation - with a view to creating a likely causal relationship model (see Figure 2.2, Section 2.2.3).

a) Constructivist learning theory

According to constructivist learning theory, learners are supposed to be active constructors of knowledge (Piaget, 1980). Constructivism refers to the shift in education from teacher-centered information transmission approaches to learner-centered approaches, which is the main aim of language education. Given the importance of cognitive processes that occur in the minds of learners, they need to feel they have their own voice in the formulation of goals. In addition, they are encouraged to build knowledge for themselves with independent learning strategies. Learning is not a passive process and it requires learners to enhance their responsibility and their ability of using learning strategies, which enables them to explore and gain insights into the learning content. In the process, they will enhance the necessary skills for language learning and decision making.

Knowledge construction requires learning to take place in a social context that helps learners maximize their understanding of the knowledge through interaction. In order to construct knowledge successfully, students are supposed to work together and support each other in a community. Constructivism operates in contrast to traditional Vietnamese teaching and learning processes in the sense that knowledge is traditionally transmitted from teacher to students. Wang (2014) indicates that,

...with constructivism learning theory as theoretical support, learner autonomy advocates learner-oriented study, emphasizing learners' role of cognitive subject. Knowledge is not passed on the teacher but learners' acquiring through meaningful construction with the help of necessary learning materials and other under certain situation. (p. 1553)

CALL uses a constructivist, technology-based approach, which positively affects students because it helps them acquire the target language and learn actively through interaction. In the other words, technology-enriched environments motivate students to learn effectively and deal with challenges as they occur. It is argued that CALL is able to maintain students' interest by engaging them in activities that are designed for changing passive roles of students in educational process. It stimulates students' interaction in the construction of knowledge. Students are given greater opportunities to get access to various authentic sources of information, which boost the interaction among students,

thereby stimulating the collaborative exchange of thoughts, feeling or ideas.

Constructivism has further helped to focus the research questions of this study with regards to the shift to the active role of students once they know how to use learning strategies, and a positive change can be identified in their attitudes and motivation through the implementation of CALL.

b) Community of practice

Wenger et al. (2002) have pointed out that community of practice is a relatively old notion, which has recently been actively recruited to understand the process of collective learning. Wenger (2011) notes that,

Communities of practice are formed by people who engage in a process of collective learning in a shared domain of human endeavor: a tribe learning to survive, a band of artists seeking new forms of expression, (...) a clique of pupils defining their identity in the school. (p. 1)

In a broad sense, a community of practice therefore refers to any group of people who gather intentionally (or unintentionally) due to the fact that they share a common goal of doing something, and aim at improving a specific skill (Wenger et al., 2002; Holmes & Meyerhoff, 1999). Wenger (2011) points out that three characteristics define a community of practice: (1) the domain, (2) the community, and (3) the practice.

The domain of a given community is determined by their shared interest, and can be viewed as a characteristic that distinguishes its members from other individuals (Wenger et al., 2002). Holmes and Meyerhoff (1999) argue that membership of a community of practice implies that its members share a commitment to a specific activity (domain). For example, when a number of individuals in the class share a passion for learning a foreign language, they can be considered a community of practice. The key characteristic of community is its members participating in discussions and helping each other within their shared domain of interest (Wenger et al., 2002). The last component of the community, discussed by Wenger et al. (2002), concerns the actual practice – a developed routine (or repertoire) of various resources that assists a specific community to improve its knowledge/skills within the chosen domain. The practice may take different forms, and

sometimes may even be unconscious in nature, when the participants (members of the community) engage in an activity without realizing it assists their overall goal (e.g., discussion concerning how to improve speaking skills among students during class time) (Wenger, 2011).

Little (2004) suggests three dimensions of learner autonomy in a community of practice. Language learners in a community should be responsible for setting targets, methods and contents (*learner involvement*) as well as be able to monitor and evaluate their learning (*learner reflection*) to become more autonomous. In addition, Little emphasizes that a language learner should be surrounded by *the target language* on a daily basis. Taking this into consideration, Wenger, White and Smith (2010) argue that there is a close potential relationship between CALL and a community of practice for learners to develop their autonomy by linking learners with others who engage in similar practices. CALL can support a community of practice in three areas including content, process, and context (Hoadley & Kilner, 2005). Regarding the content, CALL is able to provide the community of practice with authentic information. Accordingly, students will have quick access to a shared repository of information and resources. The process affordance refers to CALL's ability to help students with the steps or sequence of actions to deal with a particular learning task or activity. The third area that CALL can support the community of practice with is context, which refers to the ability of allowing students with similar practices in their learning to communicate with their friends because CALL is likely to provide a platform for a community of practice. Through these three supporting areas, technology provides learners with the opportunities to use the target language by selecting goals, discussing tasks and evaluating results. Learners who are afforded with authentic content offered by CALL usually become immersed in problem solving with realistic situations (Herrington, Reeves, & Oliver, 2006). In this way, learners can become increasing autonomous in this community and develop their main target skills in interaction with each other. According to Hoadley (2012), under the cognitive view, learning with CALL is not a property of each student but it is a more relational property of students in a specific context which involves interaction with the others. Through participation, learners have access to "a community and perceive themselves to be members in a community and gradually take up more of the identity of group membership and centrality" (Hoadley, 2012, p. 288). Apart from that, it is necessary that learners need to cooperate in social

interaction, resulting in learner autonomy improvement (Murray, 2017; Ribbe & Bezanilla, 2013).

c) Vygotsky's socio-cultural theory

Vygotsky's notions of socio-cultural theory, similar to the community of practice theory discussed above, stresses the importance of a social and cultural environment for individual development and learning (Lantolf & Thorne, 2006). The theory, developed by the prominent psychologist Lev Vygotsky, postulates that starting from the earliest stages of development, family, caregivers, teachers and peers play a crucial role in the development of higher order cognitive functions of a person. It is important to mention that Vygotsky, unlike some other key thinkers (e.g., Piaget), argued against the universal nature of human development. In contrast, he suggested that individual development differs from country to country because of the varied cultural context (Lantolf & Thorne, 2006).

Vygotsky's theory emphasizes the link between social interaction and the development of an individual's cognitive ability. According to Lantolf and Thorne (2006), the social interaction is necessary for learners to stimulate cognitive development to carry out their learning process. The external social world should be taken into consideration for the study skills development of an individual. An individual has two levels of development. At the actual level, students work independently without help because they have already-attained mental functions. The potential level refers to the situation in which students are not able to work independently. These are levels that are mentioned in a "Zone of Proximal Development" (ZPD). ZPD is the potential for cognitive development of each individual. In order to fully develop the exploration of this zone, students need help and social interaction. Learner autonomy research over the past decade has acknowledged that the individual and social interaction contribute to the development of learner autonomy. According to Vygotsky (1987), learners' cognitive system and their interaction with social groups are linked together. In other words, the development of a student is not separable from social life. Students need to have learning strategies with the support of learning interaction and collaboration to foster their autonomy capacity. The development of learner autonomy is strongly influenced by the capacity of reflection and analysis, which in turn depends on the ability of full and critical participation in social interactions

(Vygotsky, 1986) through CALL. CALL provides students with the opportunities for interaction via many potential ways to reflect and collaborate. The appropriate application of CALL can enhance their discussion interaction to construct knowledge more effectively. To carry out independent actions and self-regulation in terms of learner autonomy, students should engage in a volitional process and solve problems independently through the interactive support and scaffolding provided by CALL.

d) Self-determination theory

It is crucial to take motivation into consideration when exploring the interaction between individuals and their social settings (Ushioda, 2006). Motivation plays an important role in determining human behavior and language learners who are motivated will more likely take control over their learning and behavior, succeed in language learning and reach a certain level of proficiency (Le, 2013). Dickinson (1995) suggests motivation consists of two principle types: intrinsic motivation and extrinsic motivation. According to the researcher, a strong link between motivation and learner autonomy can be perceived in Deci and Ryan's (1985) self-determination theory (SDT). This theoretical framework has been widely applied within different contexts, including educational ones (Reeve, 2002).

SDT argues for the existence of natural positive tendencies that motivate individuals to behave in specific, healthy ways. The creators of the theory, Deci and Ryan (1985) make a claim about the intrinsic nature of such tendencies. Their developed framework confirms that conditions which support intrinsic motivation enhance and stimulate learner autonomy so that students are able to engage in creative activities and improve their overall performance (Deci, 1992). Deci and Ryan emphasize intrinsically motivated students study for its own sake in order to get experience and pleasure. In addition, these students do not study because of external pressure or promise of reward, which results in fostering an interest in learning and confidence in their own capacities and attributes. As such, intrinsic motivation is more desirable in language education. Dickinson (1995, p. 169, cited in Le, 2013, p. 48) reveals the strong relationship between learner autonomy and intrinsic motivation, as intrinsic motivation is "promoted in circumstances in which the learner has a measure of self-determination and where the locus of control is clearly with the learner". Therefore, learner autonomy is related to self-determination in "its sense for and an attitude towards learning." (Dickinson, 1995, p. 169, cited in Le, 2013, p. 48).

Within the classroom, using CALL, students are able to increase their responsibility for goal setting, monitoring and evaluating their studies (Aryes, 2002; Christie, 2001). Besides, CALL provides students with the opportunities to make meaningful links between the learning materials and their own goals. As a result, they can improve their intrinsically motivated behavior and learning attitudes.

The four models and systems addressed above reveal how learner autonomy is promoted. Within this integrated framework, the foundation and logical connections are made through CALL. These models support each other. Learners with personal psychology in the model of self-determination theory (Deci & Ryan, 1985) will interact with the learning environment to construct knowledge actively, which is mentioned in the theory of constructivist learning (Piaget, 1980). In order to become successful in their learning performance, learners are supposed to practice a lot, using learning strategies in class, and this links to community of practice (Wenger et al., 2002) with the support of CALL. As argued by Snodin (2013), learner autonomy also needs the support from practice and other people. Vygotsky's notions of socio-cultural theory (Lantolf & Thorne, 2006) are taken into consideration because my study will look into the social and cultural context of Vietnamese education, where students are stereotyped as passive learners.

2.6 Chapter summary

The present chapter describes the significant features of learner autonomy and CALL; and it then concludes that CALL is an efficient tool widely applied throughout the world, and positively affects the effectiveness of learner autonomy enhancement. At the same time the researchers discuss a number of factors that may positively or negatively affect the efficiency of CALL implementation, the key ones being related to students and teachers (Beatty, 2013; Dang, 2011; Dawson & Heinecke, 2004). The present study argues that there are a number of cultural aspects which influence the effectiveness of CALL-based initiatives within the context of Confucian heritage countries in general, and Vietnam in particular. This view is further supported by the utilized theoretical framework, which is based on constructivist learning theory (Piaget, 1980); community of practice theory (Wenger et al., 2002), Vygotsky's notion of socio-cultural theory (Lantolf & Thorne, 2006) and SDT theory by Deci and Ryan (1985). The framework highlights the importance of community, chosen domain and cultural context in individual development

and ability to learn a foreign language through the use of CALL. Any mechanisms facilitating the enhancement of learner autonomy within the context of Vietnamese education are beneficial for local students. This particularly concerns learning foreign languages, among them English. Furthermore, technology implementation can help students engage in activities and promote student autonomy and learner-oriented approaches. The classroom environment is the only place for acquiring a new language in Vietnam. A CALL-based approach offers students more autonomy, as they can use various tools to practice their skills using their own computers. It is clear that there is a gap in the literature that needs to be filled in that there is a need to examine the effects of CALL on language learning strategies, attitudes, and motivation in relation to fostering learner autonomy. The study design and methodology are further presented in the next chapter.

Chapter 3: Methodology

3.1 Introduction

Chapter 1 of this study has provided a description of the current situation with respect to learning and teaching English as a foreign language and has focused on the importance of conducting an investigation into the effects of Computer Assisted Language Learning (CALL) on improving EFL students' learner autonomy in the context of Vietnamese higher education. The literature review presented in chapter 2 focused on the specific approaches that are typically used to promote learner autonomy and examined those aspects of CALL that have been regarded as being most effective for promoting learner autonomy, as well as providing a description of the theoretical framework that guided the study. The purpose of this chapter is to provide an overview of the methodology used and a description of the Learning Management System (LMS) used in the experiment. This chapter also describes the aims, participants, instrument development, data collection and analysis procedures in three phases. Finally, ethical considerations are discussed.

As noted in chapter 1, the overarching objective of this study was to explore the effects of CALL on learner autonomy, and more specifically to investigate how students' learning strategies, attitudes towards learning English and motivation to learn English changed through CALL. The research was carried out to answer the following main research question and three sub-questions.

How does Computer Assisted Language Learning (CALL) affect Vietnamese college students' learner autonomy?

Three sub-questions:

1. To what extent do Vietnamese EFL students change their use of language learning strategies as an effect of completing a CALL intervention?
2. To what extent do Vietnamese EFL students change their attitudes towards learning English as an effect of completing a CALL intervention?
3. To what extent do Vietnamese EFL students change their motivation to learn English as an effect of completing a CALL intervention?

The following overview presents the research method adopted for this study to develop timely and informed answers to the above-stated research questions.

3.2 Mixed method design

In social science there are a number of different research methods available, including qualitative and quantitative methods, as well as a mixed methods design (Doyle, Brady, & Byrne, 2016; Tashakkori & Creswell, 2007). According to Creswell (2014), the data collection procedures and analytical methods that are used in mixed methods research provide researchers with a more robust analysis of an issue of interest. In addition, researchers are given opportunities to gain new insights that can illuminate cross-cultural or attitudinal issues (Teddlie & Tashakkori, 2009).

There is growing support for the use of a mixed methods approach (Aifundin, 2016; Le, 2016; Nguyen, 2017). Sanderlowski (2000) argues that a quantitative or qualitative approach alone fails to provide researchers with the full range of data needed to fully understand an issue of interest. It is evident that the advantages of mixed methods research include the ability to give a comprehensive qualitative description of opinions, trends, and attitudes that can be used to add meaning to quantitative data. By adapting a mixed methods approach, a researcher can “use the strengths of an additional method to cover the weakness in another method by using both in a research study” (Turki, 2014, p. 79) to increase the meaning and validity of the research findings.

However, there are some constraints involved in applying a mixed methods research design. For instance, Bryan (2007) reports that mixed methods researchers can experience problems in determining how best to analyze quantitative and qualitative data. In this regard, Bryan (2007) notes that mixed methods researchers typically treat quantitative and qualitative data separately, without bringing the results together to compare and contrast them, until all data analysis has been completed.

A mixed method design is especially appropriate for the purposes of this study because learner autonomy is a complex issue that requires a multiple approach research design to collect the data that are needed to provide reliable and valid responses to research questions (Farivar & Rahimi, 2015). Reinders and Hubbard (2013) also claim that learner

autonomy is a multi-dimensional construct that should use a mixed methods approach because it can provide a more informative and clearer picture.

This study has adapted the model of sequential explanatory design developed by Creswell (2009) for the process of data collection as illustrated in Figure 3.1 below.

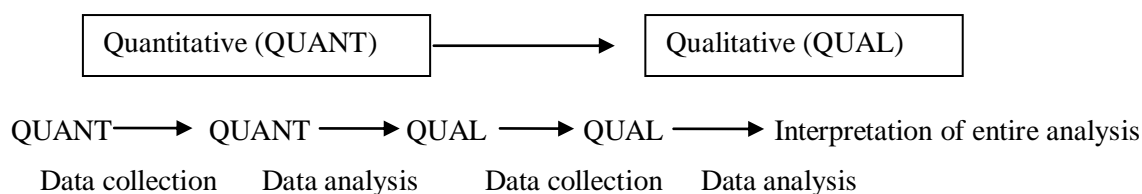


Figure 3.1: Sequential explanatory design (Creswell, 2009, p. 209)

In this current research, quantitative data was collected first through a questionnaire on three components of learner autonomy, namely language learning strategies, attitudes towards learning English, and motivation to learn English in phase 1, with a view to validating the adapted questionnaire that would be used for phase 2. Phase 2 aimed to explore the changes in those three components at the conclusion of the experiment. These steps were followed by collecting qualitative data in the form of semi-structured interviews in phase 3.

The interpretation of the quantitative and qualitative data analysis required equal weighting of both types of data in order to determine the extent to which each type of data provided substantive answers to research questions concerning learner autonomy. The data sets needed to be collected in a systematic, sequential order to develop informed and timely answers to the study’s guiding research question in a logical fashion. For example, in order to understand how students changed their use of language learning strategies in CALL settings, it was necessary to understand how students applied learning strategies before and after the experiment. Similarly, in order to measure the changes in students’ attitudes and motivation, it was also important to understand how students felt and thought about their English learning before and after the experiment. As mentioned before, in order to gain additional in-depth understanding of these changes, qualitative data were collected in phase 3 of the research through semi-structured interviews. Finally, to develop an insightful answer to the main research question, both quantitative and qualitative data were discussed to develop a profile of learner autonomy in the investigated context.

3.3 Experimental research design

Selecting a specific research approach depends on a researcher's field and research questions and the chosen approach needs to fit the purpose of the study (Chen, 2009). According to Cohen, Manion and Morrison (2007), the significant characteristic of an experimental design is that researchers can control and manipulate the conditions which determine the vents in which they are interested. I believed that employing an experiment would be an effective and appropriate way for the proposed study to answer the research questions because the purpose of this study was to find out the effects of CALL on fostering learner autonomy. Griffiee (2012) lists some variables in the control and experimental classes that need to be paid attention to:

- The dependent variable is considered to be the major variable that will be measured in the study and it is related to the independent variable. The dependent variable is the one we are attempting explain.
- The independent variable is the variable which the dependent variable relies on. Brown (1988) argues that this variable is selected to explore its effects on, or relationship with, the dependent variables.
- A moderator variable is an independent variable that is not considered to be important in the investigation. A moderator variable is a 'surprise' that is usually identified later, during the course of the research, and it is treated statistically as an independent variable.
- A control variable is not the key concern in the investigation, but might affect the outcome. Brown (1988) recommends that these variables should be kept constant and neutralized.
- Intervening variables are the constructs that might help to explain the relationship between independent and dependent variables. Any variable that is not included in the study is considered to be an intervening variable.

According to Bielska (2011), there are three types of experiments. The first type is a pre-experimental design in which there is no control group and no random assignment of subjects. The disadvantage of this type of experiment is that it cannot generate data necessary to test a research hypothesis. It can, however, "provide useful insights and

generate hypotheses concerning language learning and teaching, which can later be tested with more rigorous methods” (Bielska, 2011, p. 97).

The second type is called a quasi-experimental design, which is widely used in the social sciences. Although it involves experimental and control groups, the participants are not randomly assigned. White and Sabarwal (2014) assert that quasi-experimental designs can only be used to provide evidence to support the relationship between variables for the classes in the proposed research. A quasi-experimental design offers meaningful findings which may be generalized beyond the context of the study (Johnson & Christensen, 2004). Dornyei (2007) concludes that “it is generally accepted that properly designed and executed quasi-experimental studies yield scientifically credible results” (p. 118).

The last experimental design is called a true experimental design, which needs to satisfy both criteria in terms of random selection and random assignment of the subjects. Random selection requires every participant to have an equal chance of being included in the sample. The role of random selection is to assure “the representativeness of the sample with respect to the population, so that generalization of the research findings is justified” (Bielska, 2011, p. 96). On the other hand, random assignment requires every participant of the study sample to have an equal chance of being included in the experimental or control groups used in the study. The main purpose of random assignment is “to eliminate any preexisting differences between the comparison groups in order to assure their equivalence, so that any effects found in the study can be attributed to the independent variable” (Bielska, 2011, p. 96). My study could satisfy the criteria of true experiment to obtain its findings, and the true experimental design itself ensured greater internal validity and provided an opportunity to investigate casual claims. Thus, this type of experiment was employed in my study.

3.4 Research paradigm

Cameron (2011) contends that “mixed methods research is a growing area of methodological choice for many academics and researchers from across a variety of discipline areas” (p. 96). Three philosophical concepts, namely ontology, epistemology, and methodology, are central to certain research approaches and different research paradigms (Lapan, Quartaroli, & Riemer, 2011). A paradigm includes the following

components: ontology, epistemology and methodology. In this case, each component is explained, and then the relationships between them will be explored. According to Scotland (2012), “every paradigm is based upon its own ontological and epistemological assumptions. Since all assumptions are conjecture, the philosophical underpinnings of each paradigm can never be empirically proven and disproven” (p. 9). Nguyen (2017) suggests that the interrelationships between the researcher’s view about the nature of reality and the questions about how to get to know the social reality should be acknowledged in order to define the world that the project is interested in.

Ontology refers to a particular understanding of the nature of being or reality (Creswell, 2007). There are two contradictory paradigms that relate to research work in the social sciences, which center on their ontological assumptions: realism and nominalism. Realists “hold that social reality has an independent existence and is not dependent on the knower of its existence” (Ma, 2015, p. 566). On the other hand, “nominalists assume that the social world is chiefly concepts or labels that help individuals to structure reality” (Ma, 2015, p. 566). The ontological position taken in this study was the recognition that learner autonomy has been constructed by three specific components: learning strategies, attitudes and motivation. Students’ performance of learner autonomy is mediated by those three components, as discussed in chapter 2. Recalling the theoretical position employed in this study, namely constructivist learning theory (Piaget, 1980), community of practice (Wenger et al., 2002), Vygotsky’s notions of socio-cultural theory (Lantolf & Thorne, 2006), and self-determination theory (Deci & Ryan, 1985), the participants could interact and participate actively in a community with the support of outside resources, which in turn helped them negotiate and collaborate with other members to develop learner autonomy.

The concept of epistemology is concerned with the nature and forms of knowledge (Duberley, Johnson, & Cassell, 2012). Scotland (2012) argues that epistemological assumptions are involved “with how knowledge can be created, acquired and communicated, in other words what it means to know” (p. 9). Similarly, Ma (2015) claims that epistemology questions what knowledge is and how it can be acquired. He further explains that realists view knowledge as hard, objective and tangible, and they believe reality exists independently of observers. By contrast, nominalists view knowledge as personal, subjective and unique, and they believe “people’s knowledge of the world is

conjectural, falsifiable, challengeable, and changing” (Ma, 2015, p. 567). As a result, researchers need to adopt a particular epistemological and ontological position, and this position will give rise to different methodological paradigms (Cohen, Manion, & Morrison, 2007; Ma, 2015; Scotland, 2012).

Methodology is the third concept that guides researchers. Methodology refers to the strategies or the plan of action for answering the research questions (Scotland, 2012). In a more particular way, Ma (2015) defines methodology as a “research paradigm that outlines how a research project is to be undertaken and, among other things, identifies the specific methods to be used” (p. 567). Methodology is also the knowledge process which requires specific techniques and procedures to be used to gather and analyze data (Creswell, 2009). The data collected could be either qualitative or quantitative, or both. My study was the product of a pragmatist paradigm and combined qualitative and quantitative approaches within different phases of the research process, based on its underpinning ontology and epistemology.

3.5 The research context

The study focused on phase 2 and the experiment was conducted in an academic institution, known as College A, which is a public college in the South of Vietnam. College A was established and controlled by the Ministry of Education and Training. This college has as its missions to train and educate learners who major in finance, accounting, business administration and computing. Apart from that, it is responsible for supplying a labor force that can meet the process of socio-economic development of Vietnam in general and of the southern area in particular. Every year College A admits 2,200 students for all of its four faculties. The college-level curriculum is for a 3 year period and students are required to study English as a foreign language, which is an obligatory subject. In an effort to train the future labor force to be capable of using English efficiently, the college authorities decided to teach towards the Test of International Communication (TOEIC). Students are required to study TOEIC in order to master the necessary vocabulary, grammar, pronunciation, as well as being proficient in listening, speaking, reading and writing. Students are supposed to get familiar with English used in various fields such as society, culture, economy and environment. They need to communicate effectively in most situations and understand the conversations taking place in public places and workplaces.

It is important for students to be good at reading different kinds of reading materials in English and writing emails to benefit their working duties.

Due to the fact that the operation funding is from the government, the college infrastructure is somewhat traditional. There are around 40 students in each classroom which is equipped with one blackboard, a projector and a sound speaker. In particular, there are two laboratories serving English classes every week to help students improve their English skills. However, teaching and learning practices are still teacher-centered. Teachers play an important role in the classroom and students are relatively passive in the process of being provided with the knowledge. Students generally just listen to what teachers say without asking questions. In this context, teachers are considered as knowledge keepers and students have little desire to discover new things and they depend on teachers for the final answers.

The diagram of the research design employed in the study is shown in Figure 3.2. The specific procedures used in phase 1, phase 2 and phase 3 are presented in the next sections.

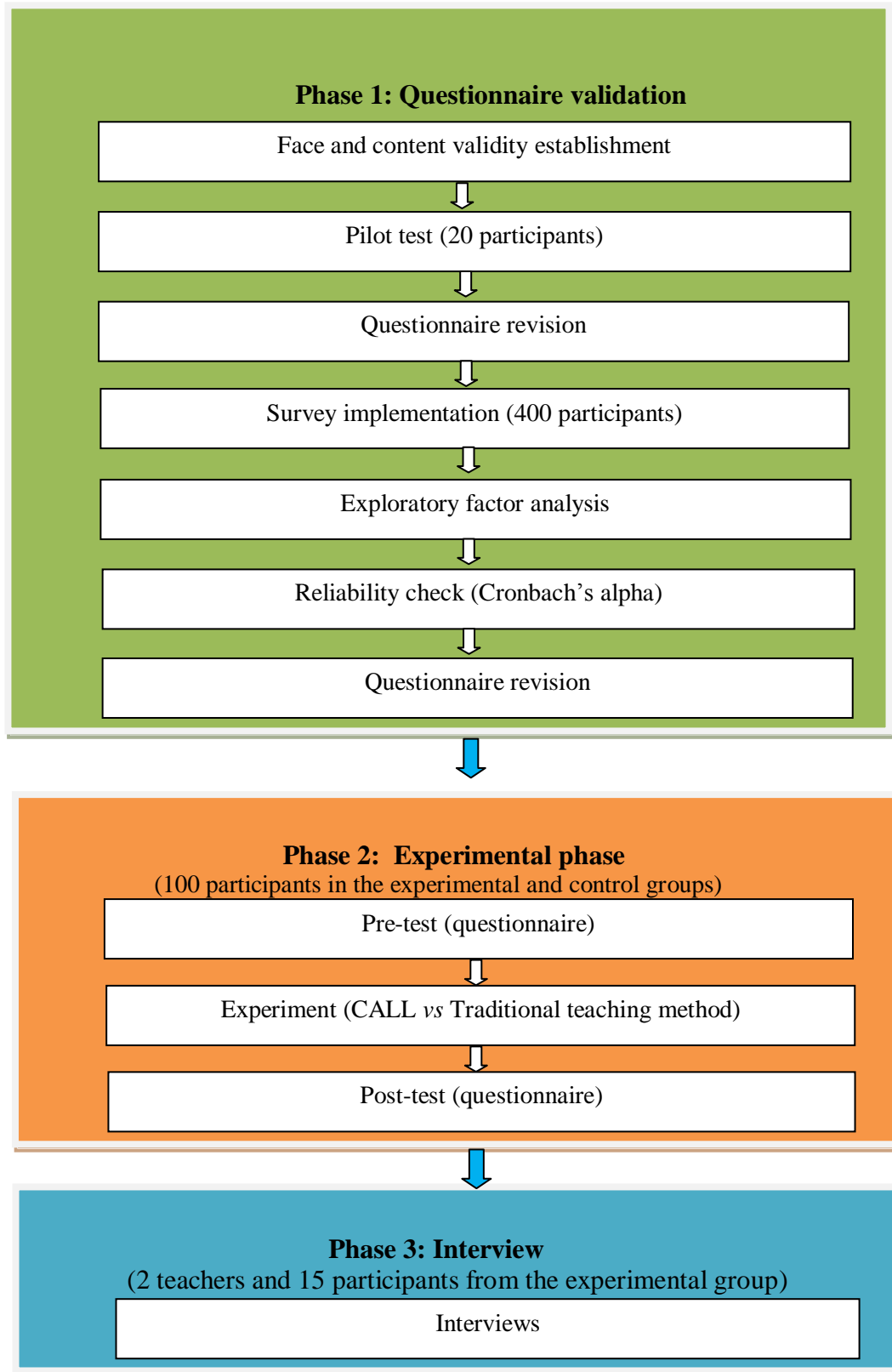


Figure 3.2: Diagram of research design employed in the study

3.6 Phase 1: Questionnaire validation phase

This phase aimed to validate the survey questionnaire and the results would be used for phase 2 of the study. The questionnaire investigated students' learner autonomy components in the Vietnamese EFL higher education context. An understanding of the components of learner autonomy could provide the data needed for further investigation of this construct in Vietnam. Phase 1 sought to examine the validity and reliability of questionnaire items concerning students' characteristics and the nature of the project. In order to meet the requirements of phase 1, the questionnaire validation procedure was adapted and this is described in the Figure 3.3.

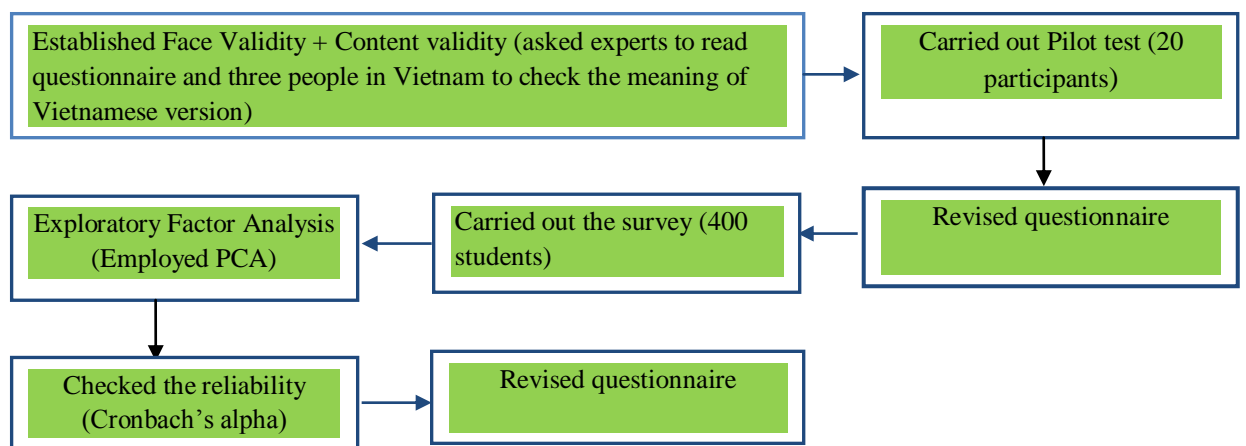


Figure 3.3: Diagram of the sequential questionnaire validation

The research participants, instrument development procedures, and data collection and analysis approach for data validation used in phase 1 of the research are described below.

3.6.1 Participants (phase 1)

The participants in this phase included 20 students for the pilot test and 400 students for the main validation step.

The researcher invited 20 students who were completing their second year at College A to participate in the pilot survey in order to identify any issues regarding the use of terms in the Vietnamese version of the questionnaire that might be confusing for EFL students. The participants were asked to mark any existing problems in the questionnaire including

nonsense items, poorly used words, unclear or ambiguous phrases and let the researcher know whether the questionnaire was too long. The pilot test was conducted in September 2016 to provide the researcher with the opportunity to revise the instrument based on participants' feedback before the main validation process started.

After the pilot test had been done, the target number of participants for the validation step was 400 Vietnamese students who were in their first year, second year and third year in four different colleges including College A, College B, College C, and College D. These four colleges were located in the South of Vietnam and all participants had to take a compulsory English course. Four hundred participants were needed because Nguyen (2014) argues that it is necessary to consider sample size when using survey research, particularly in terms of the item-to-response ratio, and further suggests that every survey item requires four participants to respond to it in order to address the issue of validity and reliability and thus allow the researcher to analyze the data meaningfully. To be more specific, the revised questionnaire from the pilot study consisted of 78 items and 400 participants appeared to be a sufficient amount to perform exploratory factor analysis to identify and validate the questionnaire.

The following section describes the questionnaire used in phase 1 in details.

3.6.2 Instrument development (phase 1)

The questionnaire instrument for phase 1 was developed to collect data regarding students' language learning strategies, attitudes towards learning English, and motivation to learn English. The questionnaire consisted of four parts (see Appendix 3A).

The first part

The first part included participants' information on gender, grade level, self-reported level of computer proficiency, age, major, and school.

The second part

The second part of the questionnaire was aimed at measuring students' language learning strategies and was adapted from Oxford's (1989) Strategy Inventory for Language

Learning (SILL). The underlying principle of selecting Oxford's SILL was that it helped to establish a shared understanding of a language learners' use of strategies over the past few decades. Various researchers (e.g., Ellis, 1994) have confirmed the comprehensiveness of SILL and it is claimed to be reliable and to be lacking in social desirability response bias (Oxford & Burry-Stock, 1995). In addition, the SILL has also yielded important findings in the language learning strategies field (Gao, 2004). However, Gao (2004) advised that the differences in contexts and tasks should be taken into account when investigating the use of language learning strategies. The SILL included six sub-strategies with 50 statement items. Each statement referred to one strategy developed from the overview of the learning strategies instrument in the relevant contemporary literature. The participants were asked to indicate their degree of agreement with the statements using a five-point Likert scale, ranging from *never or almost never true* (one point), *occasionally true* (two points), *sometimes true* (three points), *usually true* (four points) and *always or almost always true* (five points). There were six sub-strategies in this part. The first sub-strategy sought to explore students' memory strategies with nine items. The second sub-scale was used to identify students' cognitive strategies with 14 items, which mainly focused on the ways students practiced their English. In the next sub-scale, students were requested to identify their compensation strategies with 6 items. The fourth, fifth and sixth sub-strategies aimed to explore more in-depth use of metacognitive, affective and social strategies with nine, six and six items included in each sub-strategy respectively.

The third part

The third part of the questionnaire contained 10 items (five positive items and five negative items) that were designed to collect data concerning students' attitudes towards English language learning. This part was adapted from Gardner, Tremblay and Masgoret (1997). These questionnaire items have been widely used and are seen as reliable tools in research in the language learning field. The participants were asked to indicate their degree of agreement with the statements using a five-point Likert scale, ranging from *strongly disagree* (one point), *disagree* (two points), *neutral* (three points), *agree* (four points) and *strongly agree* (five points).

The fourth part

This part was aimed at exploring students' motivation to learn English as a foreign language and it was adapted from the Language Learning Orientation Scale-Intrinsic Motivation, Extrinsic Motivation and Amotivation Subscales (LLOS-IEA), which was developed by Noels, Pelletier, Clément and Vallerand (2000). According to some researchers (Comanaru & Noels, 2009; Goldberg & Noels, 2006), LLOS-IEA is an informative tool in guiding research and current understandings of motivational orientations. Due to the study's focus on intrinsic motivation and extrinsic motivation, the amotivation sub-scale was excluded. There were six sub-scales including *intrinsic motivation-knowledge* (three items), *intrinsic motivation-accomplishment* (three items), *intrinsic motivation-stimulation* (three items) and *external regulation* (three items), *introjected regulation* (three items), *identified regulation* (three items). The participants were also asked to indicate their degree of agreement with the statements using a five-point Likert scale, ranging from *strongly disagree* (one point), *disagree* (two points), *neutral* (three points), *agree* (four points) and *strongly agree* (five points).

3.6.3 Procedures (phase 1)

Three experts at the University of Southern Queensland were asked to review the questionnaire to check its face validity. After the questionnaire had been completed and face validity confirmed, they were translated into Vietnamese and a back-translation was then employed. The Vietnamese version was sent to two lecturers in charge of teaching English in Vietnam and a Vietnamese PhD student in Australia to translate it back into English. The final Vietnamese version was created after the differences between the original English version and the three translated English versions were carefully checked. The final version of the questionnaire in Vietnamese was then piloted with 20 students at College A. This pilot survey allowed the researcher to conduct some meaningful item analysis and make some amendments where necessary. When the final Vietnamese version was accepted, the researcher communicated via email with four lecturers who were currently teaching English at four colleges, College A, College B, College C, and College D to ask their help for recruiting the students to fill out the revised questionnaire from the pilot test, which was the official stage of validation procedure. The researcher asked the permission from four colleges and the permission was granted. The researcher

went to the colleges and delivered a survey to participants in four colleges face-to-face. Although electronic surveys are fast and easy, it is likely to receive low response rate because emails are not a preferred method of academic communication in Vietnam. The researcher guided the students to understand terms and items that they might not understand. Each student needed approximately 30 minutes to complete the questionnaire to ensure that they were really focused. Four hundred (400) students at four colleges were invited to complete and returned the questionnaire. The next section will present how data from this phase were analysed.

3.6.4 Data analysis (phase 1)

In order to analyse the data from phase 1, SPSS was utilised because the software is considered as a useful statistical analysis tool that provides researchers with accurate results (Pham, 2015). Before running Exploratory Factor Analysis (EFA), some initial steps needed to be done. First, descriptive statistics were used to explore the data structure of the dataset. Descriptive statistics included mean, standard deviation, skewness and kurtosis were conducted to examine the assumption of normal distribution.

Then, the researcher checked the outcome of Bartlett's Sphericity Test which was testing if the observed correlation was unlikely to have happened by chance if there was in reality no correlation. This test wanted to be statistically significant so it is necessary to look for a p-value less than .01. This test and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) were within EFA. The goal of the KMO was similar to the Bartlett's test in that it checks if the original variables could be efficiently factorized. The KMO was based on the idea of partial correlations. The sample was adequate if the value of the KMO was greater than 0.5. Principle component analysis was chosen to extract data from dataset. Determining the number of factors were determined with Eigenvalues – the default setting in most statistical software, including SPSS, was to retain all factors with eigenvalues greater than 1. During the final phase of data analysis, questions loading onto the same factors were combined and compared. A standard test of internal consistency called Cronbach's alpha was then used to check the internal consistency of questions loading onto the same factors. Based on the information gleaned from principal component analysis and Cronbach's alpha, the questionnaire was revised and was ready to be used in phase 2.

3.7 Phase 2: The experimental phase

Phase 2 was carried out at College A with its current second-year students and teachers following collection and analysis of the data in phase 1. This phase lasted from December 2016 to March 2017. The participants were divided into two groups: 1) one control group comprised of two classes; and 2) one experimental group comprised of two classes. The overarching objective of phase 2 was to investigate the effects of CALL on the components of learner autonomy to enhance Vietnamese college students' learner autonomy during a single semester. The study also attempted to understand the changes in the components of learner autonomy factors that fostered this capacity in a CALL learning environment in the local Vietnamese higher educational context. Therefore, quantitative research was employed to generate numeric data and establish correlations concerning the manner in which CALL could foster learner autonomy. Figure 3.4 describes the research design of phase 2.

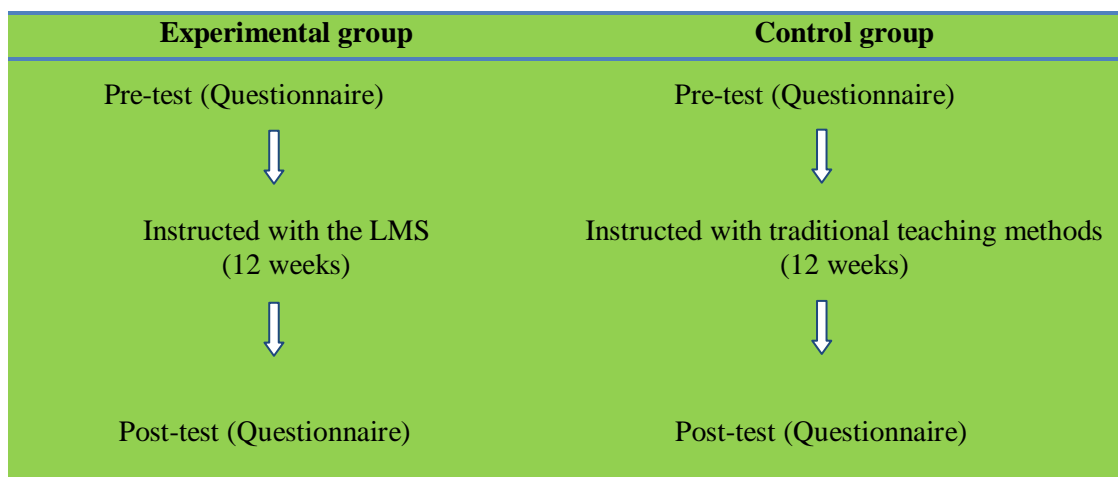


Figure 3.4: Research design for phase 2

In the experiment we have designed a TOEIC course as an integrated part of a LMS in the form of CALL, and the use of the LMS as an online platform for the TOEIC course has helped the researcher engage students as autonomous learners. An autonomous learner can be defined as possessing the aptitude for formulating cognisant decisions relevant to their own learning. The LMS has provided students with good opportunities to improve their English skills, whilst, as they function as autonomous learners, encouraging them to experiment with and adopt a new learning practice approach.

This following section includes a general description of the participants, instruments, LMS course design, data collection and analysis procedure.

3.7.1 Participants (phase 2)

The participants in phase 2 were 100 students and four teachers. Firstly, 100 students were undertaking their second year at College A with different majors including Accounting, Business administration, Computing and Finance. They were required to learn English as a compulsory subject. These 100 students were randomly assigned to the experiment and control groups. The experimental group (EG) consisted of class A and class B, and there were 25 students in each class. The control group (CG) composed of class C and class D, and there were also 25 students in each class. This approach was congruent with the guidance provided by Creswell (2005) who has advised that an optimal approach for true experimental studies was to randomly assign participants to each group of the project. It was possible to randomize all of the participants into the experimental and control groups because of the college policy and English teaching program. The selection of the experimental and control groups were based on the results of the placement tests at the beginning of the school year to ensure that the participants' level of English proficiency in each group was equal at the start of the experiment. The assignment of each group was made as shown in Table 3.1.

Table 3.1: Assignment of students and means placement test scores

Groups	Number of participants	Means score of the placement test
Experimental group		
Class A	25	6.25
Class B	25	6.31
Control group		
Class C	25	6.19
Class D	25	6.35

Apart from 100 students who were needed, four teachers were invited to voluntarily participate in this phase to be in charge of teaching four classes. For this purpose, Phan (2015) recommended that three additional eligibility criteria should be used to select teachers for the project. Firstly, their willingness to carry out the new teaching methods

was considered. In this project, the researcher needed two teachers to implement the LMS-based course, which seemed both new and challenging to teachers at College A. The teachers needed to be willing to become accustomed to, and comfortable with, the new teaching methods. Secondly, the qualifications that teachers possessed were taken into consideration. Teachers holding a Master’s degree were highly regarded as being best suited for the project. The number of years of teaching was the third criterion that was considered as it would influence students’ learning (Phan, 2015). Teachers with a minimum of 3 years of teaching experience were therefore selected for this phase.

Four teacher-participants satisfied these eligibility criteria and agreed to participate in the research. Two teachers were in charge of teaching two difference classes in the control group and two were in charge of the rest two classes in the experimental group. All teachers were female and they also attended several workshops and conferences for language teachers as professional development. The topics of these workshops and conferences included innovative teaching methods, teaching and learning with technology, and effective lesson design. A snapshot of the four teacher-participants’ profiles is provided in Table 3.2.

Table 3.2: Lecturer profiles

Teacher	Age	Qualification	Teaching experience in years	Group of teaching
Teacher A	40	Master in TESOL	15	CG
Teacher B	35	Master in TESOL	8	CG
Teacher C	30	Master in TESOL	10	EG
Teacher D	32	Master in TESOL	9	EG

3.7.2 Instrument development (phase 2)

Phase 2 included two questionnaires (pre-test and post-test) that were used to collect the data needed to develop an informed and timely answer to the research questions of this study. The questionnaire that was used in this phase was the outcome of phase 1 and it was anonymous (see Appendix 3B). The main research question of this project investigated the effects of CALL on the components of learner autonomy over a semester, and it was

therefore necessary to measure the changes to the components from the beginning to the end of the experiment.

The first questionnaire (pre-test) was administered at the beginning of the experiment; and the second questionnaire (post-test) was administered at the end of the experiment, to measure students' language learning strategies, attitudes and motivation. The first questionnaire (pre-test) consisted of four parts: 1) students' general details; 2) language learning strategies; 3) attitudes towards learning English; and 4) motivation to learn English. The first part included information on gender, major, and level of computer proficiency. The second part of the questionnaire was used to measure the students' learning strategies and included 38 items derived from the validation analysis of phase 1. All of these items focused on different strategies and were answered using a five-point Likert scale as in phase 1, ranging from *never or almost never true* (one point), *occasionally true* (two points), *sometimes true* (three points), *usually true* (four points) and *always or almost always true* (five points). There were six sub-strategies in this part (memory strategies-6 items, cognitive strategies-9 items, compensation strategies-5 items, metacognitive strategies-8 items, affective strategies- 5 items, and social strategies-5 items).

The third and fourth parts of the pre-test questionnaire were used to measure the participants' attitudes (positive attitudes-5 items, negative attitudes-4 items) and motivation (intrinsic motivation-8 items, extrinsic motivation-7 items). The participants were also asked to indicate their degree of agreement with the statements using a five-point Likert scale, ranging from *strongly disagree* (one point), *disagree* (two points), *neutral* (three points), *agree* (four points) and *strongly agree* (five points).

The second questionnaire (post-test) was a copy of the second, third and fourth parts of the pre-test questionnaire. It had the same 62 items, measuring participants' use of language learning strategies, attitudes and motivation at the end of the experiment.

3.7.3 Procedures (phase 2)

The experiment lasted for 12 weeks (12 December 2016 to 6 March, 2017). Prior to the commencement of the experiment, the learning management system (LMS) were

introduced to the experimental group. Students were required to create account to log in the LMS and they were also shown the LMS worked. Then, the pre-test of language learning strategies, attitudes towards learning English and motivation to learn English were conducted during the first week of the course to both the experimental and control groups and the experiment then started. The control group was taught with traditional teaching method using a textbook, whereas the LMS was integrated in the experimental group. As suggested by Tsai and Talley (2014), care was taken to limit the variables during this phase. As described above, before the experiment, random sampling was used to allocate the students to the control and the experimental groups, so that the characteristics of the students in each group were similar. The experimental and control groups could be considered equal in terms of English proficiency at the beginning of the experiment. In addition, four teachers were assigned to different classes in the experimental and control groups to help reduce any possible teacher effect on either group. The teaching times in both the experimental group and control group were the same, nine hours per week. The four teachers were asked to follow the same curriculum and teaching plan (see Appendix 3C). The curriculum for both the experimental and control groups were based on the course textbook (*Starter TOEIC*, Taylor & Malarcher, 2013). The curriculum required students to learn four units (units 1-4, which is units 5-8 in the textbook) in this semester. When the experiment was completed, students in the experimental and control groups filled out the post-test questionnaire. Two sets of measurement data of pre-test and post-test were generated.

The following section provides the description of the LMS that was integrated in the experimental group.

3.7.4 Description of the Learning Management System (LMS)

Learning Management System (LMS) is considered as one of the solutions that may be useful for both students and instructors in e-learning environments (Al-Busaidi & Al-Shihi, 2012; Janson, Söellner, & Leimeister, 2017). An LMS is a web-based technology that helps learners plan, distribute, and evaluate a specific learning process. The system contains software applications and features, which provide students with learning materials and content that are easily accessible and managed.

The theoretical framework for the online learning space that was employed in this study was developed by Aifudin (2016). She developed this theoretical framework with a view to boosting the quality of learning performance with a particular focus on learner autonomy. Her guidelines include the following elements:

1. Reliable and accessible support
2. Involving collaboration components
3. Continuous, constructive and timely feedback
4. Contextual teaching and learning
5. Timely feedback and support
6. Using reliable technology and assisting the mastery of sufficient technological skills and knowledge
7. Involving experimental learning activities
8. Product-oriented course activities

Aifudin (2016, p. 139-141)

The LMS-based course was a collaborative space and consisted of a user-friendly platform that was designed by the researcher and some colleagues, while approved for integration into the curriculum was provided by the college authorities. The LMS was based on the core content of the existing textbook of the syllabus used in the institution, namely *Starter TOEIC*, written by Anne Taylor and Casey Malarcher (2013). The reason for this choice was that it aligned with the existing curriculum and it was necessary to implement innovative teaching methods to help motivate students to achieve better results using the same content. Consequently, the level of English competency of students should meet the requirements of corporate recruiters.

The focus of the LMS-based lessons was student-centered to enhance students' responsibility and ability to set learning goals, as well as plan, implement and evaluate their learning. Teachers and students used the target language for instruction and learning performance in the classes. Authentic content, including websites, videos and pictures, was used for scaffolding and for stimulating the students' learning interests. Schwienhorst (2003) outlined three approaches to enhancing learner autonomy in CALL environments: 1) individual-cognitive approach; 2) social-interactive approach; and 3) experimental-participatory approach. Within the individual-cognitive approach, reflective processes are aided through the act of writing. Additionally, in the social-interactive approach, interactions with peers promote autonomy, and in the experimental-participatory approach, students are encouraged to be their own agents and to take their own actions and make their own choices. Consistent with Schwienhorst's (2003) outline and Aifudin (2016)'s theoretical framework for the online learning space, the LMS incorporated a variety of teaching and learning activities as described below.

The 'Home' page of the LMS course contained different activities for students providing a choice in the ways they could interact with the content, instructors and classmates, as shown in Figure 3.5.

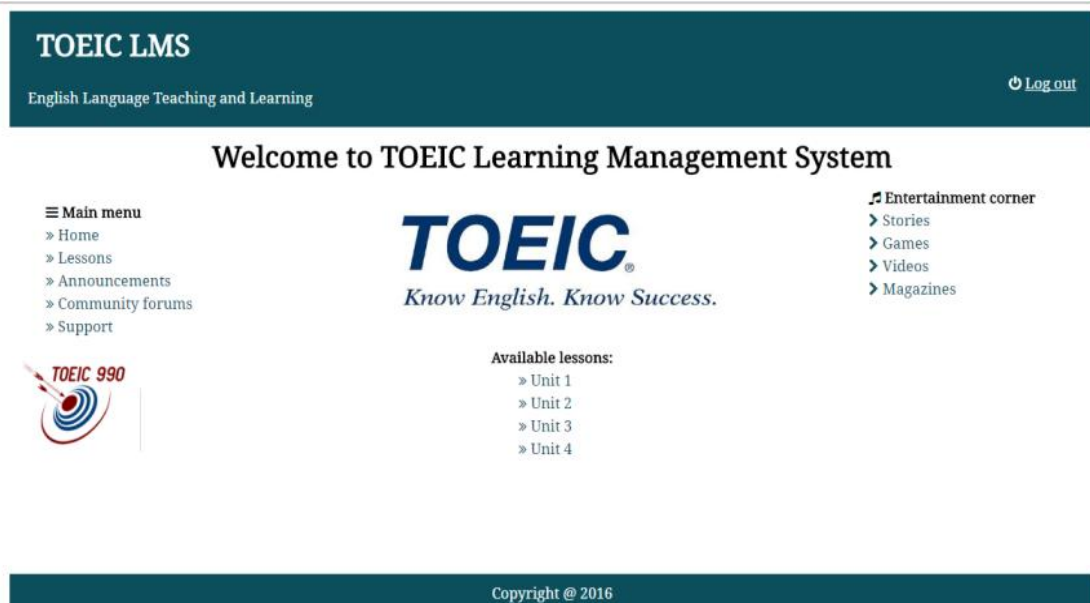


Figure 3.5: LMS course home page

According to the college's curriculum policy, second-year students needed to study four units. These four units were designed in a particular way and contained different topics regarding business themes. For each unit, the students were responsible for practicing their English skills. The sample activities of each skill are described as follows:

Regarding the *speaking activities*, students were presented with various questions for a discussion in spoken language. They then needed to discuss these questions with their peers using the headsets in the laboratories, and express their ideas and points of view with respect to issues raised in each question. Some of questions are illustrated in Figure 3.6.

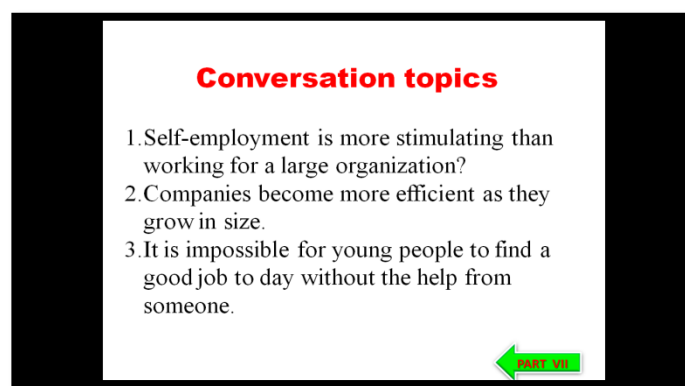


Figure 3.6: Conversation topics

Besides the speaking activities in the lessons, students were also required to work in groups of three or four people to choose one topic from a list of 10 topics for which careful preparation was requested in order to make a meaningful presentation, which was videotaped and then uploaded in the forum. Each group needed to give a weekly presentation. Participants needed to use the internet to search for relevant information, and select useful video clips and hyperlinks to support their presentation sessions. According to Figura and Jarvis (2007), computer-based materials also encourage learners to use cognitive strategies and apply metacognitive awareness in language learning. Computer-based instructional materials and web-based materials for language learning could provide students with a variety of authentic and pedagogical materials that have a positive influence on learner autonomy. The ability to work outside class without a teacher's presence is necessary for the development of learner autonomy (Levy & Stockwell, 2006).

With regard to the *reading activities*, students read the text and answered the questions by clicking on the answer they believed was correct. If their response was incorrect, they received an audible indication that they needed to choose again. The explanation also appeared, to allow them understand, as depicted in Figure 3.7. On this point, Dam (1995) confirmed that independent action, decision making and freedom of choice would stimulate learner autonomy development.

Figure 3.7: Reading activities

Figure 3.8: Listening activities

With respect to the *listening activities*, students were required to listen to the tasks and choose the correct answers. They were provided with an explanation as to why the appropriate response was the correct answer (see Figure 3.8). Students were allowed to

listen to the tasks as many times as they wanted. This activity was consistent with the guidance provided by Louis (2006) that teachers should encourage learners to work independently and make decisions by themselves because it helps students develop awareness of individual responsibilities for learning.

In the *vocabulary activities*, students learned vocabulary with sounds and through the presentation of images with definitions. The LMS included automatic speech recognition (ASR) technology for vocabulary practice. Students' responses were recorded and scored to provide them with feedback about the accuracy of their pronunciation. Figure 3.9 illustrates an example of a representative vocabulary activity and the ASR tool. These activities helped students become more involved in learning, which is considered as a fundamental factor in improving autonomy (Little, 2007).



Figure 3.9: Vocabulary activities

In the *writing activities*, there were community forums where students could interact with the teachers and with their classmates. The students were asked to discuss a list of topics that teachers had assigned. Students were supposed to share their concerns or any issue they wanted to discuss with regards to language learning. This activity was consistent with the guidance provided by Kaur and Sdhu (2010) who emphasizes that asynchronous online interaction can stimulate language learner autonomy. Students have the opportunity to develop their metacognitive strategies by evaluating their learning process (Oxford, 1990).

Apart from the main content, students had access to other supporting materials which promoted engagement with the coursework. For example, the entertainment corner was linked to the ESL websites. Students could play games such as crossword puzzles, which had six levels from level 1 (the easiest) to level 6 (the most difficult). For this, they were asked to click on the number to see the clues or they could directly type the answers in the crossword cells. In case students did not know the answer, they could click on the “Hint” button for clues. Students could also learn about vocabulary and grammar by reviewing contributions from others around the world and most of the quizzes were in the form of multiple-choice, flashcards and matching. Videos were available that helped learners get exposure to language used in real-world environments. Those videos further enabled students to practice pronunciation by listening and repeating daily uploaded sentences to pick up not only new words, but also useful expressions (see Figure 3.10).

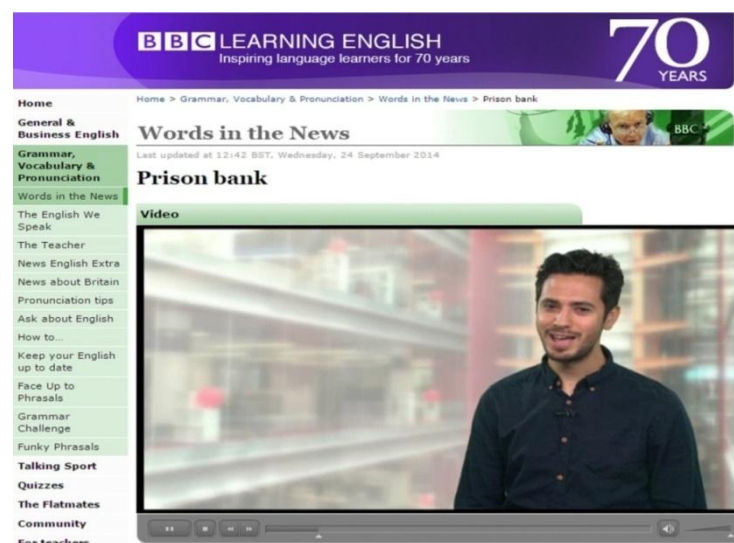


Figure 3.10: Extra activities

3.7.5 Data analysis (phase 2)

An internal consistency test with Cronbach’s alpha was employed to check the reliability of the questionnaire. Then, in an attempt to analyze the data gathered through the pre-test and post-test questionnaires, paired sample t-tests were adopted to determine if there were any significant differences in students’ use of language learning strategies, attitudes and motivation between the experimental and control groups before and after the experiment,

using a 5% chance ($p \leq 0.05$) threshold for confidence. The data of three components of learner autonomy were analyzed separately.

When the experiment had finished, phase 3 of the study started and the details of this phase are presented in the following section.

3.8 Phase 3: The interview phase

Phase 3 was aimed at gaining insights into any students' changes in learner autonomy or mediating factors that helped them to have more frequent use of learning strategies, as well as increase in their attitudes and motivation to learn English in CALL learning environment.

3.8.1 Participants (phase 3)

There were fifteen students and two teachers invited to take part in the interviews. All of them came from the experimental group. The interviews with the students explored their experiences regarding how CALL helped them use learning strategies effectively and how CALL inspired and motivated them to learn English, and in particular promote their learner autonomy. The interviews with the teachers were likewise aimed at obtaining their views on similar issues but from an educator's perspective.

3.8.2 Interview protocol development (phase 3)

The face-to-face semi-structured interviews with each participants consisted of three parts. The first part required students to provide information concerning their English learning strategies before and after the experiment. Specifically, students were asked about how they: 1) planned for the overall process of learning English, 2) used different learning strategies for specific tasks and exercises, and 3) evaluated their learning process and goal achievement. The second and the third part was used to investigate students' changes in attitudes and increases in their motivation following the CALL intervention. During this process, two teachers were invited to take part in the interview to express their thinking and ideas on students' learning engagement in the class. The details of interview questions

are presented in Appendix 3D. Below are representative examples of the interview questions:

- What do you think about the benefits of CALL for students in terms of learner autonomy? (Teachers)
- Which language learning strategies do you use most? (Students)
- Would you explain why are you learning English? (Students)

3.8.3 Procedures (phase 3)

The researcher was responsible for carrying out the interviews. The researcher invited fifteen students and two teachers in the experimental group to participate in the interviews. Approximately 30 minutes were required for each participant to answer the interview questions. The interviews took place in a meeting room on the College campus on 13 March 2017. The participants were informed that their participation in the interviews was completely voluntary and would not influence their study result. The interviews were conducted in Vietnamese and were audio-recorded.

3.8.4 Data analysis (phase 3)

Data analysis in this phase was done based on Phan's (2015) suggestion. Three steps were needed to analyze the qualitative data for this study: 1) obtaining a general sense of the materials; 2) coding the data; and 3) generating themes. In this study, transcription, translation with back translation, and consultation with other people were carried out first before the official data analysis commenced.

Transcription

This step has been considered as an important bridge between interviews and data analysis (Dortins, 2002). It is necessary to transcribe qualitative interview data in the participants' language, and the script then requires translating into the target language (Lopez et al., 2008). According to Phan (2015), there are two aspects that the researcher should consider in the transcription process: 1) who should transcribe; and 2) what to transcribe.

In this case, the researcher assumed responsibility for the transcription because he spent time listening to the data many times in order to ensure that he definitely understood the detailed interviews. The interview data were transcribed in two stages. Firstly, a verbatim transcript, which was a word-for-word or faithful reproduction of verbal data, was created. Halcomb and Davidson (2006) suggested that the researcher should incorporate silences and body language and emotional aspects like crying, coughs or signs into transcribed texts at this stage, using brackets within the verbatim script. The anonymity and confidentiality of the participants needed to be ensured. Therefore, each recording was labeled with participants' corresponding codes. The researcher typed the transcriptions and saved them on a computer-based word processing application so that he could review them as needed. The researcher repeatedly listened to the recordings and checked the transcriptions to ensure accuracy.

Translation

Translation was an important consideration because the collected qualitative data were in Vietnamese and were reported in English. According to Sutton and Austin (2015), the research findings would not be as trustworthy if the translation was not done accurately. To ensure the validity of the research results, the quality of translation should be taken into consideration (Phan, 2015; Nguyen, 2017).

Regarding the first aspect of who was responsible for the translation, Temple and Young (2004) suggested that researchers should consider the impact of translation-related decisions, such as the translators' language competence, the translators' autobiography, and the translators' knowledge of the culture of the participants being investigated. The two translators needed to be bilingual and sufficiently educated to become familiar with the concepts and terms used in this research project (Nurjannah, Mills, Park, & Usher, 2014). This study required a translator with a higher level of bilingualism because the conversations involved lecturers and students talking about their empirical observations and experiences with CALL. Furthermore, translators should have a close working relationship with the researcher to ensure the effectiveness and the efficiency of the research progress (Kirkpatrick & van Teijlingen, 2009). Two translators for this study were Vietnamese/English bilinguals because the data were collected in the source

language, Vietnamese. It was crucial for the translators to have experience in the field of education practice and research.

With respect to the adequacy of translation, important techniques included back translation and consultation with other people who were also employed in this study in order to avoid translation-related problems (Chen & Boore, 2009; Temple & Young, 2004) as described further below.

Back translation

Back translation was one of the most highly recommended techniques in the translation process (Temple & Young, 2004). For the purposes of this study, the translator translated from Vietnamese to English, and the other translator was responsible for independent or blind translation back to English. The purpose of back translation was to “modify words and concepts that have no clear equivalence in the other language” (Phan, 2015, p. 124). The back translation process needed to be done through several rounds to avoid discrepancies in the original version and the back translated version. As a result, the final back translation version should be close to the target language version to increase the adequacy of translation.

Consultation with other people

Discussing with one person, or a group of bilingual people their decision-making process concerning the use and meaning of problematic words and use of the best terms, was considered a useful consultative procedure (Birbili, 2000). The consultants should be experts in aspects regarding the current study for example in relation to language, methodology and culture, which also aids in ensuring adequate debate on issues that may result from differences in translation (Chen & Boore, 2009). Therefore, in this study, the researcher combined back translation and consultation with experts in order to ensure adequacy of translation.

The researcher transcribed the interviews with teachers and students in Vietnamese, which were then translated into English also by the researcher. The translated versions were then checked several times to ensure translation accuracy. The direct quotations were

maintained in both Vietnamese and English to avoid translation bias. Following these steps, the researcher consulted with his colleagues who were Vietnamese English teachers to develop the most accurate translation. The researcher consulted with two experts who were good at professional and academic English for audiences in global contexts concerning some specific points of translation.

Obtaining a general sense of material

During this step, the researcher read the transcripts numerous times to become familiar with the content and develop a clear understanding of the information supplied by the participants to avoid missing any important ideas and information. The key information in the responses were then identified and recorded for the next phase of coding.

Coding data

This step was a central part of preparing data for later data analysis and included classifying and labeling text to form themes identified in the qualitative data (Creswell, 2008). The topics and themes were coded and data segments were incorporated into this study. The researcher followed the suggestion of Pham (2015) in terms of coding transcriptions of interviews. First, the researcher used descriptive, topic and analytic coding techniques for students and teachers to analyse randomly selected transcriptions. In order to explore topics and themes that emerged in the transcriptions, each statement of the students and teachers was analysed as an individual unit (Lee, 2012, cited in Pham, 2015). Second, the researcher drew up a more refined set of codes after all the transcriptions were initially coded.

Generating themes

After retrieving and organizing codes, themes could be found and clustered (Ryan & Bernard, 2003). To this end, the researcher compiled a short list of codes to develop a more refined set of themes so that the process of reporting detailed information was more manageable (Creswell, 2008). For example, the list of codes was reduced by comparing them with key themes from the literature review, the theoretical framework, and the

research questions. The emerging themes were also considered and noted for later analysis.

As mentioned earlier, the current study employed a mixed methods research design in which both quantitative (phase 2) and qualitative data (phase 3) were analyzed to develop timely and informed answers to the study’s guiding research question and sub-questions. The next section presents the triangulation of two data sets.

3.9 Triangulation of two data sets

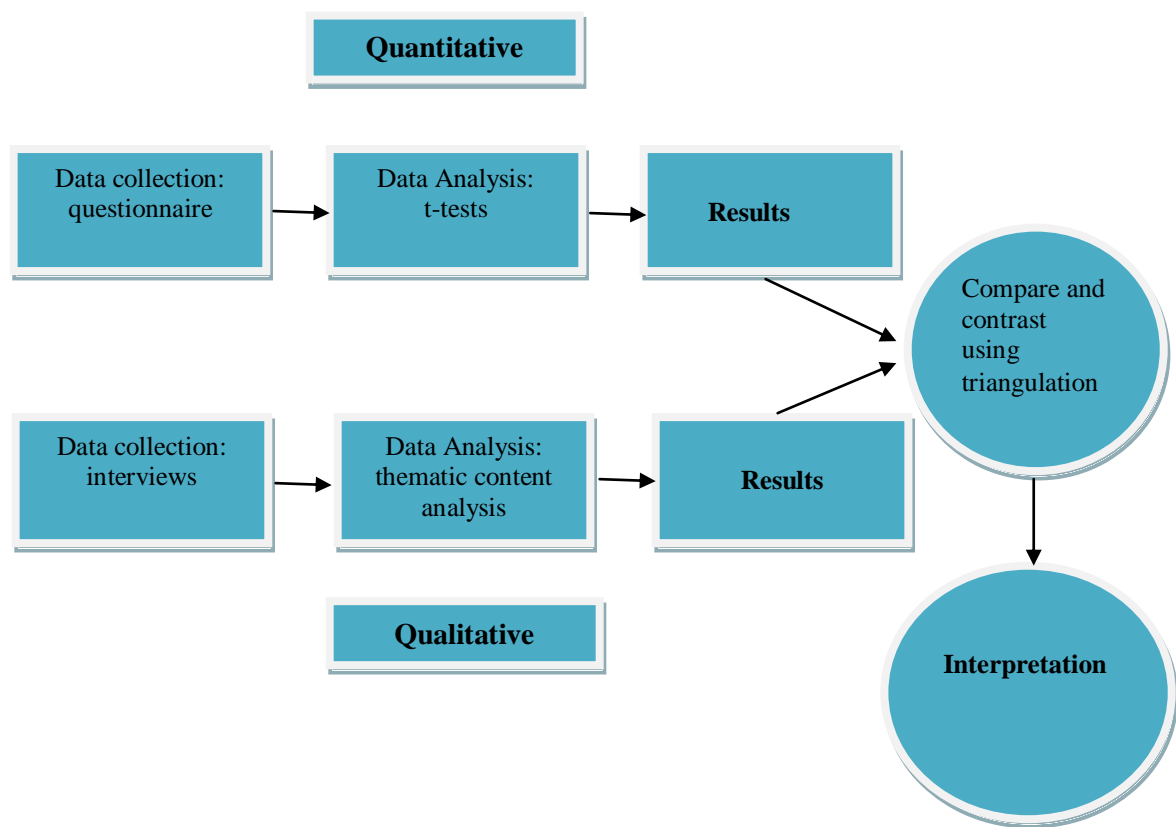


Figure 3.11: Data analysis process

In this mixed-methods study, the results of quantitative data analysis were supported and/or explained by findings from analyzing qualitative data of interviews with teachers and students. This is called a triangulation of findings from both data sets. For the purpose of triangulation, t-tests were performed to identify the changes or differences in three components before and after the experiment was done: (a) language learning strategies; (b) attitudes towards learning English; and (c) motivation to learn English. Analyses of the interview data provided a detailed view of how these components were affected by CALL,

and identified the relationship between CALL with each component in terms of learner autonomy enhancement. The results of phase 2 and phase 3 would be compared and contrasted using triangulation. The diagram 3.11 reflects how different sources of data were collected, analysed and triangulated to answer research question of the current study.

3.10 Ethical issues

According to Rallis and Rossman (2009), in order to ensure the trustworthiness of a study, it is necessary to conduct the study in an ethical manner. Ethics approval from the University of Southern Queensland was sought before the commencement of the research. Participants were invited to voluntarily participate in this study and it was made clear to them that there would no pressure put upon them to participate in the research or to continue their participation at any point. The participants could stop participating at any time without any consequences. The benefit to the participants came in the form of their use of the English language to complement their studies and its potential benefits to their future learning. At the end of the survey, they were asked if they were willing to take part in the interviews. In the informed consent statement, the rights and obligations of participants and researcher were clearly stated. They could withdraw at any time without penalty. Their withdrawal would not affect their relationship with the researcher and this was discussed with them so that they felt free to make their own decision.

3.11 Chapter summary

This chapter has presented the research design and methodological choices used in three phases of the current study, with the specific research questions that guided the study. The rationale in support of the use of mixed methods approach was described as being needed to provide the rich, thick, and broad results aimed at developing timely and informed answers to the study and addressing the research question regarding the effects of CALL on learner autonomy. This chapter also provided a brief description of the participants, the college setting and the experimental intervention, which was the LMS-based course design. Specifically, the objectives, participant recruitment, instrument development and data collection and analysis procedure in each phase of the study were described in detail. The researcher carefully designed and conducted the data collection and analysis to ensure the highest possibility of providing clear answers to the research question. Quantitative

data were employed in phase 1, which used a questionnaire to clarify the learning strategies college students were using and the attitudes and motivation they had towards English language learning. The survey instrument was then validated to be used in the second phase of the study. This chapter also described how phase 2 was implemented with an experiment during a 12-week course, which was comprised of three stages. The first stage (pre-test) collected a set of quantitative data, using the validated questionnaire from phase 1. The questionnaire used during this stage was designed to measure the students' learning strategies, attitudes and motivation to identify their levels of learner autonomy. The second stage involved the experiment. The third stage (post-test) also generated the quantitative data from the copy of the questionnaire in stage one to measure any changes in students' learner autonomy. Phase 3 employed semi-structured interviews with students and teachers from the experimental group. This qualitative data set was designed to understand the opinions about factors or elements that mediated the students' learner autonomy during the experimental stage that used CALL. The purpose of the chapter that follows is to present the results generated from this research design.

Chapter 4: Results

4.1 Introduction

This chapter presents findings from the analysis of the data collected through three phases in the study. The first part of the chapter reports on the results of phase 1. A statistical analysis of the data was employed to offer reliable questionnaire results, which would be used in the second phase for understanding language learning strategies, attitudes and motivation of EFL students in Vietnam in relation to the components of learner autonomy. The second part of the chapter presents the results of phase 2 to find out if there were any changes or differences in three components of learner autonomy of students in the experimental and control groups when the treatment ended. The last part of the chapter is the data analysis from the interviews (phase 3) conducted with 15 students and 2 teachers in the experimental group. The findings of each phase are reported separately.

4.2 Results of phase 1: Questionnaire validation

As mentioned in chapter 3, the aim of phase 1 was to validate the questionnaire. Phase 1 included 400 participants who were asked to answer the questionnaire and 352 responses were analyzed. The results below are data collected from phase 1 and are presented based on the following order:

- Data management, coding and screening
- Demographic information
- The exploratory factor analysis

4.2.1 Data management, coding and screening

Quantitative data were collected using questionnaires that included three main sections: Language learning strategies, Attitudes towards learning English, and Motivation to learn English. Each completed questionnaire was given a coded number (e.g. the first questionnaire was coded as ID1, and the second questionnaire was coded as ID2...). This made it easier for the researcher to double-check data input to avoid any typing mistakes. Information from the completed questionnaires was then loaded onto SPSS for statistical

analysis of quantitative data. Data were subsequently double-checked to ensure correctness, and processed for analysis. The subscales of the questionnaire were renamed as shortened scales as follows:

Language learning strategies

MEM: Memory strategies

COG: Cognitive strategies

COM: Compensation strategies

MET: Metacognitive strategies

AFF: Affective strategies

SOC: Social strategies

Attitudes towards learning English

PAT: Positive attitudes

NAT: Negative attitudes

Motivation to learn English

IMK: Intrinsic motivation-Knowledge

IMA: Intrinsic motivation-Accomplishment

IMS: Intrinsic motivation-Stimulation

EXR: External regulation

INR: Introjected regulation

IDR: Identified regulation

The questionnaire was delivered to 400 participants at four colleges in the South of Vietnam. From the sample size, 366 students returned the questionnaire (approximately 91%). Before conducting the statistical analyses, the data were screened for missing data, univariate, bivariate and multivariate outliers, and normality. Eight cases were excluded due to answering “1” (strongly disagree) and “5” (strongly agree) for all questions and as a result, 358 students remained. The data set was then checked for outliers. Six students were deleted from further analysis as they were found to be both univariate and multivariate outliers (two outliers for memory strategies, one outlier for cognitive strategies, two outliers for positive attitudes and one outlier for external regulation), thus reducing the sample size to 352. Next, the data set was examined to determine if it met assumptions for normality. Tests of normality, box plots, graphs and Z scores values for skewness and kurtosis showed that results were reliable as all skewness and kurtosis values for variables of interests in the present study were within the suggested ranges (see Appendix 4A). The sample size ($n = 352$) for the current study falls within an acceptable range of a ratio of five cases to one item (Costello & Osborne, 2005). Lastly, the strengths of inter-item correlations were checked. This assumption was satisfied as many correlation indices above .30 were detected (Mertler & Vannatte, 2010). The following section describes the demographic information of 352 participants in phase 1.

4.2.2 Demographic information

Self-report data regarding the demographic variables: (a) gender; (b) grade level; (c) computer proficiency; (d) age; and (e) the major and school they attended (see Tables 4.1 and 4.2). Of the 352 students, 50.57% were male, and 49.43% were female. Of the 352 students who reported their college grade level, 34.09% were first year, 34.94% were second year, and 30.97% were third year. Regarding the computer proficiency, roughly 44.03% were at ‘ok’ level, 28.69 % of the students were good at using computer, 12.51% and 4.26% were very good and very bad at computer respectively, while the percentage of students with ‘bad’ computer level was 10.51%. Of the 352 students who reported their ages, approximately 43.75% were between the ages 18 and 19, 50.57% of the students were between 20 and 21, and 5.68% of the students were over 21. Of the academic majors, 7.1% were science students, 75.28% were humanities students, 17.61% were engineering students.

Table 4.1: Participants’ academic majors and schools in the four-college sample

Academic majors (n=352)	Science		Humanities		Engineering		% of the sample
	Freq.	%	Freq.	%	Freq.	%	
Computing	25	100	–	–	–	–	7.1
Finances	–	–	52	19.63	–	–	14.77
Social studies	–	–	41	15.47	–	–	11.65
Business administration	–	–	58	21.88	–	–	16.48
Accounting	–	–	67	25.29	–	–	19.03
English	–	–	47	17.73	–	–	13.35
Mechanical engineering	–	–	–	–	28	45.16	7.95
Electrical engineering	–	–	–	–	34	54.84	9.66
Total	25	7.1	265	75.28	62	17.61	100

Table 4.2: Participants' gender, grade level, computer proficiency, and age in the four-college sample

Variables	College A (n=87)		College B (n=98)		College C (n=85)		College A (n=82)		Total (n=352)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Gender										
Male	53	60.92	45	45.92	41	48.24	39	47.56	178	50.57
Female	34	39.08	53	54.08	44	51.76	43	52.44	174	49.43
Grade level										
First year	32	36.78	30	30.61	27	31.76	31	37.80	120	34.09
Second year	30	34.48	35	35.71	34	40	24	29.27	123	34.94
Third year	25	28.74	33	33.68	24	28.24	27	32.93	109	30.97
Computer proficiency										
Very bad	3	3.44	2	2.04	4	4.70	6	7.31	15	4.26
Bad	12	13.79	9	9.18	7	8.24	9	10.98	37	10.51
Ok	43	49.43	40	40.82	35	41.18	37	45.12	155	44.03
Good	18	20.69	37	37.76	24	28.24	22	26.83	101	28.69
Very good	11	12.65	10	10.20	15	17.64	8	9.76	44	12.51
Age										
18-19	28	32.19	39	39.80	46	54.12	41	50	154	43.75
20-21	56	64.37	50	51.02	33	38.82	39	47.56	178	50.57
Over 21	3	3.44	9	9.18	6	7.06	2	2.44	20	5.68

4.2.3 The exploratory factor analysis

An exploratory factor analysis was conducted with the data collected from 78 questionnaire items in three main parts in order to check the construct validity. The purpose of this was to produce a better version of the questionnaire that had fewer items with satisfactory levels of internal consistency reliability. Principal Component Analysis (PCA) with Varimax, one method of oblique rotation, seemed to be an appropriate choice to be employed. Items with factor loadings smaller than .40, items having cross loadings with a difference smaller than .30 and items solely loading onto one factor would be removed. Expert validation was also employed to remove items whose meanings were not essentially related to the majority of items in the same scale. An examination of the factor loading of the 50 items of Language learning strategies, 10 items of Attitudes towards learning English and 18 items of Motivation to learn English measures are discussed in the following section.

Factor analysis for the Language learning strategies measure

The Language learning strategies measure was the first main part of the questionnaire. Originally, the Language learning strategies measure was adapted from Oxford's (1989) Strategy Inventory for Language Learning (SILL). The SILL included six sub-strategies with 50 items. The subscales of this questionnaire section were renamed as shortened scales as follows.

MEM: Memory strategies

MET: Metacognitive strategies

COG: Cognitive strategies

AFF: Affective strategies

COM: Compensation strategies

SOC: Social strategies

An exploratory factor analysis was conducted with the data collected from the 50 questionnaire items to extract possible clusters of these items. Table 4.3 shows the strong partial correlations (Kaiser-Meyer-Olkin measure = .884) and statistically significant correlations (Bartlett's test $p < .01$) among the 50 items suggesting the suitability of the data for factor analysis.

Table 4.3: KMO and Barlett's Test of the sample

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.884
Bartlett's Test of Sphericity	Approx. Chi-Square	8938.689
	Df	1225
	Sig.	.000

Principal Component Analysis (PCA) was used as the extraction method because PCA is the most popular extraction method (Costello & Osborne, 2005). The item loadings were suppressed to .40. Ten factors were extracted, accounting for 20.522, 9.834, 7.786, 6.054, 5.220, 3.664, 2.375, 2.295, 2.279, and 2.055 percent of the total variance respectively, making for a total of 62.085 percent of the total variance being explained (see Table 1, Appendix 4B).

When PCA with Varimax rotation was employed in the factor analysis, the ten factors extracted from the 50 items accounted for 62.085 percent of the total variance explained. This preliminary extraction indicated that COG9, MEM7, COG10, COG14 had cross loadings with a difference smaller than .30 (see Table 2, Appendix 4B). Therefore, these items were removed. The same procedure of factor analysis was conducted again with the remaining 46 items, and the nine extracted factors accounted for 61.629 of the total variance explained (see Table 3, Appendix 4B). The factor loadings of each item were examined and item MEM9 was removed because this item had cross loadings with a difference of less than .30 (see Table 4, Appendix 4B). The same procedure of factor analysis continued to be conducted with the remaining 45 items, and the eight extracted factors accounted for 60.118 of the total variance explained (see Table 5, Appendix 4B). The factor loadings of each item were reexamined and items MEM3 and SOC4 were removed because item MET3 had its loading smaller than .40, and item SOC4 had cross-loadings (with less than .30 difference) (see Table 6, Appendix 4B). The fourth procedure of factor analysis was carried out with the remaining 43 items, and the seven extracted factors accounted for 59.581 of the total variance explained (see Table 7, Appendix 4B). The factor loadings of each item were also examined and item COM3 was removed because its loading was smaller than .40 (see Table 8, Appendix 4B). The fifth procedure of factor analysis was reconducted with the remaining 42 items, and the seven extracted

factors accounted for 60.612 of the total variance explained (see Table 9, Appendix 4B). This time, item MET3 was removed because it was solely loaded onto one factor (see Table 10, Appendix 4B). The factor analysis was rerun with the remaining 41 items, and the seven extracted factor accounted for 61.609 percent of the total variance explained (see Table 11, Appendix 4B), and items COG3, COG4 had cross-loadings with a difference of less than .30, and item AFF5 had its loading smaller than .40, so these items were removed (see Table 12, Appendix 4B). The factor analysis continued to be run and six factors were extracted and accounted for 22.583, 10.691, 9.266, 7.490, 6.219 and 4.403 percent of the total variance respectively, a total of 60.653 percent of the total variance explained (see Table 4.4). There were not any items that needed to be removed at this stage because they all obtained a factor loading of greater than .40. The factor loadings are presented in Table 4.5.

Table 4.4: An extract of the total variance explained when 38 items were included

Component	Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.582	22.583	22.583	8.582	22.583	22.583
2	4.063	10.691	33.274	4.063	10.691	33.274
3	3.521	9.266	42.540	3.521	9.266	42.540
4	2.846	7.490	50.031	2.846	7.490	50.031
5	2.363	6.219	56.250	2.363	6.219	56.250
6	1.673	4.403	60.653	1.673	4.403	60.653
7	.948	2.494	63.146			
38	.171	.449	100.000			

Extraction Method: Principal Component Analysis

Table 4.5: Factor analysis of the 38 items on language learning strategies

Rotated Component Matrix^a

	Component					
	1	2	3	4	5	6
COG5	.867					
COG7	.854					
COG11	.817					
COG12	.790					
COG13	.754					
COG8	.728					
COG2	.720					
COG6	.650					
COG1	.583					
MEM1		.845				
MEM5		.837				
MEM6		.822				
MEM2		.818				
MEM4		.793				
MEM8		.726				
MET6			.698			
MET7			.693			
MET1			.680			
MET2			.673			
MET4			.669			
MET8			.660			
MET9			.654			
MET5			.616			
COM5				.871		
COM6				.850		
COM1				.845		
COM2				.763		
COM4				.543		
AFF1					.789	
AFF4					.786	
AFF3					.764	
AFF6					.761	
AFF2					.760	
SOC5						.771
SOC6						.767
SOC3						.759
SOC1						.709
SOC2						.629

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

To ensure that the meaning of every item in a factor referred to some similar construct, an expert validation process was employed. Two professors of education examined the meaning of each items in its respective factor and none of the items were removed at this

stage. At the end of the EFA procedure, the Language learning strategies measure had 9, 6, 8, 5, 5, 5 items in factor one, two, three, four, five and six respectively. Six subscales remained as the origin and therefore, the researcher kept the original name for each factor. Their names were ‘cognitive strategies’, ‘memory strategies’, ‘metacognitive strategies’, ‘compensation strategies’, ‘affective strategies’, and ‘social strategies’.

Inter-factor correlations and internal consistency reliability

Inter-correlation coefficients were generated for memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies (Table 4.6). In terms of convergent validity, it was expected that these six strategies would significantly and positively correlate with each other.

Table 4.6: Inter-factor correlations for subscales of the Motivation measure

Variables	1	2	3	4	5	6
Memory strategies	-	-	-	-	-	-
Cognitive strategies	.227**	-	-	-	-	-
Compensation strategies	.149**	.236**	-	-	-	-
Metacognitive strategies	.270**	.154**	.266**	-	-	-
Affective strategies	.120*	.175**	.285**	.255**	-	-
Social strategies	.359**	.374**	.398**	.163**	.233**	-

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

As expected, a statistically significant correlation was found between every four pair of the six factors ($.120 \leq r \leq .398, p \leq .01$). However, the correlation between memory strategies and affective strategies ($r = .120, p = .05$) was not significant. Internal consistency reliability analysis with Cronbach’s alpha was generated for the subscales of the Language learning strategies in the present study. Memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies, social strategies were reliable at Cronbach’s alphas of .910, .908, .860, .828, .851, and .841 respectively. To sum up, the Language learning strategies measure had six factors with 50 items originally, and after the EFA, this measure still had six factors with 38 items only.

Factor analysis for the Attitudes towards learning English measure

The Attitudes towards learning English measure was the second main part of the questionnaire. This part contained 10 items (five positive items and five negative items) and it was adapted from Gardner, Tremblay and Masgoret (1997). The subscales of the questionnaire were renamed as shortened scales: PAT for Positive attitudes and NAT for Negative attitudes.

Table 4.7: KMO and Barlett's Test of the sample

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.870
Bartlett's Test of Sphericity	Approx. Chi-Square	1618.520
	Df	45
	Sig.	.000

This scale had strong partial correlations (Kaiser-Meyer-Olkin measure = .870) and statistically significant correlations (Bartlett's test $p < .01$) among the 10 items suggesting the possibility that the data could be factored (see Table 4.7).

PCA with Varimax rotation was run for part 2 of the questionnaire on students' attitudes towards learning English. The items loadings were suppressed to .40. Two factors were extracted, accounting for 43.014 and 19.670 percent of the total variance respectively, a total of 62.683 percent of the total variance explained (see Table 13, Appendix 4B for an extract). The factor loadings of each item were examined, and item NAT1 was removed at this stage because it obtained factor loading smaller than .40 (see Table 14, Appendix 4B).

The same procedure of factor analysis was conducted again with the remaining 9 items, and the two extracted factors accounted for 69.329 percent of the total variance explained (see Table 4.8). The factor loadings of each item were examined and no more items were removed because they all obtained a factor loading of greater than .40. The factor loadings are presented in Table 4.9, an expert validation was employed and none of the items were removed, and they were labeled the same as in the previous study, factor one with five

items was named as ‘Positive attitudes’ and factor two with four items was named as ‘Negative attitudes’.

Table 4.8: The total variance explained when 9 items were included

Component	Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.289	47.658	47.658	4.289	47.658	47.658
2	1.950	21.671	69.329	1.950	21.671	69.329
3	.589	6.542	75.871			
4	.458	5.085	80.956			
5	.436	4.841	85.797			
6	.382	4.243	90.041			
7	.340	3.777	93.817			
8	.310	3.449	97.266			
9	.246	2.734	100.000			

Extraction Method: Principal Component Analysis

Table 4.9: Factor analysis of the 9 items on Attitudes

Rotated Component Matrix^a		
	Component	
	1	2
PAT4	.870	
PAT3	.860	
PAT5	.826	
PAT1	.799	
PAT2	.789	
NAT3		.855
NAT5		.816
NAT2		.778
NAT4		.768

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.^a

a. Rotation converged in 3 iterations.

Inter-factor correlations and internal consistency reliability

To provide evidence for the construct validity of the Attitudes towards learning English measure, inter-scale correlation was conducted (Table 4.10). In terms of discriminant

validity, positive attitudes was expected to significantly and negatively correlate with negative attitudes.

Table 4.10: Inter-factor correlations for subscales of the Attitudes measure

Variables	1	2
Positive attitudes	-	-
Negative attitudes	-.353**	-

** . Correlation is significant at the 0.01 level (2-tailed).

As expected, positive attitudes was significantly and negatively correlated with negative attitudes ($r = -.353, p = .01$). To assess the internal consistency reliability of the Attitudes towards learning English measure, Cronbach's alpha was generated. In the present study, the 'Positive attitudes' and 'Negative attitudes' measures reported acceptable levels of internal consistency reliability with alphas of .897 and .834 respectively. To sum up, before running the EFA the Attitudes measure had two factors with 10 items and this measure remained two factors with 9 items after the EFA.

Factor analysis for the Motivation to learn English measure

The Motivation to learn English measure was the part 3 of the questionnaire. It was adapted from LLOS-IEA developed by Noels et al. (2000). There were six subscales including intrinsic motivation-knowledge (three items), intrinsic motivation-accomplishment (three items), intrinsic motivation-stimulation (three items), external regulation (three items), introjected regulation (three items), and identified regulation (three items), The subscales of the questionnaire section were renamed as shortened scales as follows:

IMK: Intrinsic motivation-Knowledge	EXR: External regulation
IMA: Intrinsic motivation-Accomplishment	INR: Introjected regulation
IMS: Intrinsic motivation-Stimulation	IDR: Identified regulation

The valued for Bartlett's test was significant at $p = 0$ and the Kaiser Meyer-Olkin (KMO) index was .910 among 18 items (see Table 4.11). For this reason, the Motivation measure was suitable for exploratory factor analysis.

Table 4.11: KMO and Barlett's Test of the sample

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.910
Bartlett's Test of Sphericity	Approx. Chi-Square	2290.890
	Df	153
	Sig.	.000

Similar to part 2 of the questionnaire, PCA with Varimax rotation was run for part 3 on students' motivation to learn English. The item loadings were also suppressed to 0.4. Three factors were extracted, accounting for 32.829, 13.536 and 5.558 percent of the total variance respectively, resulting in a total of 51.923 percent of the total variance being explained (see Table 15, Appendix 4B).

This preliminary extraction indicated that there were items IMS3 and IDR3 with their loadings smaller than .40 in their respective factors (see Table 16, Appendix 4B). Therefore, these items were removed. The second procedure of factor analysis was conducted with the remaining 16 items, and the two extracted factors accounted for 56.810 of the total variance explained (see Table 17, Appendix 4B). The factor loadings of each items were examined again and item IMK1 was removed because its loading was smaller than .4 (see Table 18, Appendix 4B). The same procedure of factor analysis continued to be conducted with the remaining 15 items. The two extracted factors accounted for 37.696 and 15.641 percent of the total variance respectively, 53.338 of the total variance explained (see Table 4.12). The factor loadings of each items were examined and there were not any items that were removed at this stage because they all obtained a factor loading of greater than .40. The factor loadings are presented in Table 4.13.

An expert validation process was employed then and all items were kept because they had the meaning reflecting their similar construct. The Motivation to learn English measure had 7 and 8 items in factor one and two. Factor one consisted of 7 items which was associated with extrinsic motivation for learning purposes. It was named 'Extrinsic motivation'. Factor two included 8 items which were concerned with students' sense of purpose for their own interests and passions. Based on the literature, it was named 'Intrinsic motivation'.

Table 4.12: The total variance explained when 15 items were included

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.654	37.696	37.696	5.654	37.696	37.696
2	2.346	15.641	53.338	2.346	15.641	53.338
3	.814	5.426	58.764			
15	.209	1.394	100.000			

Extraction Method: Principal Component Analysis

Table 4.13: Factor analysis of 15 items on Motivation

Rotated Component Matrix ^a		
	Component	
	1	2
INR2	.858	
IDR1	.847	
EXR3	.751	
EXR2	.748	
INR1	.733	
IDR2	.623	
INR3	.601	
IMK2		.739
IMS1		.732
IMA3		.721
IMA1		.697
IMA2		.695
EXR1		.639
IMK3		.623
IMK2		.597

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.^a

a. Rotation converged in 3 iterations.

Inter-factor correlations and internal consistency reliability

According to self-determination theory, intrinsic motivation and extrinsic motivation are closely related and positively correlated with each other. Therefore, it was expected there would be positive and significant correlation between factors. As expected, the inter-factor correlation of the Motivation to learn English measure (see Table 4.14) clearly reflected this relationship and provided more evidence of validity for this measure in the present study.

Table 4.14: Inter-factor correlations for subscales of the Motivation measure

Variables	1	2
Intrinsic motivation	-	-
Extrinsic motivation	.416**	-

** . Correlation is significant at the 0.01 level (2-tailed).

As indicated in Table 4.14, intrinsic motivation was significantly and positively correlated with extrinsic motivation ($r = .416, p = .01$). Cronbach's alphas for 'Intrinsic motivation' and 'Extrinsic motivation' were generated to evaluate the internal consistency reliability of these subscales for the present's study sample population. Cronbach's alphas for 'Intrinsic motivation' and 'Extrinsic motivation' were at .849 and .869 respectively, indicating acceptable internal consistency for these two factors. To sum up, after the EFA the Motivation measure had only two factors with 15 items included compared to six factors with 18 items originally.

4.2.4 Summary of phase 1 results

Table 4.15: A summary of the result of phase 1

Parts	Subscales	Number of items
Language learning strategies	Memory	6
	Cognitive	9
	Compensation	5
	Metacognitive	8
	Affective	5
	Social	5
Attitudes towards learning English	Positive attitudes	5
	Negative attitudes	4
Motivation to learn English	Intrinsic motivation	8
	Extrinsic motivation	7

In short, the factor analysis procedure described in this section identified the questionnaire results regarding learning strategies, attitudes and motivation in the context of EFL learning in Vietnam. The internal consistency and exploratory factor analysis were carried out to ensure the reliability and validity of the newly created questionnaire. The new questionnaire included three parts which are briefly described in Table 4.15.

4.3 Results of phase 2: The experiment

The quantitative data were collected from a questionnaire that was developed from phase 1. Students in the experimental and control groups were asked to respond to the survey items before and after the experiment period in terms of pre-test and post-test, which was aimed at exploring if there were any changes/differences in their utilizing of language learning strategies, in their attitudes towards learning English, and their motivation to undertake their English studies. The results below are data collected from phase 2 and are presented in the following order:

- Personal profiles of respondents
- Reliability of the questionnaire instrument
- Results of the pre- and post-experiment questionnaires

The first part provides a description of participant demographics, revealing students' gender, majors and levels of computer proficiency. The reliability of the questionnaire is then mentioned to ensure the credentials for further analysis, which is followed by the main analysis geared towards answering three research sub-questions.

4.3.1 Personal profiles of respondents

There were 100 students who took part in the second phase including 50 students in the control group and 50 in the experimental group. All of the participants completed and submitted the questionnaire. Missing data were not found. The demographics of students participating in the experiment study were descriptively analyzed based on gender, major, and level of computer proficiency. The descriptive analysis was analyzed in three parts: (a) all survey respondents, (b) students in the experimental group, (c) students in the control group. A summary of the descriptive analysis of all variables is provided in Table 4.16.

Experimental group

As can be seen from Table 4.16, a large number of students in the experimental group were male, accounting for 54% ($n = 27$), whereas the figure for females was relatively

smaller at 46% (n = 23). Regarding the students' majors, it is clear that Computing ranked first with 32% (n = 16), followed by Accounting with 30% (n = 15). The proportions of students majoring in Finance and Business administration were 20% (n = 10) and 18% (n = 9) respectively. With respect to their reporting on computer proficiency, the number of students with perceived average computing skills was 60% (n = 30) while 22% (n = 11) and 10% (n = 5) of them indicated their computing levels to be 'good' and 'very good' respectively. By contrast, only 8% (n = 4) reported that their computer proficiency was bad.

Table 4.16: The demographics of students

Variables	Experimental group (n=50)		Control group (n=50)		Total (n=100)	
	Freq.	%	Freq.	%	Freq.	%
Gender						
Male	27	54	24	48	51	51
Female	23	46	26	52	49	49
Other	0	0	0	0	0	0
Major						
Finance	10	20	12	24	22	22
Accounting	15	30	10	20	25	25
Computing	16	32	10	20	26	26
Business administration	9	18	18	36	27	27
Computer proficiency						
Very bad	0	0	0	0	0	0
Bad	4	8	6	12	10	10
Ok	30	60	26	52	56	56
Good	11	22	10	20	21	21
Very good	5	10	8	16	13	13

Control group

Table 4.16 shows that the majority of students in the control group were female with 52% (n = 26), while 48% (n = 24) of them were male. The largest percentage of majors (36%, n = 18) was Business administration, whereas 24% (n = 12) was doing Finance. The same percentage of students whose majors were doing Accounting and Computing, which came in at 20% (n = 10) each. The proportion of students having an 'ok' level of computer proficiency was over half (52%, n = 26). Meanwhile, the statistics for 'good' and 'very good' were 20% (n = 10) and 16% (n = 8) respectively. The smallest percentage of students with bad computing skills (12%, n = 6) was in the control group.

4.3.2 Reliability of the questionnaire instrument

The questionnaire employed in this phase aimed to measure students' three main components of learner autonomy. Students in the control and experimental groups needed to indicate how they adopted strategies in their learning performance; how they thought about their learning of English to ascertain whether they had positive or negative attitudes; and the fundamental reasons motivating them to study English as a foreign language in the local context, both before and after the implementation of the experiment.

The questionnaire used in the pre- and post-test included three distinct sections: Language learning strategies with 6 subscales (Memory- 5 items, Cognitive-9 items, Compensation-5 items, Metacognitive-8 items, Affective-5 items, and Social-5 items), Attitudes towards learning English with 2 subscales (Positive attitudes-5 items, Negative attitudes-4 items), and Motivation to learn English with 2 subscales (Intrinsic motivation-8 items, Extrinsic motivation-7 items). The full details of the questionnaire are included in Appendix 3B. In order to examine if any of the items in each subscale should be removed to increase the reliability level of that subscale, an internal consistency test with Cronbach's alpha, was employed. The subscales of the questionnaire were renamed as shortened scales as follows:

Language learning strategies

MEM: Memory strategies

COG: Cognitive strategies

COM: Compensation strategies

MET: Metacognitive strategies

AFF: Affective strategies

SOC: Social strategies

Attitudes towards learning English

PAT: Positive attitudes

NAT: Negative attitudes

Motivation to learn English

INT: Intrinsic motivation

EXT: Extrinsic motivation

The reliability of each component of learner autonomy is shown in Table 4.17.

Table 4.17: Cronbach's Alpha of three components of learner autonomy

Components	Subscales	Cronbach's Alpha	
		Pre-test	Post-test
Language learning strategies	Memory	.769	.773
	Cognitive	.827	.776
	Compensation	.749	.814
	Metacognitive	.805	.787
	Affective	.723	.783
	Social	.720	.743
Attitudes towards learning English	Positive attitudes	.758	.768
	Negative attitudes	.784	.759
Motivation to learn English	Intrinsic motivation	.792	.790
	Extrinsic motivation	.847	.824

The information described to establish the reliability of the questionnaire instrument suggested that all factors in three components adopted from the factor analysis procedure in phase 1 were worth using for further investigations. After an examination of the internal consistency levels of 10 subscales across the two measurement scales (pre-test and post-test), the 38 items in Language learning strategies, the 9 items in Attitudes towards learning English, and the 15 items in Motivation to learn English were all retained to achieve the high level of reliability for the instrument.

4.3.3 Results of the pre- and post-experiment questionnaires

Three sub-questions investigated the changes in students' use of language learning strategies, attitudes towards learning English and motivation to learn English when the experiment ended. In order to analyze the data gathered through the pre- and post-experiment questionnaires, four paired samples t-tests were computed. Two paired samples t-test examined within group comparisons, and two of the t-tests comprised between groups comparisons. Regarding the negative item, its score would be reversed when conducting t-test of overall in the relevant scales. Data analysis and interpretation of this section were done based on Tsai and Talley's (2014) ideas. The following part describes four paired sample t-tests of three components of learner autonomy.

Language learning strategies

Language learning strategies includes memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies, and social strategies. In order to reveal the effect of CALL on students' use of learning strategies in the experimental group, differences between strategy use of the pre- and post-tests were investigated. A paired samples t-test was employed to determine whether there was a significant difference between the pre- and post-test strategy use in the experimental and control groups.

Table 4.18: Independent t-test of the pre- and post-tests of the two groups

	Experimental group (n=50)		Control group (n=50)		t-test for equality of means	
	Mean	S.D	Mean	S.D	<i>t</i>	Sig. (2-tailed)
Pre-memory strategies	3.5833	.47171	3.4367	.40109	1.699	.096
Post-memory Strategies	3.6400	.45595	3.4567	.70454	1.650	.105
Pre-cognitive strategies	3.2556	.32003	3.2911	.37822	-.599	.552
Post-cognitive strategies	4.0489	.62780	3.4444	.45730	6.256	.000***
Pre-compensation strategies	3.2320	.42448	3.3440	.35695	-1.362	.179
Post-compensation strategies	3.1480	.54781	3.1920	.55249	-.372	.712
Pre-metacognitive strategies	3.2300	.20572	3.2250	.29451	.118	.907
Post-metacognitive strategies	4.2500	.47649	3.3075	.24512	10.745	.000
Pre-affective strategies	3.3880	.46319	3.2720	.43474	1.284	.205
Post-affective strategies	3.4640	.49888	3.3800	.53795	.943	.350
Pre-social strategies	3.2560	.34295	3.1880	.51494	.834	.408
Post-social strategies	3.3890	.68023	3.1840	.36330	1.867	.068
Pre-questionnaire overall	3.3137	.12791	3.2911	.20511	.809	.423
Post-questionnaire overall	3.7442	.30038	3.3416	.23086	7.301	.000***

Note: ** $p < 0.01$, *** $p < 0.001$

As can be seen from Table 4.18, there was no difference of strategy use between the groups in the pre-test ($t = .809, p = .423$). In the post-questionnaire result, significant difference was found between the groups ($t = 7.301, p < 0.001$), especially in the categories of metacognitive strategies ($t = 10.745, p < 0.001$) and cognitive strategies ($t = 6.256, p < 0.001$).

Table 4.19 shows the mean and standard deviations of the experimental group for each learning strategy. To examine the differences of strategy use both before and after the experiment, a paired sample t-test was conducted. The results indicate that there was significant difference in overall strategy category used by students in the experimental group ($t = -8.691, p < 0.001$). Among six types of strategies, two of them had the significant difference (cognitive strategies, $t = -6.977, p < 0.001$; metacognitive strategies, $t = -15.236, p < 0.001$). Four strategies revealed no difference between the stages of the pre-test and post-test (memory strategies, $t = -.533, p = .596$; compensation strategies, $t = .866, p = .391$; affective strategies, $t = -.700, p = .487$; social strategies, $t = -1.206, p = .233$).

Table 4.19: Paired-samples t-test on the pre- and post-tests of the experimental group

	Experimental group (n=50)					
	Pre-questionnaire		Post-questionnaire		Paired sample <i>t</i> -test	
	Mean	S.D	Mean	S.D	<i>t</i>	Sig. (2-tailed)
Memory strategies	3.5833	.47171	3.6400	.45595	-.533	.596
Cognitive strategies	3.2556	.32003	4.0489	.62780	-6.977	.000***
Compensation strategies	3.2320	.42448	3.1480	.54781	.866	.391
Metacognitive strategies	3.2300	.20572	4.2500	.47649	-15.236	.000
Affective strategies	3.3880	.46319	3.4640	.49888	-.700	.487
Social strategies	3.2560	.34295	3.3890	.68023	-1.206	.233
Overall strategies	3.3137	.12791	3.7442	.30038	-8.691	.000***

Note: ** $p < 0.01$, *** $p < 0.001$

In order to examine the differences of strategy use of the control group both before and after the experiment, a paired sample t-test was conducted (Table 4.20). The results reveal that there was not a statistically significant difference between the overall pre-test and post-test strategy use of the students in the control group ($t = -1.106, p = .274$). All six strategies showed no difference between the pre-test and post-test (memory strategies, $t = -.204, p = .839$; cognitive strategies, $t = -1.759, p = .085$; compensation strategies, $t = 1.467, p = .149$; affective strategies, $t = -1.444, p = .155$; social strategies, $t = .038, p = .970$).

Table 4.20: Paired-samples t-test on the pre- and post-tests of the control group

	Control group (n=50)					
	Pre-questionnaire		Post-questionnaire		Paired sample <i>t</i> -test	
	Mean	S.D	Mean	S.D	<i>t</i>	Sig. (2-tailed)
Memory strategies	3.4367	.40109	3.4567	.70454	-.204	.839
Cognitive strategies	3.2911	.37822	3.4444	.45730	-1.759	.085
Compensation strategies	3.3440	.35695	3.1920	.55249	1.467	.149
Metacognitive strategies	3.2250	.29451	3.3075	.24512	-1.480	.145
Affective strategies	3.2720	.43474	3.3800	.53795	-1.444	.155
Social strategies	3.1880	.51494	3.1840	.36330	.038	.970
Overall strategies	3.2911	.20511	3.3416	.23086	-1.106	.274

In summary, the result of pre-experiment showed that strategy use for both the experimental group and control group was almost the same. The total mean ranged from 3.1480 to 4.2500 respectively, which is considered as the medium to high range according to Oxford's Profile of Results (High: mean from 3.5 to 5.0; Medium: mean from 2.5 to 3.4; Low: mean from 1.0 to 2.4). The results of the paired sample t-test analysis for the change in strategy use within the groups indicated that the students in the experimental group tended to use two out of the six categories of strategies more frequently after the experiment, which were metacognitive and cognitive strategies. In sharp contrast, the t-test result of the control group did not show clear changes.

Attitudes towards learning English

Attitudes towards learning English includes positive attitudes and negative attitudes. Similar to language learning strategy, in order to reveal the effect of CALL on students' attitudes toward leaning English in the experimental group, differences between attitudes levels of the pre- and post-tests were examined. A paired samples t-test was employed to conclude whether there was a significant difference between the pre- and post-test attitudes level in the experimental and control groups. According to the the results shown in Table 4.21, there was no difference of attitudes level between the groups in the pre-test ($t = -.590, p = .558$). In the post-questionnaire, significant difference was seen between the experimental and control groups ($t = 5.002, p < 0.001$), positive attitudes ($t = 2.868, p < 0.01$) and negative attitudes ($t = -8.915, p < 0.001$).

Table 4.21: Independent t-test of the pre- and post-tests of the two groups

	Experimental group (n=50)		Control group (n=50)		t-test for equality of means	
	Mean	S.D	Mean	S.D	<i>t</i>	Sig. (2-tailed)
Pre-positive attitudes	3.2960	.44491	3.4680	.47913	-1.846	.071
Post-positive attitudes	3.9240	.89979	3.5400	.66425	2.868	.006
Pre-negative attitudes	1.6250	.42633	1.7350	.71858	-.935	.354
Post-negative attitudes	1.3500	.37796	1.8650	.33961	-8.915	.000***
Pre-questionnaire overall	3.7756	.34154	3.8222	.47087	-.590	.558
Post-questionnaire overall	4.2467	.58592	3.8044	.39559	5.002	.000***

Note: ** $p < 0.01$, *** $p < 0.001$

The mean and standard deviations of the experimental group for each learning attitudes are shown in Table 4.22. To examine the differences of attitudes both before and after the experiment, a paired sample t-test was conducted. It is clear that there was significant difference in overall attitudes category of students in the experimental group ($t = -5.074, p$

< 0.001), two types of learning attitudes changed significantly, the category of positive attitudes ($t = -4.682, p < 0.001$), and negative attitudes ($t = 3.348, p < 0.01$).

Table 4.22: Paired-samples t-test on the pre- and post-tests of the experimental group

	Experimental group (n=50)					
	Pre-questionnaire		Post-questionnaire		Paired sample <i>t</i> -test	
	Mean	S.D	Mean	S.D	<i>t</i>	Sig. (2-tailed)
Positive attitudes	3.2960	.44491	3.9240	.89979	-4.682	.000***
Negative attitudes	1.6250	.42633	1.3500	.37796	3.348	.002**
Overall attitudes	3.7756	.34154	4.2467	.58592	-5.074	.000***

Note: ** $p < 0.01$, *** $p < 0.001$

Table 4.23: Paired-samples t-test on the pre- and post-tests of the control group

	Control group (n=50)					
	Pre-questionnaire		Post-questionnaire		Paired sample <i>t</i> -test	
	Mean	S.D	Mean	S.D	<i>t</i>	Sig. (2-tailed)
Positive attitudes	3.4680	.47913	3.5400	.66425	-.591	.557
Negative attitudes	1.7350	.71858	1.8650	.33961	-1.189	.240
Overall attitudes	3.8222	.47087	3.8044	.39559	.199	.843

Similar to the experimental group, a paired sample t-test was conducted to examine the differences of learning attitudes of the control group both before and after the experiment was done. The results from Table 4.23 reveal that there was not a statistically significant difference between the overall pretest and posttest attitudes of the students in the control group ($t = .199, p = .843$). Both positive attitudes and negative attitudes of students in the control group show no difference between the pre-test and post-test (positive attitudes, $t = -.591, p = .557$; negative attitudes, $t = -1.189, p = .240$).

In summary, the students in the experimental group did better in the post-test than in the pre-test, in regards to attitudes towards learning English. This is to say that the attitudes of

students towards learning English as a foreign language under CALL integration were better at the end of teaching than at the beginning. In effect, students in the experimental groups increased their positive attitudes and decreased their negative attitudes. By contrast, students in the control group did not show any changes in their attitudes when the experiment ended.

Motivation to learn English

Motivation to learn English includes intrinsic motivation and extrinsic motivation. Similar to language learning strategy and attitudes measures, differences between motivation to learn English of the pre- and post-tests were investigated in order to examine the effect of CALL on students' motivation in the experimental group and a paired samples t-test was employed to determine if there was a significant difference between the pre- and post-test motivation in the experimental and control groups.

Table 4.24: Independent t-test of the pre- and post-tests of the two groups

	Experimental group (n=50)		Control group (n=50)		t-test for equality of means	
	Mean	S.D	Mean	S.D	<i>t</i>	Sig. (2-tailed)
Pre-intrinsic motivation	3.4350	.42426	3.4450	.39055	-.128	.899
Post-intrinsic motivation	3.9825	.78572	3.4475	.45743	5.033	.000***
Pre-extrinsic motivation	3.4171	.22512	3.3829	.44379	.572	.570
Post-extrinsic motivation	3.4571	.25490	3.4771	.54883	-.224	.823
Pre-questionnaire overall	3.4267	.22936	3.4160	.27687	.203	.840
Post-questionnaire overall	3.7373	.48830	3.4613	.37948	3.200	.002**

Note: ** $p < 0.01$, *** $p < 0.001$

Table 4.24 indicates that no significant difference of motivation was seen between the groups in the pre-test ($t = .203$, $p = .840$). However, in the post-questionnaire stage, there was significant difference between the groups ($t = 3.200$, $p < 0.01$), compared to extrinsic

motivation ($t = -.224, p = .823$), which did not change considerably, intrinsic motivation changed significantly ($t = 5.033, p < 0.001$).

Table 4.25: Paired-samples t-test on the pre- and post-tests of the experimental group

	Experimental group (n=50)					
	Pre-questionnaire		Post-questionnaire		Paired sample <i>t</i> -test	
	Mean	S.D	Mean	S.D	<i>t</i>	Sig. (2-tailed)
Intrinsic motivation	3.4350	.42426	3.9825	.78572	-4.715	.000***
Extrinsic motivation	3.4171	.22512	3.4571	.25490	-.898	.373
Overall motivation	3.4267	.22936	3.7373	.48830	-4.173	.000***

Note: ** $p < 0.01$, *** $p < 0.001$

Table 4.25 reveals the mean and standard deviations of the experimental group for each kind of motivation, and a paired sample t-test was conducted to examine the differences of motivation students in the experimental group had both before and after the experiment. According to the results, there was significant difference in overall motivation category ($t = -4.173, p < 0.001$), the major change was found in intrinsic motivation ($t = -4.715, p < 0.001$), while extrinsic motivation was unchanged ($t = -.898, p = .373$).

Table 4.26: Paired-samples t-test on the pre- and post-tests of the control group

	Control group (n=50)					
	Pre-questionnaire		Post-questionnaire		Paired sample <i>t</i> -test	
	Mean	S.D	Mean	S.D	<i>t</i>	Sig. (2-tailed)
Intrinsic motivation	3.4450	.39055	3.4475	.45743	-.032	.975
Extrinsic motivation	3.3829	.44379	3.4771	.54883	-1.183	.243
Overall motivation	3.4160	.27687	3.4613	.37948	-.684	.497

Similar to the experimental group, a paired sample t-test was conducted to examine the differences of motivation of the control group both before and after the experiment. Table 4.26 indicates that there was not a statistically significant difference between the overall

pre-test and post-test motivation of the students in the control group ($t = -.684, p = .497$). No difference was found between the pre-test and post-test of intrinsic and extrinsic motivation (intrinsic motivation, $t = -.032, p = .975$; extrinsic motivation, $t = -1.183, p = .243$) stages.

In summary, students in the control and experiment groups appeared to have the same motivation to learn English before the experiment. When the experiment ended, students in the experiment group became more motivated to undertake their studies in a CALL learning environment; especially they had more intrinsic motivation. By contrast, students in the control group did not change their motivation when the experiment was done.

4.3.4 Summary of phase 2 results

There was no statistically significant difference in pre-test of language learning strategies, attitudes learning English and motivation to learn English between the experimental and control groups. After the experiment was done, students in the experimental group employed learning strategies more frequently, major change was found in metacognitive and cognitive strategies. Students in the experimental group also changed their attitudes positively and they had more motivation, especially intrinsic motivation to learn English. On the contrary, no significant change or difference was seen in the control group.

The next section presents the results of the interview analysis (phase 3).

4.4 Results of phase 3: Interviews

After phase 2, fifteen students and two teachers from the experimental group were invited to take part in the interviews, using a structured format. This section reports on the results from the interviews which aimed to explore the factors that influenced students' use of language learning strategies, attitudes, and motivation, which was subsequently combined with data from questionnaire to add depth to the findings.

The transcribed results of the audio recorded interviews were coded to protect the anonymity of the interviewees, with each being assigned a code (e.g., "Student 1," "Student 2," etc.). As described in chapter 3, the analysis of the interview transcripts was

an iterative process and included steps to ensure the validity and reliability of the findings that emerged from the analysis as well as to synthesize the interview findings into a number of major themes and corresponding sub-themes. The themes emerging from the interviews with students were grouped into three main categories. Figures 4.1 summarizes the themes pertaining to each group of interviewees.

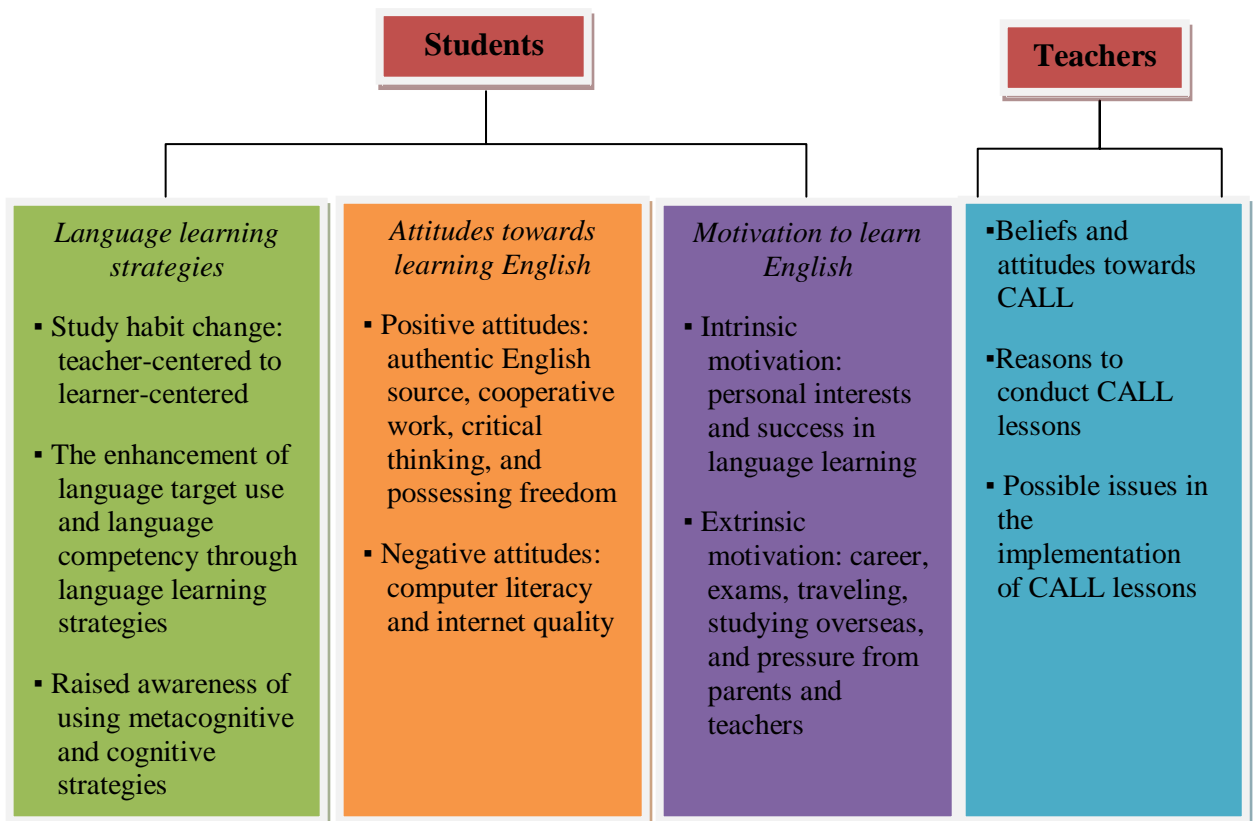


Figure 4.1: Themes identified from each group of interviewees

4.4.1 Results of interviews with students

From the interviews with fifteen students from the experimental group, few facts related to studying with CALL were revealed. In this subsection the facts are discussed in order of categories, including language learning strategies, attitudes toward learning English and motivation to learn English, as listed in Figure 4.1.

4.4.1.1 Language learning strategies

- Study habit change: teacher-centered to learner-centered
- The enhancement of language target use and language competency through language learning strategies
- Raised awareness of using metacognitive and cognitive strategies

Figure 4.2: Language learning strategies related-themes

Three themes are listed in Figure 4.2 as responses to interview questions with respect to language learning strategies.

Study habit change: teacher-centered to learner-centered

When asked about teachers' roles in class, thirteen out of fifteen students from the interviews commented that they did not depend as much on the teachers as they used to do because they witnessed the change from a teacher-centered approach to a learner-centered one. For example, Student 2 explained that his learning habits had relied mostly on the teacher before joining the CALL class. He could not do anything without the teacher's detailed explanation and he would not even do the

tasks if the teacher was not in the classroom. He stated, "In class my teacher always asked me and classmates to focus on her instruction to do the exercises and she did not allow us to the next exercise until she told us to do so." He then said that when learning English in the CALL class, he was able to control his learning activities and the tasks seemed much easier due to the design of the explanation parts which were always handy and useful. He illustrated his idea:

I do not need to wait for the teacher's instructions for all tasks. Actually, with learning strategies, I think I can apply in each task. I am more active and independent in my own learning, which I am quite happy about. I expect my teacher to be a guide. (Student 2)

With the same change in study habits, Student 12 took one example to clarify his case. In the past, he was afraid to ask the teacher any questions because he thought the teacher was

powerful and he just listened to what the teacher asked him to do without showing any concern. He said, “No one in my class raised any questions although sometimes we actually did not understand. Indeed I did not know the reason why but that was the study habit we had before.” He used the word ‘facilitator’ and ‘moderator’ to indicate the role of the teacher in the CALL class. He said:

In the CALL class I see my teacher as facilitator and moderator. She helps us when we have problems with learning activities. More importantly, if we do not understand why our answers are wrong, my teacher will be eager to explain more. I totally feel relaxed and more interested in my language learning. (Student 12)

It seemed that in the CALL class, there was an inclination towards student-centered learning and students had more responsibility in their learning habit. For example, Students 14 and 9 expressed that they were put in charge of the presentation, which meant that they had more chance to get involved in learning activities. They took an active participatory role in collecting and designing the work and they needed to study on their own most of the time. “We self investigate the ideas with the help of computer and internet after the teacher gave us general instruction,” Student 9 added. In addition, during the discussion in the forum online, they were also given the opportunity to ask any questions regarding their concerns on how to improve their work. Consequently, students grasped ideas and concepts more independently of the teacher because they considered the teacher as a guide. The students reported:

I can control my own study activities, especially when we work in groups. We have the responsibility for our outcome. I attempt to complete tasks in effective ways, which is completely different from what I did before. I mean that I do not need my teacher to observe and check our progress regularly, but I do need teacher to give support. (Student 14)

During my new experience in CALL class, my teacher is only a guide. She does not urge us to do the tasks. Sometimes she gives the valuable comments. You know what, I think I change my opinions on teacher’ roles and students’ roles which results in the change in my study habit. (Student 9)

To conclude, students showed a change in their perceptions regarding their roles and teachers’ roles in the class. Students became the center in a CALL learning environment and more responsible for their own learning while teachers played the role of facilitator and advisor. They were willing to adapt new roles to better facilitate their language

teaching and learning as they thought that these changes would result in significant increases in autonomous learning behaviors.

The enhancement of language target use and language competency through language learning strategies

Concerning the benefits of applying learning strategies in the class, most of the students confirmed that they were able to enhance language target use and competency because they could use English more than they had done before. Student 10, for example, said he had more chance to write in English. “I think this is the first time I write everything in English that much,” he added. Similarly, Student 12 stated that writing activities in the discussion forum was a new experience he had never had before. He explained that he could use evaluation strategies to assess his own postings and those of others. He said:

Well, as you know, I can recognize the usefulness of learning strategies and use them in organizing the ideas logically to give valuable feedback. In addition, I am able to brainstorm ideas for my essays easily. (Student 12)

It is clear that this student was able to use the strategies effectively in his practicing of English writing skills. Meanwhile, the other three students showed their interest in English speaking activities. One of them tried to speak English in every speaking task although he frequently made grammatical mistakes. The other always refused to speak English; however, he became more confident in oral English even if he just spoke in short sentences. With learning strategies, another student could communicate more effectively and easily with her classmates. The following is representative of their responses:

I often make mistakes whenever I speak English. Nevertheless, when I study English with the support of computer, I plan to focus on the content I want to convey, not the correctness of the grammar. Then I can monitor my speaking process and gradually I feel a bit more confident and I also know how to control my nervous feeling. Moreover, my classmates try to speak English so I need to follow this trend. (Student 7)

It is somehow easy for me to talk and discuss with my partner about the topic in class. In this case I need to pay attention to my partner speak and I can learn some errors in our conversations and discussions and finally I have to use as much English as possible. (Student 15)

These two students meet the pedagogical principle of appropriate use of the target language to improve their language skills.

In addition, thirteen out of fifteen students confirmed that CALL helped them use appropriate learning strategies to boost their language proficiency. According to Student 11, he could recognize a considerable improvement in his pronunciation. Some days after the CALL lesson began, he got used to the function of the pronunciation program with the recorder. He made time to use it regularly. As a result, he did not have any big difficulties related to pronunciation. Another student, Student 3 was quite satisfied with her writing. She said, “due to grammar based CALL explanation, I am able to monitor and assess my grammar use and in return, I am capable of writing assignments with good quality.” On this point, mastering learning strategies clearly benefited her writing. By contrast, two students said they did not see any significant change in their language proficiency. They stated:

I just see a small change in speaking skills because I am still shy to speak English and I am kind of reluctant when the teacher asks me to talk or discuss with my classmates. I wish I did not have those learning styles because this is the first time I use computer to learn English most of the time. (Student 13)

I am really bad at listening skills and I think the main reason is that I lack vocabulary. Sometimes I can get the general ideas of the listening tasks but sometimes I cannot. Personally, I think the course should last a bit longer so that I can have more time to pick up more new words. (Student 6)

Student 6 continued to say that he disliked learning with computer and he thought he could not convey his ideas into writing due to his lack of vocabulary and computer literacy. He specified, “I am not good at working with the computer and I am a bit lazy to type with the key board, so I do not keep up with the class”.

It seemed that the language learning strategies did not have a big impact on these two students and they did not use learning strategies in their learning appropriately. Their language proficiency did not change significantly although they made an attempt in their study. However, they could see the improvement in their language proficiency when they spent more time getting used to applying the strategies. For example, Student 4 even enthusiastically said that she was able to give more correct answers to the reading questions. She argued that because CALL had been in place, she was a bit more strategy-

proficient, supporting herself to integrate specific learning strategies to recall the information and ignoring distraction while reading.

Raised awareness of using metacognitive and cognitive strategies

In line with the interview question regarding which learning strategies were used the most, fourteen out of fifteen students in the interviews said that they used cognitive strategies, with a major focus on metacognitive strategies most of the time. The metacognitive and cognitive strategies emerging in this interview question involved the following overarching categories: planning, monitoring, problem-solving, evaluating, analyzing and practicing. The data was analysed based on these elements of metacognitive and cognitive process.

In giving responses to questions about specific planning strategies, some of the students explained that the most important factor was the requirement of the class attendance. They thought they should attend the class to learn their lessons effectively. In addition to preparing the lessons before coming to class, students reviewed the key points of every lesson after class. Student 5 said, “I am able to understand the tasks and activities after having a look at the lesson that is scheduled to be learned the next day. Besides, reviewing them helps me get more insight into how to practice to improve the language skills.” It is clear that Student 5 had a planning strategy in the form of pre-reading and spending time practicing.

Another student, Student 3, mentioned that listening skills were not her strength, so she focused on listening activities in the class. She decided that she had to show her interest in extra listening tasks integrated in the course, which she had not had a chance to practice before. However, she realized that she could not get the meaning of long conversations and she intended to pay attention to these types of listening tasks, which shows that this student had planning strategy and guessing the meaning in the sense of that she directed attention selectively. Student 3 showed recognition of that planning strategy and meaning guessing ability in her following statement:

I am afraid of listening to conversations that last over 2 minutes. It seems to me that I cannot catch up with the idea of what the speakers are saying and I cannot follow

the speaking speed then. I try to concentrate on these conversations as much as possible and I try to figure out the meaning. (Student 3)

Eight students showed their use of a monitoring strategy. For instance, Student 10 reported that he was able to monitor his pronunciation performance, encouraging him to carry on with his studies. He added, "I am not good at pronouncing words, so I feel embarrassed whenever I am asked to say something. I try my best to practice every single word in each lesson due to the convenience of the course design. My pronunciation has improved better." He further confirmed, "I am satisfied with the progress of my English learning." This student expressed his ability of checking progress and self-examination with reference to monitoring strategies.

The evidence of utilizing monitoring with analyzing strategies in terms of detecting problem and checking effectiveness of the strategy used was also the case for Student 7. She said:

I have difficulties in understanding grammar structures. If I do not know why certain grammatical points are used in particular context, I will look into the suggested explanation to make sure I truly understand and use them accurately. (Student 7)

Similarly, Student 8 said that she was encouraged to compare her learning performance at different stages to figure out if her language skills had improved and she communicated in the target language confidently. She explained:

In CALL class, monitoring is regularly used. This leads to the fact that I can recognize their improvement by knowing how to check progress in my learning. Consequently, I do not have the feeling of boredom and discouragement. (Student 8)

Thirteen out of fifteen students in the interviews mentioned that a problem-solving strategy and analyzing ability were employed because of their usefulness in supporting students to overcome obstacles to their learning. For instance, Student 14 stated that the task which was allocated to her was beyond her ability, which made her stressed at the beginning. However, the other members clarified the task appropriately and helped her analyse and understand what she needed to do. She sought the assistance from her peers, which is evidence of trying out alternatives as part of a strategy of problem solving and analyzing. Student 14 reported:

I have never worked in groups to prepare for the presentation slides that will be uploaded on the forum before and I am just used to the detailed guidelines from the teachers. I do not feel relaxed at all but with the support from my teammates, I definitely understand the task and do it cooperatively to reach the group target.
(Student 14)

Meanwhile, Student 5 told that trying alternatives, looking for solutions and asking for help after analyzing were used deal with problems in his class. He said that he had difficulties regarding his assignments. Instead of asking for his teacher for clarification and assistance in person, he posted his concerns in the discussion forum so that he could receive timely responses timely from his classmates. Student 5 stressed:

I am traditionally timid in asking questions whenever some learning difficulties show up. In this case, I take advantage of the discussion forum as a mean to address my concerns. As a result, my worries could be tackled in an effective way.
(Student 5)

With respect to the ability to evaluate their progress and learning practice during the time they were taught with CALL, twelve of the fifteen students in the interviews shared the agreement that CALL based tasks could help them easily practice and assess their studies. For instance, Student 4 took the example of a grammar exercise and said that she preferred grammar session because it was not boring as it used to be and more importantly, she could practice exercises and check the answers on her own with the help of detailed explanation. She further argued, “Learning grammar this way not only helps me assess my answers but it also makes me feel independent in my study. At the end of the course, my grammar is much better.”

In addition to grammar, students also had a chance to practice and evaluate the other language skills. Some of the students showed their interest in pronunciation activities with prompt feedback. They could assess their tone and voice and compare it with a native speaker’s voice. One of students said:

I do not need to worry about the pronunciation anymore because with the recording software I can practice my pronunciation by recording my voice and listen to it again to assess my pronunciation, which is the best thing I like about the course because I know my pronunciation has been improved. (Student 1)

Regarding reading tasks, Student 12 said that the TOEIC reading tasks always made him stressed and worried as he did not know how to locate the key words in the questions in

relation to the ideas in the text. He commented, “It always takes me a lot of time to answer the questions, but the CALL - designed task offers me with a new reading strategy and as a result, I can recognize that my learning progress has been getting better and better.” This student was more likely to pay attention to progress evaluation.

In summary, the interview data provided the evidence that students were able to use cognitive and metacognitive strategies properly, in particular the ability to analyse, practice, plan, monitor, solve problems, and evaluate their study performance. This also indicates that CALL had some influences on students’ choices of learning strategies.

To conclude, students were found to be committed users of learning strategies, which they got used to in their online learning. They used cognitive skills for practicing their language, and metacognitive skills for their communication in terms of providing feedback and providing ideas for online discussions. They used more of the target language in their learning activities. Finally, they mostly adapted their metacognition in the process of improving language skills to become proficient in language use, which is a requirement of the learning curriculum.

4.4.1.2 Attitudes towards learning English

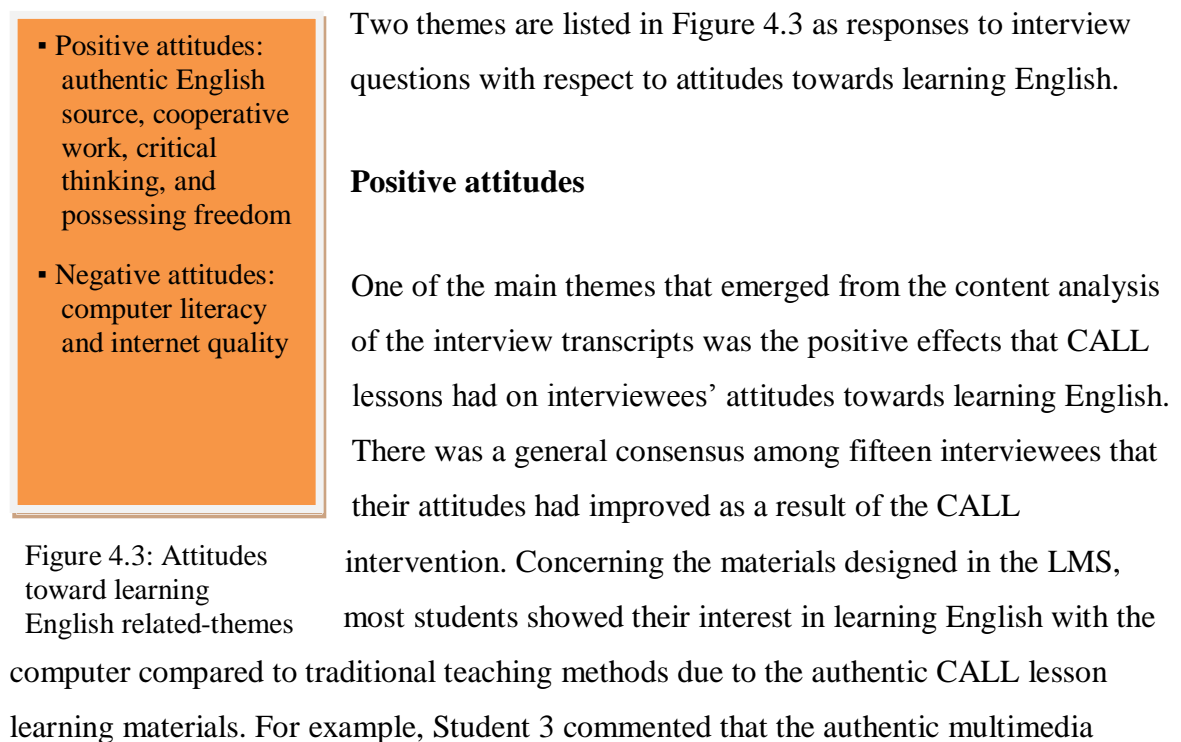


Figure 4.3: Attitudes toward learning English related-themes

resources that were incorporated into the CALL lessons made the learning experience more entertaining and engaging. She further explained, “I am fond of the clips used in each lesson. By watching these clips I could get to know more about the real spoken English used in daily life.” Similarly, Student 2 expressed his strong interest in listening to BBC news by saying that, “Listening to BBC news as the entertaining activities in class helps me catch up with events happening around the world.” He found it useful to learn some language expressions and idioms through the news, which helped him memorize and use them more easily. Seven students appeared to be keen on reading newspaper articles as part of their language learning. According to Students 10 and 11, reading those articles and funny stories in English was a key factor in changing their attitudes about learning English. The following are representatives of their responses:

At first, I did not have the habit of reading articles and I found them really boring. I just remember that whenever I read some first pages of the articles, I fell asleep right away. Thanks to the reading links integrated in each CALL activity, I not only concentrate on the meanings of the reading but also the new words that I think I should learn to use in my speaking. I love reading most of the articles online, especially the ones involved in tips of how to learn English effectively, which helps me know some strategies to learn English independently. (Student 10)

Funny stories maintain my interest in reading activities. Sometimes doing a lot of TOEIC reading tasks makes me bored and tired. However, funny stories available on the internet can refresh my mind and help me focus more on the lessons. I am eager when the teacher allows us to read these kinds of stories because they both let me let my hair down a bit and they help me pick up some more new words that I can use in my writing assignments later. (Student 11)

The data revealed that students were active and engaged in their learning activities. They were aware of the benefits of these activities for improving their language skills. Students became interested in taking control over their learning and this is one of the criteria to foster language learner autonomy.

In response to the question about what the students think of the content of CALL-based lessons, there was agreement that the cooperative work in CALL lessons was the significant factors contributing to changing students’ attitudes. For example, according to Student 4, the use of forum for discussion to exchange ideas, opinions, learn idiomatic phrases and real-world topics in the speaking and listening activities were especially salient in promoting her interest in learning English. She also confirmed the usefulness of

working together on the business topics for speaking as being practical. She had a good chance to discuss the topics related to business environments as she could get used to the culture of the workplace by watching relevant video clips and she would not feel shy to communicate with co-workers at work in the future. Similarly, Student 5 mentioned that opportunity to work with classmates in the course was the overarching reason for his improved attitudes towards English learning activities. He said:

My English level was low so I hardly caught up with my classmates in my previous class. I tended to give up the tasks that needed to be done because these tasks seemed so difficult to me. However, the CALL designed tasks allow me to work with my peer and the tasks seem to be suitable for my level. I can feel a bit relaxed to do these tasks. (Student 5)

In the above excerpt, Student 5 appeared to continue to learn English as an autonomous learner. CALL designed tasks helped him maintain his preference for learning otherwise he would have made the decision to stop attending English classes. Regarding the specifically designed lessons, the other six students stated that in the previous class in which they were taught with a textbook only, they were passive in learning writing, speaking, reading and listening and they just sat quietly doing nothing even though teachers asked them to take part in learning activities. The tasks were complicated and they did not understand how to deal with them. However, each lesson in the CALL class required their cooperation and students found it easy to engage in and to receive the feedback. They took writing and speaking activities as examples to illustrate the change in their attitudes. Here are the excerpts from the interviews with one of them:

Speaking is one of the skills I was bad at. I used to feel scared when joining speaking activities. You know what, I just kept silent because speaking topics were beyond me. Fortunately, speaking seems a bit easy for me because we need to discuss together first. I am thus eager to speak out what I think in English in speaking activities. (Student 8)

The above responses indicated that the students wanted learning activities that provided them with cooperation opportunities to practice language skills effectively. The students identified the importance of English use and they appeared to possess a positive attitudes towards acquiring language, which is an important element identified in the development of learner autonomy for this study.

One beneficial aspect of studying in CALL classes mentioned by ten out of fifteen students in the interviews is that they were able to develop their critical thinking. They confirmed that this merit changed their attitudes. For example, Student 9 admitted that the CALL design was a convenient way for him to learn and evaluate his target language. He told that if he chose the wrong answers to the task question, he would probably do it again to make sure he was able to learn from those mistakes. According to Student 12, he was not good at English, he needed to try his best to learn from others. CALL lessons encouraged him to observe his friends' work in order to keep up with the classmates. With respect to the influence of CALL on students' critical thinking, Student 15 recognized that he could analyze and evaluate his learning process and get better at the exam later on. He said:

Now I like learning English more than I did in the past. The reason is that I am able to recognize my progress clearly, because I can analyze my problems and apply appropriate learning strategies to solve these problems, which is aimed at helping me acquire knowledge needed for the exam. (Student 15)

Another benefit of the CALL design used in this study was that students had more freedom from teachers without being controlled. Due to this benefit, they could communicate and interact with classmates and teachers easily as they had more freedom in class to make the decision on their own, resulting in the fact that relationship between the teacher and students was closer compared to a traditional class where the teacher was considered as the powerful person and everyone needed to listen without raising any concerns or questions. There was a general agreement among the interviewees on this point. Student 7, for example, reported that when she had something to ask, she felt free to join the forum directly and from there she got the response immediately. She said that it was very "convenient" to learn English in his class. Student 14 indicated, "When I do not understand some points in the lessons, I do not feel scared to ask for explanation from the teacher. Some of my classmates even can help me with the correct and persuasive answers. Attending English class is what I am looking for everyday." It seems that Students 7 and 14 were interested in interaction opportunities with teachers and classmates due to having more freedom. They also expressed that they still needed teachers to be in class all the time to correct mistakes and offer guidance when necessary.

Negative attitudes

Almost all the students had positive attitudes towards learning English due to the benefits that CALL brought to make them become autonomous learners. However, it should be noted that there was some evidence of a negative effect on some experimental group members' attitudes towards learning English as well. Student 6 said that his computer proficiency prevented him from using a computer in class as that was the first time he had spent time learning just with CALL in 12 weeks continuously. This student expressed, "I cannot imagine that it took me a lot of time to type in the discussion forum or even seek for relevant information on the search engine." Similarly, Student 13 was not able to interact well with his teacher and classmates because he was not confident in using a computer. As a result, he had to stop interactive activities sometimes. In brief, it is clear that computer proficiency impacted on students' willingness to study English and it could be considered a factor that limited students' learner autonomy.

Internet connection quality made students unhappy during the time they were taught with CALL. Some students complained that the internet connection was sometimes too poor, which effected learning and teaching negatively. They justified their complaints as follows:

I just remember one time when the teacher asked us to use the internet to do the task. I was so eager to start doing it immediately. However, the internet connection was so poor that we could barely do anything. (Student 1)

I feel annoyed with the internet connection quality at school. Sometimes the whole class needed to stop for a while as we could not access the Internet. Yet, it will not be a big deal if the school invests more money in improving the Internet quality or even can choose another internet provider for more reliable service. (Student 9)

It is reasonable to posit, though, that this negative attitudinal factor will diminish over time as the college authorities carry out some necessary arrangements to improve the above-mentioned problem.

To conclude, it seemed that students' learning attitudes towards learning English language through CALL lessons changed positively. A more positive attitudes made students more involved and engaged in active English learning independent of the teacher, compared with traditional teaching methods. In addition, students who held positive attitudes were

more responsible for their learning and changed their learning behaviours and thus became more autonomous learners. The following section presents the findings regarding motivation to gain better understanding of its effect on learner autonomy development.

4.4.1.3 Motivation to learn English

- Intrinsic motivation: personal interests and success in language learning
- Extrinsic motivation: career, exams, traveling, studying overseas, and pressure from parents and teachers

Figure 4.4: Motivation to learn English related-themes

Figure 4.4 summarizes two themes revealed as responses to interview questions with respect to motivation to learn English.

Intrinsic motivation

A major theme emerging from the interviews with the experimental group members was the motivational aspects of CALL learning. Learning English with computers made students feel more motivated to study English. When asked questions concerning the reasons why students made the decision to study English, most students said that they studied English because of their interest and success in language learning. For example,

Students 11 and 8 stated that the activities in CALL class were interesting compared to those in their previous classes where they had been taught with traditional teaching methods. As a result, they felt keen to learn English and made a decision to learn some sentences and structures in English on a daily basis to improve their speaking. In this case, this source of intrinsic motivation was triggered by internal attributes that drove students to become more autonomous in their learning. Student 11 said:

The learning activities with CALL are interesting. Each activity is designed in a unique way and I do not get bored. That is the reason why I feel encouraged to get engaged in learning English. Especially, I love reading articles online for useful information. In the past, we just looked at the text book and listened to the teacher's explanations. I could not imagine how English was used in the real life. Every day I learn some short sentences from reading text and use them to practice speaking with my friends. (Student 11)

Similarly, regarding the question about the motivation to study English, Student 3 expressed her strong interest in learning. She explained that discussing and exchanging ideas in the forums raised her desire to use English effectively so that she could communicate with everyone confidently. The following excerpt illustrates this:

I feel motivated to join the forum for discussing as it helps me communicate with other people. I think there is a general need to learn English in an increasingly globalized business world where it has become a de facto lingua franca. (Student 3)

It seems that students were motivated by CALL-based activities that helped them realize how English was used in real situations. Therefore, they took part in learning activities actively so that they could benefit a lot in terms of language improvement. This could then lead to an increase in language competence under the impact of autonomous behavior.

Success in learning a foreign language was what motivated five students in the interviews, for example, Students 4 and 6, who wanted to master the English language in an effective way in order to get the feeling of conquering a challenge in life. One of them stated:

I found it a bit difficult to learn English and therefore I once thought that I should stop learning it. However, you know what, getting exposure to LMS changes my mind and I think learning a language is not that tough at all. I can make it a habit of getting rid of the fear of learning English that I used to have. (Student 4)

It can be inferred that these students were intrinsically motivated because they learned English for inherent satisfaction, not because of external pressures.

Extrinsic motivation

Conversely, some students studied English because of its importance for their future career. Student 13, for example, said that he had not known the real purposes of learning English as he thought it was curriculum policy. Therefore, Student 13 and his classmates attended the English class because English was a compulsory subject. Authentic content in video clips during the experiment changed his mind. He made the decision to learn English to work in a future professional working environment. Student 13 further explained:

When watching the conversations from clips taking place in a real company, I feel motivated as people who speak English fluently in that video are top employers. I wish someday I could speak English well to work in an international working environment, but now I think I need to try more to reach that goal. (Student 13)

Similarly, Student 1 confirmed that he needed to study English to get a good job. When searching for some information online to prepare for the topic presentation namely *How to*

be successful in the job interview, he realized that good jobs always required candidates to speak and use English fluently. He made an attempt to acquire English as much as he could. Student 1's motivation was thus triggered by external attributes. This kind of motivation could be developed more in their working environment, a socio-cultural context in which they would probably compete to be successful.

Two other interviewees explained they were motivated to learn English to pass the TOEIC exams as a requirement for graduation. According to the curriculum, students must pass the exam with minimum required scores so that they would be eligible to complete their studies. One of them said:

Passing the TOEIC exam with flying colors is my top priority so that I can graduate in time otherwise I need to spend a lot of time to retake the test. Each TOEIC task is relatively comprehensive because we are provided with all supports in the LMS class. I think my goal of getting TOEIC score is achievable. (Student 5)

The data indicated that the above students learned English for its instrumental value, which can be considered extrinsic motivation.

Similar to the autonomous behavior of learning English driven by extrinsic motivation, the other two students learned English to travel around the world. Student 7 said that she was fond of learning some English expressions or vocabulary about business travel with specific examples in a certain context because she found it useful to pick up these words for traveling later on. She also looked for more information in English about her favorite countries. Student 9 was also externally motivated to learn English. He said:

Traveling to English speaking countries is one of my hobbies because I can widen my knowledge and experience the different cultures and lives there. To be honest, I am not good at English, especially speaking skills. I need to try to study hard to make my dream come true some day. I think that in order to hit the target, I need to apply appropriate learning strategies. (Student 9)

On the other hand, studying abroad was the main motivation for attending English class regularly. For example, Student 9 also said that after graduating from college, he would like to study in America and his major would be Finance. However, he was afraid he could not meet the language requirement of the university he wanted to apply to. He felt a bit relaxed when he studied in the experimental group because he realized that learning

English was not as difficult as he thought with the support and observation from the teacher. He was sure that his English would improve if he made an effort every single day. He further noted that sometimes he was really motivated because he did not know how to use learning strategies more effectively.

The other reasons why students came to the CALL class were to please the teachers and parents, which was mentioned by Students 5 and 15. Student 15 said that he attended the class because he did not want to make the teacher upset and disappointed. He explained that the teacher was very enthusiastic about the new teaching method and she strongly expected every student to attend the classes regularly to benefit from the innovative learning environment. Meanwhile, Student 13 confirmed that when hearing the information regarding the introduction of the experimental classes, his parents advised them to attend such classes and not to play truant.

In general, students in the study had different motivations for learning English. A large number of students in the experimental groups mentioned enjoyment in learning English as the main reason for their choice. Meanwhile, the other students learned English to get a good job, to pass the exams or to study abroad. These motivations played an essential role as a driving force that made students feel motivated to engage in learning. It can be argued that students should maintain and promote these motivations which in turn will provide them with the determination needed to be willing and responsible for their learning.

4.4.2 Results of interviews with teachers

- Beliefs and attitudes towards CALL
- Reasons to conduct CALL lessons
- Possible issues in the implementation of CALL lessons

Figure 4.5: Teacher interview related-themes

A few ideas were raised during the interviews with teachers. They were interviewed separately and they responded well to the questions about CALL-learner autonomy related themes. It is important to note that teachers were aware of advantages of CALL in English language learning and teaching in terms of learner autonomy enhancement. There are three emerging themes (see Figure 4.5).

Beliefs and attitudes towards CALL

Teacher A believed that it was beneficial that students learned with CALL because technology has become popular in Vietnam and therefore they should be given opportunities to make use of CALL functions. She said:

In this day and age students appear to get used to internet and computer. They also use technology on a daily basis and they are quite technology proficient. So it is time to teach them language with technology. I believe that students prefer learning with technology because it offers authentic learning contents and materials. (Teacher A)

She also stated that some of her colleagues did not want to apply technology in their teaching career because they did not know the importance of learner autonomy and they were not interested in helping students become autonomous. She kept saying that students were still new to CALL and some of the students seemed reluctant when being asked to engage in learning activities. Therefore they needed to spend more time in CALL-based classes. Teacher B who had integrated CALL in her teaching career for a long time said:

I accept that the application of computers in language education is a good idea. Students in some developed countries, especially Western ones use computer in learning foreign languages for years because it is considered effective for students' language competency. Apart from that, it is more practical I believe that students are more dependent and responsible for their learning. Although some teachers at the college do not pay attention to the significance of fostering learner autonomy for students, I think that they need to recognize it soon. (Teacher B)

Reasons to conduct CALL lessons

Two teachers argued that learning English language with CALL is advantageous for some strong reasons. Teacher A said that her students were able to apply learning strategies. She stressed the benefits of students' putting in effort to prepare the lessons at home allowing them to concentrate in CALL class. She said, "My students find it useful to read the learning materials in advance, helping them get the overall idea of the next lessons and they find it easy to learn in online context." She noted the relevance of these strategies by saying, "I am sure they could improve their language skills when they focus more and practice more similar tasks available on the internet out of class." These strategies fit under the planning process with respect to accessing various learning resources and spending extra time on their studies.

Teacher A and Teacher B also thought that their students' evaluation skills were reinforced and both of them considered the presentation videos posted on the forum as the big achievement of their students. They revealed that their students were happy to read the comments and questions related to their topic presentation. They discussed together to exchange ideas and shared their mutual understandings. As a result, they could recognize which parts needed further improvement in terms of content and idea organization for future tasks. The following are some illustrative responses:

I think it is a good idea for my students to discuss in the forum. Actually, they learn a lot from those discussions. They feel free to give comments to each other. Their critical thinking develops better, I suppose. (Teacher A)

My students like to read the feedback from their classmates regarding their group work. Some comments are positive and some are not. However, all of them help students evaluate their work in all aspects. (Teacher B)

The next reason involved the change in teachers' and students' roles, and the teachers indicated that their roles reversed positively to make students become more autonomous. Teacher A described that at the beginning of the course, her students still kept silent and relied much on her. She needed to walk around the class frequently to observe students to make sure they were focusing on the CALL-based tasks and they did not surf the internet for non-related study activities. Then, she recognized her students' learning performance gradually changed. She added, "If I move far away from their place, they are still working

on the computers. So I do not need to watch them and ask them to focus on lessons all the time.” Similarly, Teacher B said:

Integrating technology helps me save energy. I do not have to write and talk much in class. I believe that students are able to learn a lot without my presence. Unfortunately, there are a few students who still keep old learning habits. They seem not active when learning. (Teacher B)

Regarding students’ language proficiency, both teachers said that they guided students in how to improve their learning language output with practical ideas on how to keep using strategies themselves when engaging with online learning. Teacher A suggested that students need to be well-guided and given examples regarding the use of learning strategies for effective listening. She said:

Ummm... I believe that students in my class can use planning, monitoring and evaluating strategies through practicing in three phases of listening tasks: pre-listening, while-listening and post-listening. It is more practical, I believe my students enhance their listening skills in order to be better listeners. (Teacher A)

Teachers A and B agreed that most of the students showed an interest in learning English, which was another reason why teachers recommended the application of CALL. Their students wanted to join the activities on the LMS platform because they could control their learning performances. Teacher A recognised that students seemed to be satisfied with their learning needs. They were willing to do their own tasks and search for related information themselves. She asserted that students showed the same interest in class, “They like the learning activities. Their English has improved a lot when working with CALL. I think students are more confident in communication.” In addition, Teacher B stressed, “Compare to the traditional class, students are more passionate about their study, most of them wished to learn in the CALL class next semester because they consider it would be an effective way to further boost their language output.”

The last reason was about the motivation in undertaking their language studies. Teacher A confirmed that students focused on their learning because they knew the purposes. She said:

Although few of them still have the idea of attending class because of the final exam, the majority of students come to the class with various aims, for example they want to communicate effectively in their future global workplace or they study

just simply because they like to have deeper insights into the cultures of English speaking countries. Actually, learning materials integrated into CALL lessons might affect these motivations. (Teacher A)

Teacher B further noted that some students cared about the learning outcomes regarding the scores at the end of the semester which could result in a scholarship. She kept saying, “English is one of the subjects taken into consideration for considering scholarship. The higher the English score is, the more chances students get for the scholarship”. So, they tried their best to accomplish every single task and activity by taking advantage of the benefits of the CALL class to get good marks in English tests.

Possible issues in the implementation of CALL lessons

A fundamental issue could be a lack of experience in learning in class with CALL as this was the first time students were asked to study English all the time with computers. This obstacle resulted in the fact that some students felt uncomfortable when studying on their own. It can be a consequence of culture and habits of both teachers and students. Face to face interaction was still perceived as a necessary requirement for successful learning. Teacher A said “Well, some students still need direct visual contact with teachers and their classmates as they like to wish to have gestures and facial expressions”.

In addition to the need for direct interaction, two teachers also mentioned slow internet connection having impact on their lesson plan and students’ learning performance. They sometimes postponed their study activities in class. Teacher B said:

Umm... the quality of internet is sometimes not good. It happens to us several times when we all are interested in doing tasks and we could not do it quickly and timely. To be honest, I feel annoyed then. I report the problem to IT staff at the college but it could not been solved. (Teacher B)

Apart from that, the low levels of computer proficiency of some students was another issue mentioned by Teacher A. She said, “three or four students in my class do not know how to know basic functions of computer, such as typing, posting or making powerpoints. They appear to be embarrassed then”.

Interestingly, both teachers considered that the problems that they and students faced were not serious and they confidently dealt with them because they recognized there was a strong need to apply CALL in their classrooms.

4.4.3 Summary of phase 3 results

The interviews with students and teachers reveal that students were able use some learning strategies in their learning performance. They particularly focused on metacognitive and cognitive strategies in order to engage in online tasks and activities, which led to the improvement in their target language. Through a period of studying with CALL, students changed their attitudes positively and they became more interested in learning English. Apart from learning English as the reasons concerning with career, travelling, exams, parents, and teachers, most of them learned English for interest and passion. Teachers supported the implementation of CALL in language teaching and learning because it would be beneficial for students in terms of helping them become more self-directed and responsible for their learning.

4.5 Chapter summary

Findings from the data collection through surveys and semi-structured interviews have been presented in this chapter. The analyses of students' responses in phase 1 suggest a validated and reliable questionnaire for measurement of the three components of learner autonomy. Through the data collected from phase 2 and phase 3, it can be said that computer assisted language learning supported students in enhancing their learner autonomy. Students in the experimental groups knew how to adapt language learning strategies. In addition, it was found that those students had positive attitudes towards learning English and CALL encouraged students to learn English for different purposes, especially because of passion and interest. In the next chapter, Chapter 5, the findings will be integrated and discussed in relation to the literature within the framework of the sub-research questions and main research question.

Chapter 5: Discussion

5.1 Introduction

This study set out to investigate the effects of Computer Assisted Language Learning (CALL) on learner autonomy at a Vietnamese college. The findings have been presented in the previous chapter and all data within the chapter, collected through surveys and interviews, contributed to strengthening and validating the issues and factors identified in regards to changes in the various components of learner autonomy. Therefore, in this chapter the significance of the key findings is discussed in relation to the theoretical framework, relevant literature, and the Vietnamese EFL context, with reference to the following three sub research questions that together help to address the main research question that has been guiding this study.

- To what extent do Vietnamese EFL students change their use of language learning strategies as an effect of completing a CALL intervention?
- To what extent do Vietnamese EFL students change their attitudes towards learning English as an effect of completing a CALL intervention?
- To what extent do Vietnamese EFL students change their motivation to learn English as an effect of completing a CALL intervention?

5.2 Language learning strategies

The aim of the first sub research question was to determine if students changed their use of language learning strategies when studying with CALL. Answers to this research question relied on the questionnaire and interview data with students and teachers.

CALL successfully reinforced the students' language learning strategy use, in that the experimental group outperformed the control group in applying the overall strategies. Most students from the interviews agreed that their learning strategies had developed considerably, and they recognised the significance of strategy use in assisting their independent learning. The results of this study widely support previous studies of effects of technology on learning strategies (Dreyer & Nel, 2003; Tsai & Talley, 2014). The

development of learning strategies leads to the enhancement of learner autonomy and they are helpful in supporting students to develop autonomous learning behaviours (Chen & Pan, 2015; Fuchs, 2017; Ismael, 2010; Koban-Koç & Koç, 2016; Lamb, 2015; Rahimi & Katal, 2012). The findings of the study have revealed the following benefits that CALL could bring to language learners.

The adoption of learning strategies within CALL classes promoted new roles in the classroom, representing a challenge for students who had to move from their past established responsibilities to new ways of approaching their studies. The interviews from both students and teachers indicate that students were always passive in classes and mostly dependent on teachers. They used to believe anything their teachers said was correct. Now, students mentioned that they no longer needed the teachers to do follow-ups for them to complete their assignments, as they gained useful strategies in completing their tasks in an independent and effective manner. Alonazi (2017) emphasizes that the duties of teachers are to provide the support or assistance, which helps students' learning process to become more flexible. Teachers in this study encouraged the students to maximize their active roles as students and provide students with the opportunity to control their own learning in a CALL environment. Farivar and Rahimi (2015), and Hu and Zhang (2017) note that students' active roles have a positive impact on the development of learner autonomy. According to Çubukcu (2017) and Little (1991), independent students take responsibility for determining their objectives, monitor the procedures of acquisition, and evaluate what has been acquired. This is consistent with the findings from this study.

The aspect of learner-centeredness in the learning process was considered by analyzing the insights of the Vietnamese students in this study, and according to them this involved their active participation in their learning process. The use of learning strategies and computers was believed to transform teachers' pedagogical practices from teacher-centered to student-centered ones. Students in the study preferred the teachers to become facilitators or guides in the CALL class. This supports the ideas of several recent studies (Jeong, 2017; Lai, Yeung, & Hu, 2016). In addition, an underlying assumption about effective ways of using learning strategies is that students use them in a student-centered manner and couched within a constructivist learning approach, which in turn stimulates students' interaction with their environment and their empowerment in their own learning (Hedden et al., 2017). This then allows students to learn effectively and do more exercises to gain

control over the learning materials and processes. They will be able to explore information or resources actively and collaboratively, which also reflects the social-interactive dimensions of the learning process outlined in Vygotsky's social cultural theory. In an attempt to promote such active engagement, developing students' sense of their responsibilities should be encouraged.

Students and teachers from the interviews believed that Vietnamese students are used to adopting traditional roles of listening and taking notes about the information they receive from teachers in order to pass their examinations. On the other hand, teachers transfer knowledge and experiences to students so that their students can pass the exam with high scores. In reality however, learners are supposed to eventually use learning strategies for different purposes upon graduation, such as problem-solving and communicating with each other. This mismatch between real life and academic study in Vietnam could be solved by students developing an ability to use learning strategies in order to learn from various resources and become autonomous learners, as evidenced from the interviews. With the establishment of new roles and new learning habits, teachers should focus more on student empowerment than student management to create and maintain a learning environment, supporting student interaction during their learning process without much reliance on teachers. Additionally, teachers need to take a significant responsibility for the process of assisting students in undertaking their learning independently to exercise their autonomy.

Another impact of implementing CALL was shown to be an effective way to support students in enhancing their use of learning strategies aimed at creating an optimal learning environment in which students could participate and boost their target language development, as can be seen from the interviews with both students and teachers. Students indicated that they found various benefits in increasing their use of English because they used English a lot in class and had a cooperative interaction experience for the first time. For instance, in order to make their peers understand their comments or responses, students were required to use language structures and styles that needed to be comprehensive. As a result, there was an improvement in interaction skills among students. This is supported by Vygotsky's notion, within socio-cultural theory, that each individual interacts with the others in a socially mediated process to construct knowledge

(Bruner, 1966; Vygotsky, 1978) and a constructivist approach is thus appropriate to be implemented in a technology-enriched context.

Fewell (2010), Chand (2013), and Ardasheva et al. (2017) observe that learning strategies are one of the factors that influence the development of language competency and learners who use strategies purposefully and actively have good language competency (Griffiths, 2003). Although few students felt that utilizing learning strategies was a big challenge for them, others mentioned that there was an improvement in their target language skills thanks to those strategies. What students were expected to do in the classroom stimulated effective language learning results through communication. Computers were used as a convenient communication tool which helped students have meaningful and authentic interaction. Students were able to exchange ideas and opinions to enhance their understanding of the target language (Braine, 2004; Chan & Windealt, 2016; Hanson-Smith, 2000; Maíz-Arévalo, 2017; Ushioda, 2000).

Autonomous learners usually select strategies depending on the demands of the learning situation to develop their language proficiency (Khaldieh, 2000), and Phan (2015) argues that language proficiency is a crucial factor in developing learner autonomy. The result of this study corresponds with the majority of studies (Bruen, 2001; Chen, 2002; Griffiths, 2003; Wharton, 2000) that show a positive relationship between the use of language learning strategies and language competency. Students showed an improvement in each language skill through the integration of learning strategies in a CALL environment. In terms of listening skills, the findings confirm Young (1997) who emphasizes that learners who employ metacognitive processes, such as self-monitoring and giving feedback, tend to be good at listening skills. This is in line with Chou (2017) and Sedhu, Mohd, and Harun (2017) who mention that effective use of metacognitive strategies helps students improve their listening comprehension. As suggested by Bozorgian (2012), metacognition could be used to support less skilled listeners to advance their listening comprehension ability and thus become better listeners. Students also used English in different writing activities, which enabled them to enhance their writing skills. This idea was actually in agreement with Nasihah and Cahyono (2017), and Wei, Chen, and Adawu (2014) reporting that using planning and organizing strategies encourages students to engage in the writing process because these strategies lead to an increase in the quantity of writing and thereby improves the rhetorical organization of their writing.

Zarei and Rahami (2015) claim that language learner values and beliefs are another concept that forms part of the language learning strategies and competency theme, which depend partly on the talents and passion of the learner. For example, one student in the interviews confirmed that she was a poor listener due to her misunderstanding of the vocabulary. This student could partially understand a particular concept but fail to understand it completely. She wished that the course would be extended for her to have more time to learn English. The positive influence of learning strategies on developing competency in fostering learner autonomy will occur if there are suitable curriculum objectives that meet learners' demands.

With respect to specific learning strategies that were used by the students in the study, as evidenced from the interviews, students were able to use learning strategies appropriately, and metacognitive and cognitive strategies were employed the most. This result is further supported by quantitative findings, in which there were statistically significant difference in the use of cognitive strategies and major difference was found in metacognitive strategies between pre- and post-tests of students in the experimental group. Meanwhile, students in the control group did change their use of those kinds of strategies. The increased usage of metacognitive and cognitive strategies allowed for reflection on the impact of a technology-enriched environment on employing learning strategies in students' language learning. The categories of metacognitive and cognitive strategies helped students recognize and analyse their own language weaknesses that needed a plan to be improved, and the importance of lesson preparation prior to attending class. Planning is considered a step to promote students' learning and to increase their achievement through a supportive learning environment in which students are encouraged to reinforce positive learning behaviors and become active learners. It was CALL in this study that captivated students to apply positive practices to boost their higher level thinking skills, and they found it useful to know about and plan for their own learning. Consequently, they were capable of setting up a plan to address learning-related issues with a view to balancing the course expectations and their needs. This resulted in developing their responsibility for their own learning and their ability to identify the obstacles they were faced with. It is important to give students opportunities to meet their zone of actual development of exercising those responsibilities and provide abilities to set them up for success (Fani & Farid, 2011; Turuk, 2008).

In addition to believing that they could specify the steps which needed to be taken with respect to increasing their lesson understanding, they also thought that learning English in CALL classes enabled them to practice language, check learning progress and encouraged them to concentrate on detecting problems and checking effectiveness. As such, students monitored their learning with the aim of demonstrating the full extent of their learning in response to the achievement targets. Monitoring strategies in the enhancement of learning autonomy occurs on a personal level (Çakici, 2015; Hyte, 2002; Nunan, 2003). In this study, there was an increase in the learner-centeredness of each student allowing each individual to monitor their own study, as can be seen from the student interviews. While monitoring their skills within the online platform, students obtained confidence in expressing their ideas and opinions, given that the accuracy of their understanding matched that of others within the classroom. This is in line with constructivist theory requiring students to interact within a group to improve learning and hence foster learner autonomy. According to this theory, students are expected to keep collaboratively checking learning progress with their peers in the class in order to acknowledge their effort and achievement (Vygotsky, 1978).

Besides such positive benefits CALL brought to students, learning with an LMS also boosted students' ability to apply problem solving strategies in combating difficulties occurring in their learning performance. Students from the interviews admitted that they had met challenges in completing their tasks, which were demanding. Although metacognitive and cognitive strategies contribute to the independence enhancement of learners, students in the study seemed to overcome the challenges with additional assistance from teachers and classmates first and they did self-investigation after being assigned with certain tasks, a process supported by internet and the use of computers. The findings did not completely agree with Hu (2016) and Turner (2009) who emphasize that metacognitive and cognitive strategies are mostly accompanied by self-study. However, this was the first time students were given greater chances to study on their own and encountering learning difficulties was therefore unavoidable. Students were inclined to ask for the assistance of their teachers and classmates because that is what they were used to doing; this constituted a considerable change as Vietnamese students are regarded to be heavily dependent on their teachers. With the consultation from peers, students changed their insights into their responsibilities and gained more independence, for example through developing problem solving skills as part of their class work. This is in line with

Vygotsky's Zone of Proximal Development (ZPD), that is, students interacting with more experienced people to develop their cognition, which is a crucial element for learner autonomy enhancement.

Students, could thus acquire specific strategies and they were aware that they needed to practice and assess their learning. They performed necessary evaluations of their language skills such as reading and speaking skills, which inspired them to strive for academic excellence, leading to the establishment of evaluation ability in a technology-rich learning environment. Having the evaluating ability helped students to better assess their own learning and explore the English learning process. Students could not only gain more skills in the management of their cognition, and its practice to evaluate their English learning, but they were also able to empower each other and at the same time create an independent learning environment, which was more advanced due to the use of CALL. The impact of evaluation increases when students have a clear vision of what is expected of them and students are recommended to fully understand the critical role of evaluation in becoming lifelong learners (OECD, 2008).

Based on the interviews with students, it is clear that practicing and the evaluating ability developed as a result of the integration of CALL with the LMS, which helped develop self-consciousness and self-awareness of students. There was a focus on learner-centered learning approaches and students became more responsible for their learning progress through the evaluation process. Students admitted to having been in charge of their own task completion, meaning that their learning activities advanced and they became more engaged. This is supported by Habibian (2015) and Zarrabi (2016) who argue that practicing and evaluating provides an opportunity for students to learn effectively as they continue to grow. Through practicing and evaluating, it is possible for students to account for their actions and goal settings and consequently they have more responsibilities for their studies.

Some researchers (Alhaysony, 2017; Cohen, 1998; Liu, 2015; Shi, 2017) believe that successful learners need to be aware of strategy use, and autonomous language learners are supposed to exploit a variety of strategies to deal with different tasks in their learning performance. In addition, autonomous learners can evaluate the effectiveness of particular strategies and choose strategies appropriately. Vietnamese students in this study focused

on using two particular strategies, which were metacognitive and cognitive ones, whereas some other strategies such as memory, compensation or affective and social were not widely applied. The reason might be linked to the relatively short period given to the participants to engage in CALL and the current-dominant educational context in Vietnam, as evidenced from the interviews with students and teachers. Students need more time to get used to all learning strategies to study on their own. However, according to research by Oxford (1990), students who use some strategies in general have a better learning experience compared to the learners who do not apply any strategies. Thus, there should be a focus on language learning strategies training for students to equip them with knowledge and skills to exercise these strategies when participating in a technology-enhanced learning community. This would be aimed at helping students recognise the importance of adapting various strategies through using computers, which ultimately turns them into more autonomous learners.

In summary, there is a clear indication that the Vietnamese EFL learners considered language learning strategies as an accurate approach to study and they therefore employed certain strategies in different tasks and activities. The findings of this study show that metacognitive and cognitive strategies were most used by students. They could recognize the impacts of learning strategies on the improvement in their target language and language competency. On the other hand, the sessions from the interviews displayed a lack of knowledge on the part of some students with regards to language learning strategies. These students showed limitations in terms of their incorporation of learning strategies under the existing models of education in Vietnam, in which the Vietnamese education system fails to deliver strategy training within different institutions. It is important to raise awareness about language learning strategies use among students as part of a process of enhancing learners' experiences in language learning. Introducing learning strategies into technology-enriched classrooms can change the ways that language is being learned. These changes bring some challenges to both teachers and students, the most obvious of which is that requires them to become used to different roles and accountabilities. It is significant that learning strategies play a pivotal role in re-shaping social interaction patterns in classrooms, which encourage students to become independent, autonomous and self-directed.

5.3 Attitudes towards learning English

The second sub research question was aimed at investigating changes in students' attitudes towards learning English in the CALL class. In a similar way, the questionnaire and the interview data with students and teachers were used to answer this research question.

Positive attitudes, which is considered as one of the key psychological characteristics, encourages students to be responsible for their own learning, and thereby be more likely to become autonomous learners. The study shed a light on the understanding of the attitudes of Vietnamese EFL students. In chapter 4, questionnaire results indicated that there was statistically significant change in attitudes of students in the experimental group after the experiment, but such change could not be seen in the control group. There was common agreement among students from the interviews on how their attitudes towards learning English during the learning process had improved because of the introduction of CALL. Students gained an understanding of the benefits of CALL, which resulted in an increase in their preference for English language learning. Students gained access to authentic English sources, especially in their social communication settings, and they developed their critical thinking skills. Apart from that, having more freedom and so more cooperative work in class may have changed their attitudes in a positive manner.

The essential factor that was discovered to be essentially and positively connected to autonomous learning behaviors was the use of authentic learning materials, as evidenced from the interview results. Like studies conducted by Kohn and Hoffstaedter (2017), and Sydorenko, Daurio and Thorne (2017), the present findings indicate that authentic materials provided by computers and the internet helped students learn English effectively as they were able to understand how it was used in real situations, which contributed greatly to maintaining their interest in learning English. Sometimes they felt bored, but if they made an effort to practice, their positive attitudes developed accordingly. Moreover, students were more interested in learning English because they could apply learning strategies and they believed in themselves, and according to them this presented a chance to advance their potential in language learning.

Critical ability is often seen as trait of learner autonomy (Benson, 2007; Glas & Cárdenas-Glaros, 2013; Weinstein & Preiss, 2017). Students could behave more autonomously in an

environment which stimulated their critical thinking. Students made judgments about their own and their partners' language performances in the forum. They could interact and learn from their mistakes whenever they were given choices to reach agreements based on arguments. This is to say that they made the best effort to debate and support their points of view in response to others' comments. This allowed them to develop positive attitudes which was related to better understanding their awareness of their rights. Jácome (2012) argues that autonomous learners often recognize their rights through the path of learning with their attitudes allowing them to move towards more self-control.

The interviews with fifteen students and two teachers in the experimental group reveal that there have generally been positive behaviors in the process because students could actively learn English in an independent manner, free from their teachers' supervision within the classrooms. A number of students had a desire for freedom as well as taking responsibility for making their own decisions, especially on what, where, when or how to conduct their learning. This picture of Vietnamese students' learning behaviours seemed not to connect with the pervasive stereotype of passive and dependent learners from Asia. This study was not in line with Subramaniam (2008)'s finding that Asian learners hardly have positive attitudes towards their English learning and that Asian students therefore have low levels of learner autonomy. As suggested by Benson (2011), the social context of learning should be taken into account when the issue of fostering learner autonomy is considered. Despite the fact that Vietnam is impacted by Chinese culture, it would be inaccurate to suggest that Vietnamese students lack the ability to exercise autonomy because the participants in this study displayed a considerable interest in student-centered learning approaches in a CALL environment.

Cooperative work was another factor influencing the changes of students' attitudes.

Cooperative work is considered a good stimulation for students to become more engaged in learning and therefore it fosters a high degree of autonomy (Díaz Rezamí, 2014; Kojima, 2012; Yuliani & Lengkanawati, 2017). Students were allowed to work together to assign the tasks that needed to be done. Through working in groups, students were put in charge of their own specific active roles, and they made decisions about this on their own, leading to an increase in their control over their learning. More importantly, they could receive feedback from their peers regarding their work and share preferences for fulfilling common goals, as well as exchange ideas, opinions and understandings. From a

community of practice point of view, such cooperation fulfils the demands of social interaction, contributing to learning performance and hence improving learner autonomy (Murray, 2017; Ribbe & Bezanilla, 2013).

During the interviews with two teachers, there is one reason why some students did not have a positive attitudes and hence did not have autonomous learning behaviors as a result. Teachers in Vietnam have not developed a sensibility towards learners' positive behaviors and they are generally not concerned with the creation of autonomous learning environments. Similar to Zarie and Elakei's (2012) view, this study revealed that stereotypical actions may have caused a less sensitive attitudes from teachers towards deviations from their original teaching orientations. Being exposed to traditional teaching methodologies, students have been left without the opportunity to change their attitudes to the language learning process. Apart from that, during the implementation of LMS, internet connection were often found as distracting students' attention from their learning and thus often became a problem for students in the experimental group, as evidenced from the interview results with students and teachers. In order to ensure the success of CALL class, it should be free from technical problems (Anderson, 2008). In addition, some students did not fully maximize their ability to boost their language skills because they lacked basic computer skills, as this was the first time they applied computer skills in their learning on a daily basis. Hence, it would have been more successful if students had not had any anxiety caused by insufficient basic IT skills.

Furthermore, some students did not really have positive attitudes towards learning language. They showed unwillingness to expend effort on the leaning activities as they did not exercise appropriate learning behaviors and the influential factor could be that they still held a traditional perception of the role of the teacher in a classroom, which made them keep relying largely on the teacher's presence even though they were supplied with internet and computers. They still preferred teacher-centered approaches. These students were comfortable with their teachers being in charge through correcting their mistakes and offering guidance. This phenomenon might just be a washback of the spoon-feeding methods that operate within primary and secondary institutions in Vietnam (Mohd Jaafar & Thang, 2013).

Still, unlike the finding of Liu and Chao (2018), learners were less dependent on teachers and felt comfortable in CALL classes. Thus, even though there has been a shift toward learner-centered approach, some students still required the guidance and support from teachers to help them set goals and make choices so that they could be more actively involved in learning activities. This is supported by Ushioda's (2005) finding that teachers typically play a role in affecting students' attitudes and shaping the culture of online classes. As such, teachers need to know the progress made and the difficulties students are faced with so that they can implement effective steps and offer appropriate support in the technology-enriched context in order to establish a truly collaborative and cooperative learning context, and in this way students' autonomous learning behaviors will develop.

In summary, the relationship between autonomous behaviors and attitudes of learners has been observed in this study. There may be implications of this finding with regards to positive attitudes that are channeled into the English language learning process, which could essentially draw on independent behaviors, and the promotion of learner autonomy. Based on this outcome, it is evident that learners were aware of the significance of learning English as well as the acquisition of effective learning strategies. The students gained more interest in their English studies by using CALL. Notably, enhancement of autonomy resulted from the positive attitudes of students, and Vietnamese learners can therefore no longer be stereotyped as necessarily having a passive attitudes and complying with a teacher-dependent culture for controlling.

5.4 Motivation to learn English

The sub research question 3 investigated whether students were more motivated to undertake their English studies in the CALL learning environment. This question focused on what level of motivation students had in the CALL class. In order to answer this research question, the questionnaire and interview data with students and teachers were used.

Based on the questionnaire data, students in the experimental group became more motivated after the experiment, particularly they were more intrinsically motivated, while students in the control maintained their level of motivation when the experiment ended. Findings from the interviews with students and teachers align with questionnaire results.

Seven primary sources were involved as far as motivation was concerned: personal interests, success in language learning, career, exams, traveling, studying abroad and pressure from parents and teachers. Considering the seven sources of motivation, the first two represent the intrinsic motivation and the other five represent extrinsic motivation. Students had a strong belief that the most vital reason for studying English was out of the interest and as a result of their passion. They agreed that the learning sessions involving CALL programs were interesting because every activity had a unique design. Due to CALL-based authentic learning content, they enjoyed learning English even more. For example, they read stories for relaxation, which was unlike the past where they would listen to the instructors and read textbooks, as evidenced from the interviews. Students needed to enhance their communication skills to talk to and keep in touch with people because English is an international language that is widely used. A new learning environment played a greater role in increasing students' motivation to learn English. In some cases, students made an attempt to learn English and they conquered the challenges in mastering a foreign language on their own. Learners who have gained intrinsic motivation, have a tendency to work alone, particularly with materials that they feel benefit them (Dang, 2012; Ma, 2012; Zarie & Hashemipour, 2015). The students detached themselves from the learning activities, because they felt confident and more motivated in becoming independent learners of the English language.

Students believed that they were encouraged to learn because they were able to use their imagination and creativity in order to complete the tasks and activities that would be uploaded onto the forum to be evaluated by other students. Therefore, those activities provided students with opportunities to choose and make decisions on their own. They depended less on the teacher's management to maximize their self-learning. Students felt eager and willing to learn without being controlled, which created good conditions for them to exercise their autonomy. This is in line with Alkhoundary's (2015) and Dickinson's (1995) idea that when not being controlled by a teacher, students are more driven by intrinsic motivational factors. It is necessary to create circumstances in which intrinsic motivation can be promoted so that students can take responsibility for their own learning.

The interview data with fifteen students suggest that when taking responsibility for their learning performance, students were aware of their own success or failure. They then had

the determination to invest effort in monitoring and pursuing goals so that they could enhance the possibility of achieve better results, which then turned out to boost motivation. As suggested by Dickinson (1995), success enhances motivation only in learners who are intrinsically motivated. Nicholson (2013) argues that extrinsic motivation may have short-term impact on language outcomes, while students gained greater learning success when they have a genuine interest in long-term learning goals. It is likely that student's autonomous learning behaviors are formed as a result of individual learners' intrinsic motivation when it comes to development of personal goal setting, success expectations and a satisfactory sense of responsibility. In all these situations, prior to the growth in autonomy, motivation must be promoted first (Chan, Spratt, & Humphreys, 2002; Fazey & Fazey, 2001; Liu, 2015; Üstünlüoğlu, 2009).

It was essential for students to acquire intrinsic motivation, especially for English learning purposes. Guided by intrinsic motivation, the students enjoyed learning, and they considered English language learning to be an enjoyable experience. It is understandable that students embraced higher degrees of intrinsic motivation since CALL helped them to make decisions around studying English for their own purposes. Joshi (2011), Kalanzadeh, Soleimani and Bakhtiarvand (2014) and Lee (2017) note that through the development of most learning materials that are taught in classrooms through CALL, students can develop high levels of motivation throughout their course.

This finding is similar to Le's (2013), but it contrasts with Tran's (2007) claim that many students in Vietnam do not demonstrate any interest in learning English. The reason participants in the current study embraced learning English to a considerable degree was due to intrinsic motivation, as can be seen from the fact that they ranked intrinsic motivation first. In particular, the research conducted within four countries in Asia - Japan, Korea, Taiwan and China - by Freiermuth and Huang (2012), Alkhouday (2015), and Bi (2015) respectively, has suggested that students learn English as a result of intrinsic motivation. Based on self-determination theory, a person's intrinsic motivation can be developed or deprived by different elements in a society.

As Scharle and Szabó (2000) and Malik (2017) and Oga-Baldwin, Nakata, Parker and Ryan (2017) explain, intrinsic motivation helps learners to identify their learning goals and therefore, gives a clear indication of how learner motivation affects autonomy. Once

learners are motivated to focus on their goals, they can easily link their ability to their interpretation of learner autonomy and are therefore likely to concentrate on the development of the skills needed to evaluate reflective self-management learning. On the other hand, self-interest is considered an important factor in intrinsic motivation, which leads to self-determination. The results from this study suggest that when there is an increase in intrinsic motivation, there is a higher possibility that this would have been influenced by CALL.

Even though there are differences for most students as far as the purpose of learning English is concerned, some of the students pointed out how essential learning the language was for the development of their career opportunities and seeking employment. This finding is in line with Uchidiuno, Ogan, Yarzebinski, and Hammer's (2016) idea that an online course is correlated with students' motivation for their future careers. Students have discovered that better jobs generally demanded candidates with a good command of English, which encouraged them to pursue English for future employment. They took it upon themselves to learn English, and set tasks associated with practicing language skills as their long-term goal to achieve it gradually. Learning activities that are relevant to personal goals and interests support the development of learner autonomy (Hartnett, St. George, & Dron, 2014).

The occasions where the learners had motivation for learning English for the purpose of their future careers and their own development can be perceived as effective or relevant. Learning English was useful for them because they would be able to find a good job with a high salary and be able to get promotions. When discussing such situations, there is always an interrelationship between the role of English language in international trade and its connection with globalization, especially in Vietnam (Dang et al., 2013). The current Vietnamese society is open to change, since this society connects Vietnam with other communities that affirm English as a common language. Through globalization, there has been creation of job opportunities. According to Pham (2010), such chances come with better and desirable pay rates. Therefore, it can be concluded that through globalization and modernization, the beliefs of Vietnamese individuals concerning the instrumental advantages of studying English have been constructed, and several students had drawn motivation from learning English to pursue it even more in order to get better jobs.

On the other hand, several students confirmed that they were obligated to learn the language in order to pass all English tests. As observed from the legal archives, students are required by the Vietnamese Ministry of Education to acquire some level of fluency in English upon graduation (MoET, 2008b). It is no surprise that according to students from the interviews, CALL helped them learn English effectively, which was among the top priorities for them to get high scores. Additionally, students stated that they experienced pressure to learn English to please instructors and parents. This result reflects Vietnamese collectivist culture that observes community, including class and family, and the hierarchy of power in Vietnam, as well as the significance of maintaining harmony with relevant people in society, including parents and the lecturers. According to Tran (2007), EFL learners have the motive of establishing their personal lives through studying English. This is why several students in the interviews considered learning English for traveling and studying abroad. The mentioned reasons for studying English by those students can be considered extrinsic motivation, which obviously contributes to the learning of English for most students. This study also supports other research conducted in various countries, at both regional and international levels, which conclude that students study English for instrumental purposes (Bradford, 2007; Hayes, 2014; You & Dörnyei, 2014).

According to Deci and Ryan (1985), and Dörnyei and Ushioda (2011), students who are passionate about the learning tasks and learning outcomes for their own sake have higher levels of motivation compared to those who focus on rewards for their learning outcomes. As suggested by Dickson (1995), in an attempt to enhance intrinsic motivation, students should be given greater opportunities to use extrinsic incentives and controlling events aimed at helping them acquire enough of the language. It is necessary to provide students who are less intrinsically motivated with a more effective model of motivation (Girmus, 2011; Williams & Williams, 2011). Another concern is that Vietnamese students have changed from teacher-centered to more learner-centered learning environments, and some of them are not really motivated which could be because they do not know how to use learning strategies to study on their own. Therefore, there might be a correlation between motivation and strategy use that can be inferred from this study. Students would be advised to select appropriate strategies in the technology-enriched English classroom based on demands of the task rather than waiting to be provided with a full list of strategies. By doing so, their language performance can be improved, leading to an advancement in motivation in making decisions regarding why to learn, what to learn and

how to learn. They would then be more willing to take responsibility for their own learning and their learner autonomy would develop accordingly. In other words, motivation is a strong predictor for learner autonomy and the former must be promoted so that the latter can be fostered. This supports the ideas of Snodin (2013) who argues that learner autonomy needs support in practice and from other people because it is not inborn.

In summary, according to self-determination theory, the motivation of a person might change as an outcome of internal elements such as growth of interests and success, as well as external factors that include the impacts of instructors. There is a possibility that to some extent, the learners feel obliged to study English since it is required of them to learn one of the foreign languages apart from the particular academic courses that they choose. Therefore, there should be considerations towards making students become more intrinsically motivated to study English in order to boost their autonomy.

5.5 Conclusion

Based on the answers to three sub-research questions as discussed above, the answer to the main research question guiding this study, *How does Computer Assisted Language Learning (CALL) affect Vietnamese college students' learner autonomy?*, can be found in this section with the new model of learner autonomy in a CALL learning environment in Vietnam which has been developed based on the findings, as well as the theoretical framework (see Figure 5.1).

Vietnamese students are often considered as passive learners and it appears to be impossible to change this stereotype. In language classrooms, the teaching and learning approach is teacher-centered, focusing on the role of teachers, who are thought to be knowledge keepers. When attending the class, students just need to listen to teachers' explanation, take notes and interact mostly with teachers. They are not given opportunity to control their learning performance and have less freedom to carry out learning tasks and activities on their own.

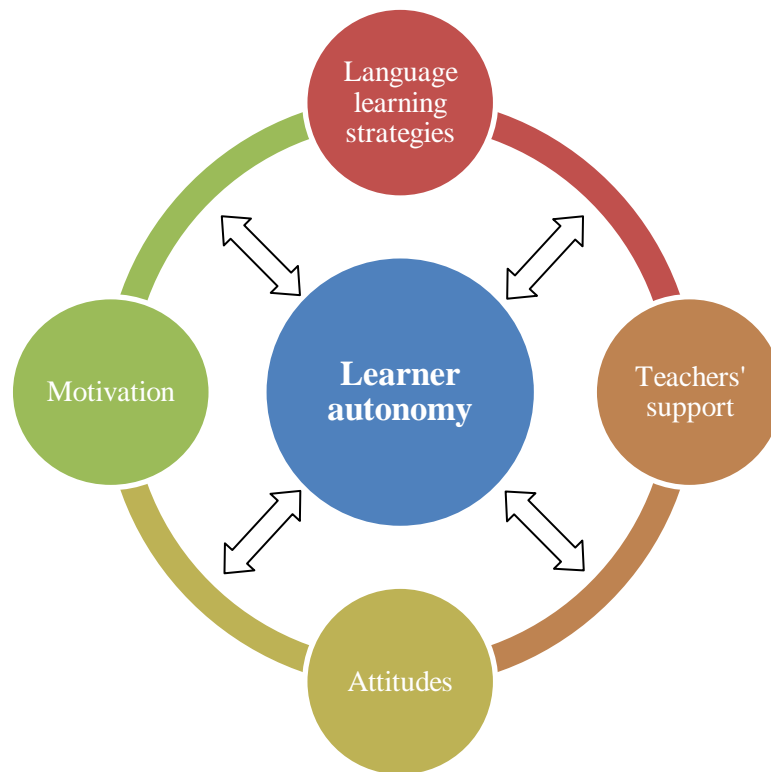


Figure 5.1: The model of learner autonomy in Vietnam

However, the findings of this study confirm that although Vietnamese language education has been strongly influenced by Confucianism and collectivism is reviewed as a hindrance in promoting learner autonomy in Asian context, Vietnamese students can become autonomous when they engage their learning with CALL. This new learning environment enables students to take more responsibility for their own learning, manage their learning and see themselves as having a crucial role in their language learning. To be more specific, students have chance to utilize language learning strategies. Armed with learning strategies, students demonstrate high level of their control over learning and set their learning goals by themselves. They also have self-regulation skills, including analyzing, practicing, planning, monitoring and evaluating. CALL-based lessons have positive impact on students' attitudes towards their studies, which is one of the variables to determine learner autonomy, resulting in making them believing in their ability to learn and to self-direct their learning. Apart from that, thanks to CALL, students become more intrinsically motivated to accomplish autonomous learning activities inside or outside the classroom. Motivation is considered as a strong predictor for and an indispensable factor influencing the degrees of learner autonomy. With greater motivation, students are able to achieve a higher level of autonomy. Students in the study still prefer the presence of

teachers in the CALL classes. Although they are likely to be centered in their learning, they need teachers as facilitators and guides, which is also considered as an essential factor fostering learner autonomy in Vietnam. Students could carry on their learning provided that teachers give them guidance and directions. This is in line with some researchers who assert that teachers' roles in technology-enriched learning environment are not forgotten. In effect, through the support of teachers, students can even become more autonomous. Vietnamese students appear to have reactive autonomy, one kind of learner autonomy mentioned by Littlewood (1999). It is necessary to recall Littlewood's (1999) definition of learner autonomy in chapter 2, he divides the concept into two levels. They are proactive autonomy and reactive autonomy. This is to say that, learners with proactive autonomy are able to shoulder the responsibility for their own learning, set up their aims, choose methods and techniques, and evaluate what has been achieved. In this way, learners establish the learning plan and make effort to obtain the aims. Littlewood (1999) claims that proactive learning is the term used to describe Western students. Secondly, reactive autonomy is the kind of autonomy which does not create its own directions, but rather assists learners in organizing their resources in an autonomous way to acquire their target once a direction has been initiated for them.

5.6 Chapter summary

In this chapter links between the findings and the research questions were made. Whenever possible, links to other studies have also been made. The discussion in this chapter was organized in such a way that readers could have directly see how the sub-research questions and main research question have been answered with the data collected through the study. The chapter was ended by the presentation of model of learner autonomy in Vietnam, including one new factor which was also perceived as important to be presented here though it was not specially intended to be investigated during the study. A summary of the study with key contributions and implications will be considered in the final chapter.

Chapter 6: Conclusion

6.1 Introduction

It is worthwhile to mention again the specific context where this study took place. Vietnam, a developing country in Asia, has been making an effort to boost the local economy by providing the labour market with suitably qualified employees. In order to reach this goal, one of the main concerns is that graduate students are not proficient in English due to a lack of learner autonomy. This is mainly because English teaching and learning are strongly affected by a Confucian ideology. Therefore, teachers are considered as the dominant role models in classrooms and students are passive knowledge receivers. To deal with this problem, the educational authorities in Vietnam have been calling for the teaching innovation including accelerating the use of CALL as a means of fostering learner autonomy. However, the benefits of the integration of CALL to support students to maximize their responsibility for their study and to take control over their learning performance have not been fully explored in Vietnamese higher education.

This study set out to investigate the impact of CALL on the development of learner autonomy by measuring the changes of three important components including language learning strategies, attitudes, and motivation. The study employed both quantitative and qualitative methods to answer the following main and sub research questions:

How does Computer Assisted Language Learning (CALL) affect Vietnamese college students' learner autonomy?

Sub-research questions:

1. To what extent do Vietnamese EFL students change their use of language learning strategies as an effect of completing a CALL intervention?
2. To what extent do Vietnamese EFL students change their attitudes towards learning English as an effect of completing a CALL intervention?
3. To what extent do Vietnamese EFL students change their motivation to learn English as an effect of completing a CALL intervention?

Regarding the research design, there was a combination of three major phases: the questionnaire validation phase, the experimental phase, and the interview phase. The first phase aimed to validate the questionnaire adapted from the literature before the second phase took place, which was the main focus of the project. In the second phase, known as the experimental period, one hundred students were divided into two classes in the control group and two classes in the experimental group - and there were twenty-five participants in each class. The difference between the experimental and control groups was that students in the experimental group were taught by two teachers with the support of CALL, which was integrated in the LMS, meaning that the learning activities were designed based on the functions and relevant features that computers and the internet could supply. By contrast, the other two teachers and the participants in the control group engaged with traditional teaching methods with textbooks only. Variables which might have impact on the experiment were controlled and both groups followed the same curriculum throughout a twelve-week semester. Before and after the experiment, one hundred students completed pre- and post-tests by answering the validated questionnaire from the first phase. The second phase of the study established that CALL could be beneficial to improve students' learning strategies, attitudes and motivation; and the third phase further confirmed that learners could enhance their autonomy through involvement in CALL with a focus on metacognitive and cognitive strategies, positive attitudes, intrinsic motivation, and the support from teachers.

This chapter concludes the thesis by discussing specific theoretical, methodological, and pedagogical contributions this study has made to the field of learner autonomy. It then discusses the limitations of the study. Finally, it reiterates some of the implications and makes suggestions for future research.

6.2 Theoretical contributions

The study has made contributions to the existing literature about learner autonomy. Firstly, components of learner autonomy have been devised on the basis of the literature, breaking down the components into three main factors: language learning strategies, attitudes towards learning English, and motivation to learn English. The new model of learner autonomy from the study adds one new component, which is the support from teachers. In

a CALL learning context, teachers help students get over difficulties and challenges, leading to students becoming more responsible for their learning performance.

Secondly, the study has revealed that learner autonomy in a Vietnamese context relates to utilising effective learning strategies, positive attitudes, and intrinsic motivation in language learning. This conceptualization is supported by CALL and it is useful for teachers and educators in terms of offering solutions to promoting learner autonomy, for it is argued that in order to conduct any studies to explore learner autonomy, it is important to know which components of learner autonomy should be enhanced. In effect, the findings show that during the time of being exposed to CALL lessons, students could apply certain strategies to create opportunities to practice and learn English. Furthermore, they had an interest as well as a stimulus in undertaking their studies. It seems that CALL plays an integral role in enhancing learner autonomy not only in Western settings but also in Vietnam where there are contextual constraints hindering learner autonomy.

Thirdly, it is argued that without the enhancement of psychological attributes of learners, such as motivation and attitudes, learner autonomy cannot develop. The understanding of learner autonomy in the Vietnamese context emphasises the psychological perspective, which prioritises the role of students in the process of constructing their language learning. In this study, students were intrinsically motivated to make an effort to learn, to share their responsibility, and to control their learning process. In addition, students were aware of the importance of learning English and obtaining cognitive and metacognitive strategies in analyzing, practicing, planning, monitoring, and evaluating their learning. Most of the students had a tendency to be student-centered in CALL environment. In the literature, students' attributes such as learning styles and habits, attitudes and motivation are aligned with constructivist approaches in language learning. However, learning styles and habits could be supported with learning strategies within the CALL learning environment based on the findings of this study.

The next major contribution made by this study is that it reinforces the technical perspective of learner autonomy, which focuses on the role of situational aspects without the control of a teacher. The situational aspects can be seen as a resource-rich environment to give students greater control over their study performance. The authentic materials from CALL provided students with opportunities to regulate their independent learning

activities autonomously. The significance of learning process was identified in this study and relates to technological aspects such as the availability of materials that help students make decisions on their own, depend less on teachers and boost their critical reflection. Therefore, by identifying how learner autonomy is fostered in English language learning, in the context of tertiary education in Vietnam and from a technical perspective, this study highlights the importance of CALL in helping students take an active role in the English learning process, as it fosters learner autonomy through creativity in different types of tasks and activities. Both CALL and learner autonomy go hand in hand as the latter is dependent on the former.

It is therefore important to promote more understanding of how to incorporate new CALL programs in language learning throughout the whole education system in Vietnam so that students at all levels can explore the benefits of CALL to foster their learner autonomy.

6.3 Methodological contributions

The validation of the questionnaire helped with the production of a new survey. The questionnaire went through many rounds of revisions to ensure its suitability in the context of Vietnam. It was then validated through exploratory factor analysis and internal consistency assessments. The analysis was mostly for understanding and measurement of learning strategies, attitudes and motivation. Thus, the reliability of the scores of the questionnaire was ensured. Notably, there are limitations to the research on learner autonomy as related to CALL in Vietnam. Through the implementation of the new questionnaire, the local context could easily be understood. It is also possible for the questionnaire to be used in different language learning settings.

As mentioned in chapter 2, there are a limited number of research studies about CALL and learner autonomy in Vietnam. This study is considered the first one to employ the type of experiment it did, and this adds to a growing use of mixed methods approaches in the field of learner autonomy in a Vietnamese context. The use of mixed methods design has been important in producing reliable and credible results. Hopefully, this study will encourage others to explore similar experiments and mixed method designs to investigate learner autonomy further.

6.4 Pedagogical contributions

The study also makes some pedagogical contributions to the online teaching and learning of English in countries where some practical constraints have existed like in Vietnam. The findings of this study enhance the possibility to design and integrate CALL into existing curriculum. The study provides a level understanding that can help Vietnamese stakeholders, including course designers, institutional authorities, and teachers, identify the benefits of CALL in achieving better educational outcomes through the development of learner autonomy. This is mainly because the CALL context focuses on the development of independence for most students, stimulates interactions, and creates more relevant and focused discussions.

Students desire the freedom and responsibility to reflect on their learning and figuring out how to improve their language proficiency without much reliance on teachers. It is suggested that teachers and students should identify their responsibilities in the teaching and practicing of English through CALL. As such, students should focus on their active role in engaging in their studies, and teachers should play the roles of mediators or guides. Within this research, CALL was used as a vital tool to help both students and teachers. They need to be aware of their responsibilities and support each other in the achievement of learner autonomy.

The study also contributes to the strengthening of policies in a national project to integrate technology into language education to help students develop more autonomy. Current policies lack specific means to achieve their goals. As discussed in the previous chapter, the construction of online learning programs in this study was considered motivating and empowering for students. Apart from the increase in interest in learning, students were able to develop learning strategies. Therefore, policy makers should consider the useful elements that make up successful online learning programs. To be more specific, a strong focus on online professional design should be valuable in supporting program designers and teachers to construct practical CALL-based content.

The reliability of the LMS used in language teaching and learning is seen as one of the fundamental factors encouraging students to overcome the difficulties they are faced with during their learning performance. Students in this study confirmed that the quality of the

internet hindered their passion for online learning. They sometimes felt annoyed with low and interrupted internet connections. They were less likely to get their learning activities and tasks done. Thus, it is advisable that improvements of technical facilities as well as internet quality are needed to create better opportunities for students to access English language learning materials online.

6.5 Limitations and directions for future research

Although different aspects of the study were carefully taken into consideration, there are still unavoidable limitations. This investigation only focused on the South of Vietnam and it did not consider other parts like the North. Therefore, collecting other pieces of data from different parts of Vietnam may help obtain a fuller picture of learner autonomy in an online English language learning course. Future research should include participants of different backgrounds in order to identify the potential different relationships between CALL and learner autonomy. Comprehensive and far-reaching results could be achieved as a result. Also, only one hundred learners took part in the research study, which is a relatively small number. Thus, caution should be exercised in generalising findings to other research contexts. The expansion of the number of participants would have helped to draw quantitative stronger conclusions about the findings of the study. Apart from that, future research may take the roles of the teacher into consideration because according to the findings, the teacher also has a significant role in fostering learner autonomy in the CALL context.

The students' responses to the questionnaires and interviews as the data collecting instruments reflected their self-reporting. They may not have responded honestly and therefore, the results may have been subjective to some extent. Future research should employ different research instruments used in exploring learner autonomy. For instance, researchers could opt for observation methods, and implement those for both experimental group and control group. By doing so, they would be able to make an accurate comparison between the process and learner autonomy, perhaps in a simpler manner. Another limitation regarding the second phase of the study was that the experiment lasted only for a 12-week semester. It is a challenge to develop learner autonomy in only a short period. It is argued that learner autonomy takes more time as it is a gradual process (Dang, 2012)

that requires the development of language learning strategies, attitudes and motivation. Future research should be more longitudinal.

6.6 Conclusion

In harnessing the potential of the learning management system and addressing its function of enhancing learner autonomy in a local context, this study has tried to find ways to improve the components of autonomy. This study is an exploration of changes in students' learning strategies, attitudes and motivation, and how these components were adjusted during the CALL intervention. Overall, this study found that students were able to incorporate appropriate strategies in implementing their learning performance and they became passionate and motivated in their studies. Students perceived advantages of technology that facilitated them to obtain knowledge and become more autonomous in taking control of their learning.

The research identified fundamental factors in learning strategies, attitudes towards learning English, and motivation to learn English, which included metacognitive and cognitive strategies, positive attitudes, intrinsic motivation and the support from teachers that together made a great contribution to making students autonomous themselves. In effect, metacognitive and cognitive strategies allowed students to analyse, practice, initiate, monitor and evaluate their learning process. Positive attitudes encouraged students to learn English actively. Regarding motivation, students who were intrinsically motivated could get over the obstacles in any learning contexts, leading to a situation in which they became more interested in the need for knowledge achievement or knowing what kinds of learning outcomes they should gain. Furthermore, both teachers and students were supposed to be aware of their roles and responsibilities in CALL classrooms. Thus, students were placed at the centre with the support of teachers, and teachers were not regarded as knowledge holders, but rather acted as counselors, advisors and/or facilitators. Students had a chance to maximize their potential of developing their autonomous learning behaviours.

To conclude, the current study has provided more in-depth evidence of the effects of CALL on components of learner autonomy and how these components change positively. There is still a further need to better understand the advantages of CALL that bring about

the development of learner autonomy in the contemporary context of Vietnamese higher education.

References

- Afrin, N. (2014). Integrating computer assisted instruction in the EFL classroom of Bangladesh. *IOSR Journal of Humanities and Social Science*, 19(11), 69-75.
- Agbo, L. S. (2015). Factors influencing the use of Information and Communication Technology (ICT) in teaching and learning computer. *Journal of Education and Practice*, 6(7), 71-85.
- Aifundin, M. S. (2016). *Training language teachers online: A study of Computer Assisted Language Learning (CALL) teacher training in Indonesia*. PhD thesis. University of Southern Queensland.
- Akram, M., & Ghani, M. (2013). Gender and language learning motivation. *Academic Research International*, 4(2), 536-540.
- Albirini, A. (2006). Teachers' attitudes toward information and communication technologies. *Journal of Computer & Education*, 47, 373-398.
- Al-Busaidi, K., & Al-Shihi, H. (2012). Key factors to instructors' satisfaction of learning management systems in blended learning. *Journal of Computing in Higher Education*, 24, 18-39.
- Alhaysony, M. (2017). Language learning strategies use by Saudi EFL students: The effect of duration of English language study and gender. *Theory and Practice in Language Studies*, 7(1), 18-28.
- Alkhoudary, Y. (2015). *Autonomous learning among ESL students at Al-Buraimi university college in the Sultanate of Oman: A case study*. Paper presented at the 5th International Conference on e-Learning.
- Alonazi, S. M. (2017). The role of teachers in promoting learner autonomy in secondary schools in Saudi Arabia. *English Language Teaching*, 10(7), 183-202.
- Amir, Z. (2006). Learning with technology: Language learning strategies and perceptions of learners in an online environment. *AsiaCALL Online Journal*, 1(1), 50-72.
- Anderson, A. (2008). Seven major challenges for e-learning in developing countries: Case study eBIT, Sri Lanka. *International Journal of Education and Development Using ICT*, 4(3), 45-62.

- Aoki, N. (2001). The institutional and psychological contexts of learner autonomy. *AILA Review*, 15, 72-90.
- Aoki, N. (2008). Teachers' stories to improve theories of learner/teacher autonomy. *Independence*, 43, 15-17.
- Ardasheva, Y., Wang, Z., Adesope, O. O., & Valentine, J. C. (2017). Exploring effectiveness and moderators of language learning strategy instruction on second language and self-regulated learning outcomes. *Review of Educational Research*, 87(3), 544-582.
- Arnó-Macià, E. (2012). The role of technology in teaching languages for specific purposes courses. *The Modern Language Journal*, 96(1), 89-104.
- Baggetun, R., & Wason, B. (2006). Self-regulated learning and open writing. *European Journal of Education*, 41(3-4), 453-472.
- Başöz, T., & Çubukçu, F. (2014). Pre-service EFL teacher's attitudes towards Computer Assisted Language Learning (CALL). *Procedia - Social and Behavioral Sciences*, 116, 531-535.
- Beatty, K. (2013). *Teaching & researching: Computer-assisted language learning*. New York: Routledge.
- Benseman, J. (2012). *Adult refugees learners with limited literacy: Needs and effective responses*. Wellington: English Language Partners.
- Benson, P. (1997). The philosophy and politics of learner autonomy. In P. Benson & P. Voller (Eds.), *Autonomy and independence in language learning* (pp. 18-34). London: Longman.
- Benson, P. (2001). *Teaching and researching autonomy in language learning*. London: Longman.
- Benson, P. (2003). Learner autonomy in the classroom. In D. Nunan (Ed.), *Practical English language teaching* (pp. 289-308). New York: McGraw Hill Company.
- Benson, P. (2007). Autonomy in language teaching and learning. *Language Teaching*, 40(1), 21-40.

- Benson, P. (2011). Language learning and teaching beyond the classroom: An introduction to the field. In P. Benson & H. Reinders (Eds.), *Beyond the language classroom* (pp. 7-16). Basingstoke, UK: Palgrave Macmillan.
- Benson, P. (2011). *Teaching and researching autonomy*. London: Routledge.
- Benson, P. (2013a). Learner autonomy. *TESOL Quarterly*, 47(4), 839-843.
- Benson, P. (2013b). The philosophy and politics of learner autonomy. In P. Benson & P. Voller (Eds.), *Autonomy and independence in language learning* (pp. 18-34). Abingdon: Routledge.
- Benson, P. (2016). Language learning beyond the classroom. *ELT Journal*, 70(1), 110-113.
- Benson, P. (Ed.). (2007b). *Learner autonomy: Teacher and learner perspectives*. Dublin: Authentik.
- Betts, G. T., Carey, R. J., & Kapushion, B. M. (2016). *Autonomous learner resource book: A pathway to individualized learning and living. Gifted education designed by learners with support from educators and families*. Waco, TX: Prufrock Press.
- Bi, X. (2015). Associations between psychosocial aspects of English classroom environments and motivation types of Chinese tertiary-level English majors. *Learning Environments Research*, 18(1), 95-110.
- Bielska, J. (2011). The experimental method in action research. In D. Gabryś-Barker (Ed.), *Action research in teacher development: An overview of research methodology* (pp. 85-120). Katowice: Wydawnictwo Uniwersytetu Śląskiego.
- Bilbatua, L., & Herrero de Haro, A. (2014). Teachers' attitudes towards computer-assisted language learning in Australia and Spain. *Círculo De Lingüística Aplicada a La Comunicación*, 57(57), 3-44.
- Birbili, M. (2000). Translating from one language to another. *Social Research Update*, 31(1), retrieved 22 May 2017 from <http://sru.soc.survey.ac.uk/SRU31.html>.
- Blackwell, C. K., Lauricella, A. R., & Wartella, E. (2014). Factors influencing digital technology use in early childhood education. *Computers and Education*, 77, 82-90.
- Blin, F. (2004). CALL and the development of learner autonomy: Towards an activity-theoretical perspective. *ReCALL*, 16(2), 377-395.

- Borg, S., & Al-Busaidi, S. (2012a). Teachers' beliefs and practices regarding learner autonomy. *ELT Journal Volume*, 66(3), 283-292.
- Borg, S., & Al-Busaidi, S. (2012b). Learner autonomy: English language teachers' beliefs and practices. *ELT Journal*, 12(7), 1-45.
- Bozorgian, H. (2012). Metacognitive instruction does improve listening comprehension. *International Scholarly Research Network*, 1-6.
- Bradford, A. (2007). Motivational orientation in under-researched EFL contexts: Findings from Indonesia. *RELC Journal*, 38, 302-322.
- Braine, G. (2004). Teaching second and foreign language writing on LANs. In S. Fotos & C. M. Browne (Eds.), *New perspectives on CALL for second language classrooms* (pp. 299-316). London: Lawrence Erlbaum Associates.
- Brandl, K. (2002). Integrating Internet-based reading materials into the foreign language curriculum: From teacher-to student-centered approaches. *Language Learning & Technology*, 6(3), 87-107.
- Bristi, N. L. (2015). Bangladeshi engineering EFL learners' attitudes towards learning English: A comparison between public university and private university students. *Global Journal of Human-Social Science: (G) Linguistics & Education*, 15(11), 7-16.
- Brown, J. (2009). Self-regulatory strategies and agency in self-instructed language learning: A situated view. *The Modern Language Journal*, 93(4), 570-583.
- Brown, J. D. (1988). *Understanding research in second language learning: A teacher's guide to statistics and research design*. Cambridge: Cambridge University Press.
- Bruen, J. (2001). Strategies for success: Profiling the effective learner of German. *Foreign Language Annals*, 34, 216-225.
- Bruner, J. S. (1966). *Toward a theory of instruction*. Cambridge, Mass.: Belknap Press of Harvard University.
- Bryan, A. (2007). Barriers to integrating quantitative and qualitative research. *Journal of Mixed Methods Research*, 1, 8-22.
- Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of Information and Communication Technology (ICT) into teaching: A review of the

- literature. *International Journal of Education and Development using Information and Communication Technology*, 8(1), 136-155.
- Çakıcı, D. (2015). Autonomy in language teaching and learning process. *İnönü Üniversitesi Eğitim Fakültesi Dergisi*, 16(1), 31-42.
- Cameron, R. (2011). Mixed methods research: The five Ps framework. *The Electronic Journal of Business Research Methods*, 9(2), 96-108
- Carracelas-Juncal, C. (2012). Language learner autonomy: Policy, curriculum, classroom. *The Modern Language Journal*, 98(3), 469-471.
- Carré, P. (2005). *L'apprenance: Vers un nouveau rapport au savoir [Learninghood: Toward a new relation to knowledge]*. Paris: Dunod.
- Ceylan, N. O. (2017). The relationship between learner autonomy and language learning strategies. *Karaelmas Journal of Educational Science*, 114-125.
- Chand, Z. A. (2013). Language learning strategy use and its impact on proficiency in academic writing of tertiary students. *Social and Behavioral Science*, 118, 511-521.
- Chapelle, C. (2001). *Computer applications in second language acquisition*. Cambridge : Cambridge University Press.
- Chapelle, C. (2003). *English language learning and technology: Lectures on applied linguistics in the age of information and communication technology*. Amsterdam: John Benjamins.
- Chen, H. (2009). *A classroom quasi-experimental study to explore processing instruction*. Phd thesis. University of York.
- Chen, H. I., & Pan, H. H. (2015). Learner autonomy and the use of language learning strategies in a Taiwanese junior high school. *Journal of Studies in Education*, 5(1), 52-64.
- Chen, H. Y., & Boore, J. R. (2009). Translation and back-translation in qualitative nursing research: Methodological review. *Journal of Clinical Nursing*, 19(1-2), 234-239.
- Chen, I. J. (2002). *Language learning strategies used by high and low English proficiency students in a technology college*. Unpublished master's thesis. National Taiwan Normal University.

- Chou, M. H. (2017). A task-based language teaching approach to developing metacognitive strategies for listening comprehension. *International Journal of Listening*, 31(1), 51-70.
- Chu, T. L. H. (2014). *The conceptualisation and implementation of the learner-centred approach to TESOL at tertiary level in Vietnam: A case study*. PhD thesis. Curtin University.
- Chuin, K., & Kaur, S. (2015). Types of language learning strategies used by tertiary English majors. *TEFLIN Journal*, 26(1), 17-35.
- Chun, D. M. (2011a). Computer-assisted language learning. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 663-680). New York: Routledge.
- Chung, I. (2013). Are learners becoming more autonomous? The role of self-access centre in EFL college students' English language in Taiwan. *Asia-Pacific Education Review*, 22(4), 701-708.
- Cohen, A. D. (1998). *Strategies in learning and using a second language*. London: Longman.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. London: Routledge.
- Collentine, K. (2011). Learner autonomy in a task-based 3D world and production. *Language Learning & Technology*, 15(3), 50-67.
- Comanaru, R., & Noels, K. A. (2009). Self-determination, motivation, and the learning of Chinese as a heritage language. *Canadian Modern Language Review*, 66(1), 131-158.
- Cranker, K., & Servais, N. (2013). A move towards autonomy: Individualized education plans for effective materials use. *Studies in Self-Access Learning Journal*, 4(2), 96-124.
- Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Pearson/Merrill Education.

- Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches*. Thousand Oaks: SAGE Publications.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. California: SAGE Publications, Inc.
- Creswell, J. W. (2014). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Harlow: Pearson.
- Çubukcu, F. (2017). Learner autonomy, self regulation and metacognition. *International Electronic Journal of Elementary Education*, 2(1), 53-64.
- Cubukcuoglu, B. (2013). Factors enabling the use of technology in subject teaching. *International Journal of Education and Development using Information Communication and Technology (IJEDICT)*, 9(3), 50-60.
- Dafei, D. (2007). An exploration of the relationship between learner autonomy and English proficiency. *Asian EFL Journal*, 24, 1-23.
- Dam, L. (1995). *Learner autonomy 3: From theory to classroom practice*. Dublin: Authentik.
- Dam, L. (2008). In-service teacher education for learner autonomy. *Independence*, 43, 21-28.
- Dang, T. K. A., Nguyen, H. T. M., & Le, T. T. T. (2013). The impacts of globalisation on EFL teacher education through English as a medium of instruction: An example from Vietnam. *Current Issues in Language Planning*, 14(1), 52-72.
- Dang, T. T. (2010). Learner autonomy in EFL studies in Vietnam: A discussion from socio-cultural perspective. *English Language Teaching*, 3(2), 3-9.
- Dang, T. T. (2012). *Learner autonomy perception and performance: A study on Vietnamese students in online and offline learning environments*. PhD thesis. La Trobe University.
- Dang, T. T., & Robertson, M. (2010a). E-behaviors and e-community formation: An investigation on Vietnamese EFL students. *Asian EFL Journal. Professional Teaching Articles*, 46, 4-27.
- Dang, T. N. (2011). *Exploring CALL options for teaching EFL in Vietnam*. Master thesis. Minnesota State University.

- Dao, V. K., & Hayden, M. (2010). Reforming the governance of higher education in Vietnam. In G. Harman, M. Hayden, & T. N. Pham (Eds.), *Reforming higher education in Vietnam* (pp. 129-142). Dordrecht: Springer Science + Business Media.
- Dawson, K., & Heinecke, W. (2004). Conditions, processes and consequences of technology use: A case study. *Technology, Pedagogy and Education*, 13(1), 61-81.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self determination in human behaviour*. New York: Plenum Press.
- Develotte, C. (2016). *Towards the empowerment of the learner—students' autonomy and uses of external resources in a multimodal environment*. Paper presented at the 2nd International Conference on Telecollaboration in Higher Education, Trinity College Dublin, Ireland.
- Díaz Ramírez, M. I. (2014). Developing learner autonomy through project work in an ESP class. *HOW*, 21(2), 54-73.
- Dickinson, L. (1987). *Self-interaction in language learning*. Cambridge: Cambridge University Press.
- Dickinson, L. (1995). Autonomy and motivation: A literature review. *Systems*, 23, 165-74.
- Dickinson, M., Brew, C., & Meurers, D. (2013). *Language and computers*. Oxford: Wiley-Blackwell.
- Dina, A., & Ciornei, S. (2013). The advantages and disadvantages of computer assisted language learning and teaching for foreign languages. *Procedia: Social and Behavioral Sciences*, 76, 248-252.
- Dislen, G. (2011). Exploration of how students perceive autonomous learning in an EFL context. In D. Gardner (Ed.), *Fostering autonomy in language learning* (pp. 126-136). Gaziantep: Zirve University.
- Divaharan, S., & Lim, C. P. (2010). Secondary school socio-cultural context influencing ICT integration: A case study approach. *Australasian Journal of Educational Technology*, 26(6), 741-763.

- Do, H. T. (2006). *The role of English in Vietnam's foreign language policy: A brief history*. Paper presented at the 19th Annual EA Education Conference 2006, Perth, Australia.
- Dörnyei, Z. (2001). *Motivational strategies in the language classroom*. Cambridge: Cambridge University Press.
- Dörnyei, Z. (2007). *Research methods in applied linguistics: Quantitative, qualitative, and mixed methodologies*. Oxford: Oxford University Press.
- Dörnyei, Z., & Ushioda, E. (2011). *Teaching and researching motivation* (2nd ed.). Harlow: Longman.
- Dortins, E. (2002). *Reflections on phenomenographic process: Interview, transcription and analysis*. Paper presented at the 25th Annual Meeting of the Higher Education Research and Development Society of Australia [HERDSA], Perth, Australia.
- Doyle, L., Brady, AM., & Byrne, G. (2016). An overview of mixed methods research – revisited. *Journal of Research in Nursing*, 21(8), 623-635.
- Dreyer, C., & Nel, C. (2003). Teaching reading strategies and reading comprehension within a technology- enhanced learning environment. *System*, 31(3), 349–365.
- Duberley, J., Johnson, P., & Cassell, C. (2012). Philosophies underpinning qualitative research. In G. Symon & C. Cassell (Eds.), *Qualitative organisational research: Core methods and current challenges* (pp. 15-34). London: SAGE Publications.
- Duus, R., & Cooray, M. (2014). Together we innovate: Cross-cultural teamwork through virtual platforms. *Journal of Marketing Education*, 36(3), 244-257.
- Elizondo, L, B., & Garita, C, O. (2013). A closer look into learner autonomy in the EFL classroom. *Revista Lenguas Modernas*, 19, 325-343.
- Ellis, R. (1994). *The study of second language acquisition*. Oxford: Oxford University Press.
- Ely, D. P. (1999). Conditions that facilitate the implementation of educational technology innovations. *Educational Technology*, 39(6), 23–27.
- Eneau, J., & Develotte, C. (2012). Working together online to enhance learner autonomy: Analysis of learners' perceptions of their online experience. *ReCALL*, 24(1), 3-19.

- Fang, X., & Warschauer, M. (2004). Technology and curricular reform in China: A case study. *TESOL Quarterly*, 301-323.
- Fani, T., & Farid, G. (2011). Implications of Vygotsky's Zone of Proximal Development (ZPD) in teacher education: ZPTD and self-scaffolding. *Procedia-Social and Behavioral Sciences*, 29, 1549-1544.
- Farivar, A., & Rahimi, A. (2015). The impact of CALL on Iranian EFL learners' autonomy. *Procedia-Social and Behavioral Sciences*, 192, 644-649.
- Fazey, D., & Fazey, J. (2001). The potential for autonomy in learning. *Studies in Higher Education*, 26(3), 345-361.
- Feng, Y. (2102). *English language teachers' perceptions of computer-assisted language learning*. PhD thesis. Texas A&M University.
- Feryok, A. (2013). Teaching for learner autonomy: The teacher's role and sociocultural theory. *Innovation in Language Learning and Teaching*, 7, 213-225.
- Fewell, N. (2010). Language learning strategies and English language proficiency: An investigation of Japanese EFL university students. *TESOL Journal*, 2(1), 159-174.
- Figura, K., & Jarvis, H. (2007). Computer-based materials: A study of learner autonomy and strategies. *System*, 35(4), 448-468.
- Foster, P., & Ohta, A. S. (2005). Negotiation for meaning and peer assistance in second language classrooms. *Applied Linguistics*, 26(3), 402-430.
- Freiermuth, M. R., & Huang, H. C. (2012). Bringing Japan and Taiwan closer electronically: A look at an intercultural online synchronic chat task and its effect on motivation. *Language Teaching Research*, 16(1), 61-88.
- Fuchs, C. (2017). Learner autonomy in beginning language MOOCs (LMOOCs): The student teachers' perspective. In *Learner Autonomy and Web 2.0* (pp. 168-197). Equinox Publishing Ltd.
- Fuchs, C., Hauck, M., & Müller-Hartmann, A. (2012). Promoting learner autonomy through multiliteracy skills development in cross-institutional exchanges. *Language Learning & Technology*, 16(3), 82-102.
- Gao, X. (2004). A critical review of questionnaire use in learner strategy research. *Prospect: An Australian Journal of TESOL*, 19(3), 3-14.

- Gardner R. (1980). On the validity of affective variables in second language acquisition: Conceptual and statistical considerations. *Language Learning*, 30(2), 255-270.
- Gardner, D., & Miller, L. (2011). Managing self-access language learning: Principles and practice. *System*, 39(1), 78-89.
- Gardner, R. C., Tremblay, P. F., & Masgoret, A.-M. (1997). Towards a full model of second language learning: An empirical investigation. *Modern Language Journal*, 81, 344-362.
- George, E. S. (2011). Higher education in Vietnam: Boundaries of autonomy. In J. D. London (Ed.), *Education in Vietnam* (pp. 212–236). Singapore: ISEA.
- Gholami, H. (2016). Self assessment and learner autonomy. *Theory and Practice in Language Studies*, 6(1), 46-51.
- Gillett, A., & Hamori-Ota, V. (2017). A new tool for improving learning in professional educational programmes. In A. Horsted, P. Bartholomew, J. Branch, & C. Nyaard (Eds.), *New Innovations in Teaching and Learning in Higher Education* (pp. 187-201). Oxfordshire: Libri Publishing Ltd.
- Girmus, R. L. (2011). *How to Motivate Your Students*. Paper presented at New Mexico State University Grants RoundUp Conference, September 30-October 1, 2011, Grants, NM. Retrieved from <http://files.eric.ed.gov/fulltext/ED534566.pdf>
- Glas, K., & Cárdenas-Claros, M. S. (2013). New English cultures and learner autonomy for intrinsic motivation and democratic empowerment in the Chilean context. *English Teaching: Practice and Critique*, 12(3), 23-40.
- Goldberg, E., & Noels, K. A. (2006). Motivation, ethnic identity, and post-secondary education language choices of graduates of intensive French language programs. *The Canadian Modern Language Review*, 62(3), 423-447.
- Government of the Socialist Republic of Vietnam (2001). Chiến lược phát triển giáo dục 2001-2010. Ban hành kèm theo Quyết định số 201/2001/QĐ-TTg ngày 28 tháng 12 năm 2001 của Thủ tướng Chính phủ. Hà nội: Việt Nam. [Strategies for the Development of Education 2001-2010. Promulgated by Decision No. 201/2001/QĐ-TTg of 28/12/2001 by the Prime Minister. Hanoi: Vietnam].
- Government of the Socialist Republic of Vietnam (2005). Education Law. Hanoi: Vietnam.

- Government of the Socialist Republic of Vietnam (2008). Decision No. 1400/QĐ- TTg on the approval of the project entitled “Teaching and Learning Foreign Languages in the National Education System, Period 2008-2020”. Hanoi: Vietnam.
- Government of the Socialist Republic of Vietnam (2012). Chiến lược phát triển giáo dục 2011-2020. Ban hành kèm theo Quyết định số 711/QĐ-TTg ngày 13 tháng 6 năm 2012 của Thủ tướng Chính phủ. Hà nội: Việt Nam. [Strategies for the Development of Education 2011-2020. Promulgated by Decision No. 711/QĐ-TTg of 13/06/2012 by the Prime Minister. Hanoi: Vietnam.]
- Green, J. M., & Oxford, R. (1995). A closer look at learning strategies, L2 proficiency, and gender. *TESOL Quarterly*, 29(2), 261-297.
- Griffiee, T. D. (2012). *An introduction to second language research methods: Design and data*. Berkeley, California: TESL-EJ Publications.
- Griffiths, C. (2003). Patterns of language learning strategy use. *System*, 31, 367-383.
- Griffiths, C., & Oxford, R. L. (2014). The twenty-first century landscape of language learning strategies: Introduction to this special issue. *System*, 43(2), 1-10.
- Gündüz, N. (2005). Computer assisted language learning. *Journal of Language and Linguistic Studies*, 1(2), 193-214.
- Guryay, B. (2016). Individual variables, attitudes towards English and being a teacher: A study on prospective teachers of English. *International Journal of Psychology and Educational Studies*, 3(2), 14-23.
- Guth, S., & Helm, F. (2010). *Telecollaboration 2.0: Language, literacies, and intercultural learning in the 21st Century*. Frankfurt, Germany: Peter Lang.
- Habibian, M. (2015). The impact of training metacognitive strategies on reading comprehension among ESL learners. *Journal of Education and Practice*, (6)28, 61-69.
- Hacker, P., & Barkhuizen, G. (2008). Autonomous teachers, autonomous cognition. In T. Lamb & H. Reinders (Eds.), *Learner and teacher autonomy: Concepts realities and responses* (pp. 161-183). Philadelphia: John Benjamins Publishing Company.

- Hafner, C. A., & Miller, L. (2011). Fostering learner autonomy in English for science: A collaborative digital video project in a technological learning environment. *Language Learning & Technology, 15*(3), 68-86.
- Halcomb, E. J., & Davidson, P. M. (2006). Is verbatim transcription of interview data always necessary? *Applied Nursing Research, 19*, 38-42.
- Hamilton, M. (2013). *Autonomy and foreign language learning in a virtual Learning environment*. London: Bloomsbury Publishing.
- Hani, N. A. B. (2014). Benefits and barriers of computer assisted language learning and teaching in the Arab world: Jordan as a model. *Theory and Practice in Language Studies, 4*(8), 1609-1615.
- Hannum, W., & Briggs, L. (1982). How does instructional system design differ from traditional instruction? *Educational Technology, 22*(1), 9-14.
- Hanson-Smith, E (2000). *Technology enhanced learning environments*. Alexandria, Virginia: TESOL Inc.
- Harman, G., & Le, N, T, B. (2010). The research role of Vietnam's university. In G. Harman, M. Hayden & N. T. Pham (Eds), *Reforming Higher Education in Vietnam* (pp. 31-50). Dordrecht, the Netherlands: Springer.
- Hartnett, M., St. George, A., & Dron, J. (2014). Exploring motivation in an online context: A case study. *Contemporary Issues in Technology and Teacher Education, 14*(1), 31-53.
- Hashmi, N. A. (2016). Computer-Assisted Language Learning (CALL) in the EFL classroom and its impact on effective teaching-learning process in Saudi Arabia. *International Journal of Applied Linguistics & English Literature, 5*(2), 201-205.
- Hauck, M., & MacKinnon, T. (2016). A new approach to assessing online intercultural exchange: Open badges for soft certification of participant engagement and task execution. In R. O'Dowd & T. Lewis (Eds.), *Online intercultural exchange: Policy, pedagogy, practice* (pp. 209-234). New York: Routledge.
- Haverila, M. (2012). The Biggs and Moore model in E-Learning: The role of motivation and collaboration as moderators. *Turkish Online Journal of Distance Education, 13*(2), 169-179.

- Hayden, M., & Thiep, L. Q. (2010). Reforming higher education in Vietnam: Challenges and priorities. In G. Harman, M. Hayden & T. N. Pham (Eds.), *Vietnam's higher education system* (pp. 14-29). Springer, Dordrecht, Netherlands.
- Hayes, D. (2014). The value of learning English in Thailand and its impact on Thai: Perspectives from university students. *Asia Pacific Journal of Education*, 1-19.
- Hayta, F., & Yaprak, Z. (2013). Learner autonomy and computer technology as a facilitator of autonomous language learning. *Journal of Educational and Instructional Studies in the World*, 3(2), 57-63.
- Hedden, M. K., Worthy, R., Akins, E., Slinger-Friedman, V., & Paul, R. C. (2017). Teaching sustainability using an active learning constructivist approach: Discipline specific case studies in higher education. *Sustainability*, 9(8), 13-20.
- Herrington, J., Reeves, T. C., & Oliver, R. (2006). Authentic Tasks Online: A synergy among learner, task and technology. *Distance Education*, 27(2), 233-247.
- Higgins, D., & Gomez, A. (2014). *Teaching English studies through blended learning*. England: The Higher Education Academy.
- Higgins, J. (1983). Computer assisted language learning. *Language Teaching*, 16(2), 102-114.
- Hinze, C. (2002). *Re-Thinking 'Face': Pursuing an emic-etic understanding of Chinese mian and lian and English face*. PhD thesis. University of Queensland.
- Hoadley, C. (2012). What is a community of practice and how can we support it? In D. Jonassen & S. Land (Eds.), *Theoretical foundations of learning environments* (2nd ed.) (pp. 286-299). New York: Routledge.
- Hoadley, C., & Kilner, P. G. (2005). Using technology to transform communities of practice into knowledge-building communities. *SIGGROUP Bulletin*, 25(1), 31-40.
- Hoang, B. T. (2013). *A study of pragmatic change in the Vietnamese of second generation speakers in Queensland, Australia*. Unpublished PhD Thesis. Griffith University.
- Holec, H. (1981). *Autonomy in foreign language learning*. Oxford: Pergamon.
- Holmes, J., & Meyerhoff, M. (1999). The community of practice: Theories and methodologies in language and gender research. *Language in Society*, 28(2), 173-183.

- Horváth, I. (2005). *The cognitive components of autonomous learning in postgraduate interpreter training*. Paper presented at the 2nd Independent Learning Association Oceania Conference. Retrieved 10 November 2017 from http://independentlearning.org/ILA/ila05/ila05_papers.htm.
- Hsiao, T.-Y., & Oxford, R. L. (2002). Comparing theories of language learning strategies: a confirmatory factor analysis. *The Modern Language Journal*, 86(3), 368-383.
- Hsu, W. C. (2005). *Representations, constructs and practice of autonomy via a learner training programme in Taiwan*. PhD Thesis. University of Nottingham.
- Hu, P., & Zhang, J. (2017). A pathway to learner autonomy: A self-determination theory perspective. *Asia Pacific Education Review*, 18, 147-157.
- Hu, Y. (2016). *The role of learner autonomy for learning English out-of-class in Chinese universities*. Master thesis. University of Victoria.
- Huang, P., & Hwang, Y. (2013). An exploration of EFL learner's anxiety and E-learning environment. *Journal of Language Teaching and Research*, 4(1), 27-35.
- Hubbard, P. (2014). An invitation to CALL: Foundations of computer assisted language learning. [Website] Retrieved 25 October 2017 from <http://web.stanford.edu/~efs/callcourse/>.
- Hyte, H. (2002). *The effects of computer-based metacognitive strategy training for adult second language learners*. Master thesis. Brigham Young University.
- Ismael, H. A. (2010). The role of metacognitive knowledge in enhancing learners autonomy. *International Journal of Language and Linguistics*, 2(4), 95-102.
- Ismail, N., Hussin, S., & Darus, S. (2012). ESL students' attitudes, learning problems, and needs for online writing. *GEMA Online™ Journal of Language Studies*, 12(4), 1089-1107.
- Jácome, É. (2012). Promoting learner autonomy through teacher-student partnership assessment in an American high school: A cycle of action research. *Profile: Issues in Teachers' Professional Development*, 14(2), 145-162.
- Janson, A., Söellner, M., & Leimeister, J. M. (2017). Individual appropriation of learning management systems: Antecedents and consequences. *AIS Transaction on Human Computer Interaction*, 9(3), 173-201.

- Jeong, K.-O. (2017). Preparing EFL student teachers with new technologies in the Korean context. *Computer Assisted Language Learning*, 30(6), 488-509.
- Johnson, R. B., & Christensen, L. B. (2004). *Educational research: Quantitative, qualitative, and mixed approaches*. Boston, MA: Allyn and Bacon.
- Joshi, K. R. (2011). Learner perceptions and teacher beliefs about learner autonomy in language learning. *Journal of NELTA*, 16, 13-29.
- Kalanzadeh, G. A., Soleimani, H., & Bakhtiarvand, M. (2014). Exploring the influence of using technology on Iranian EFL students' motivation. *Procedia-Social and Behavioral Sciences*, 98, 814-823.
- Kato, S. (2005). How language learning strategies affect English proficiency in Japanese university students. *Journal of the Faculty of Human Studies Bunkyo Gakuin University*, 7(1), 239-262.
- Kaur, R., & Sidhu, G. K. (2010). Learner autonomy via asynchronous online interactions: A Malaysian perspective. *International Journal of Education and Development Using Information and Communication Technology*, 6(3), 88-110.
- Kaur, T. (2011). *Personal observations of English language learner*. Wellington: Ako Aotearoa.
- Kelly, E. L. (1955). Consistency of the adult personality. *American Psychologist*, 10(11), 659-681.
- Kenning, M-M., & Kenning, M. J. (1990). *Computers and language learning*. West Sussex: Ellis Horwood Limited.
- Khaldieh, S. A. (2000). Learning strategies and writing processes of proficient vs. less-proficient learners of Arabic. *Foreign Language Annals*, 33(5), 522-533.
- Kieu, H. K. A. (2015). *Identity in its relation to intention: Identity construction of Vietnamese students at a Vietnamese university through mixing of English and Vietnamese*. PhD Thesis. Latrobe University.
- Kirkpatrick, P., & Van Teijlingen, E. (2009). Lost in translation: Reflecting on a model to reduce translation and interpretation bias. *The Open Nursing Journal*, 3, 25-32.
- Koban-Koç, D., & Koç, S. E. (2016). Understanding learner autonomy through cognitive, metacognitive and social strategies used by English language learners in a

- computer-based classroom. *The Journal of Language Teaching and Learning*, 6(2), 58-69.
- Kohn, K., & Hoffstaedter, P. (2015). *Flipping intercultural communication practice: Opportunities and challenges for the foreign language classroom*. Paper presented at ANTWERP CALL 2015 Conference: Task design and CALL, 6–8 July 2015, at Universitat Rovira i Virgili, Tarragona, Spain.
- Kohn, K., & Hoffstaedter, P. (2017). Learner agency and non-native speaker identity in pedagogical lingua franca conversations: Insight from intercultural telecollaboration in foreign language education. *Computer Assisted Language Learning*, 30(5), 351-367.
- Kojima, H. (2012). Positive interdependence for teacher and learner autonomy: The case of the CARTA Program. In K. Irie & A. Stewart (Eds.), *Realizing autonomy: Practice and reflection in language education contexts* (pp. 167-181). Basingstoke, UK: Palgrave Macmillan.
- Komiyama, R. (2013). Factors underlying second language reading motivation of adult EAP students. *Reading in a Foreign Language*, 25(2), 149-169.
- Kormos, J., & Csizér, K. (2014). The interaction of motivation, self-regulatory strategies, and autonomous learning behavior in different learner groups. *TESOL Quarterly*, 48(2), 275-299.
- Kostina, M. V. (2011). *Exploration of student perceptions of autonomy, student-instructor dialogue and satisfaction in a web-based distance Russian language classroom: A mixed methods study*. PhD thesis. University of Iowa.
- Kozlova, I., & Priven, D. (2015). ESL teacher training in 3D virtual worlds. *Language Learning & Technology*, 19(1), 83-101.
- Kumaravadivelu, B. (2006). *Understanding language teaching: From method to postmethod*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Lai, A., Yeung, Y., & Hu, J. (2016). University student and teacher perceptions of teacher roles in promoting autonomous language learning with technology outside the classroom. *Computer Assisted Language Learning*, 29(4), 703-723.

- Lai, C. C., & Kritsonis, W. A. (2006). The advantages and disadvantages of computer technology in second language acquisition. *National Journal for Publishing and Mentoring Doctoral Student Research*, 3(1), 1-6.
- Lam, T. L. (2011). *The impact of Vietnam's globalization on national education policies and teacher training programs for teachers of English as an international language: A case study of the University of Pedagogy in Ho Chi Minh City*. PhD thesis. Alliant International University, San Diego, California, USA.
- Lamb, T. (2015). Knowledge about language and learner autonomy. In J. Cenoz, D. Gorter, & S. May (Eds.), *Language awareness and multilingualism: Encyclopedia of language and education* (pp. 1-14). Switzerland: Springer International.
- Lantolf, J. P., & Thorne, S. L. (2006). *Socio-cultural theory and the genesis of second language development*. Oxford, UK: Oxford University Press.
- Lapan, S. D., Quartaroli, M. T., & Riemer, F. J. (2011). Introduction to qualitative research. In S. D. Lapan, M. T. Quartaroli & F. J. Riemer (Eds.), *Qualitative research: An introduction to methods and designs* (pp. 3-18). Hoboken: Jossey-Bass.
- Le, L. P. (2016). *Aligning specialist English language curriculum in higher education with development imperatives and workplace communication needs in Vietnam: A case study of the Vietnamese petroleum industry*. PhD thesis. Queensland University of Technology.
- Le, V. C. (2007). A historical review of English language education in Vietnam. In Y. H. Choi & B. Spolsky (Eds.), *English Education in Asia: History and Policies* (pp. 168-180). Seoul, South Korea: Asia TEFL.
- Le, X. Q. (2013). *Fostering learner autonomy in language learning in tertiary education: An intervention study of university students in Hochiminh City, Vietnam*. PhD thesis. University of Nottingham.
- Lee, B. (2017). TELL us ESP in a flipped classroom. *Eurasia Journal of Mathematics, Science & Technology Education*, 13(8), 4995–5007.
- Lee, K. R., & Oxford, R. (2008). Understanding EFL learners' strategy use and strategy awareness. *Asian EFL Journal*, 10(1), 7-32.

- Lee, L. (2010). Fostering reflective writing and interactive exchange through blogging in an advanced language course. *ReCALL*, 22(2), 212-227.
- Lee, L. (2011). Blogging: Promoting learner autonomy and intercultural competence through study abroad. *Language Learning & Technology*, 15(3), 87-109.
- Levy, M. (1997). *Computer-assisted language learning: Context and conceptualization*. New York: Oxford University Press.
- Levy, M., & Stockwell, G. (2006). *CALL dimensions: Options and issues in computer assisted language learning*. Mahwah, NJ: Lawrence Erlbaum.
- Little, D. (1991). *Learner autonomy 1: Definitions, issues and problems*. Dublin: Authentik.
- Little, D. (1996). Freedom to learn and compulsion to interact: Promoting learner autonomy through the use of information systems and information technologies. In R. Pemberton, S. L. Edward Li, W. F. Winnie & H. D. Pierson (Eds.), *Taking control: Autonomy in language learning* (pp. 203-218). Hong Kong: Hong Kong University Press.
- Little, D. (1999) Learner autonomy is more than a Western cultural construct. In S. Cotterall & D. Crabbe (Eds.), *Learner autonomy in language learning: Defining the field and effecting change* (pp.11-18). Frankfurt: Peter Lang.
- Little, D. (2003). Learner autonomy: A fundamental principle in pedagogy and education. *Tea Magazine*, 27-31.
- Little, D. (2004). Constructing a theory of learner autonomy: Some steps along the way. In K. Mäkinen, P. Kaikkonen, & V. Kohonen (Eds.), *Future perspectives in foreign language education* (pp. 15-25). Oulu: Publications of the Faculty of Education in Oulu University 101.
- Little, D. (2007). Language learner autonomy: Some fundamental considerations revisited. *Innovation in Language Learning and Teaching*, 1(1), 14–29.
- Littlejohn, A. (1997). Self- access work and curriculum ideologies. In P. Benson & P. Voller (Eds.), *Autonomy and independence in language learning* (pp. 181-191). New York: Longman.

- Littlewood, W. (1996). Autonomy: An anatomy and a framework. *System*, 24(4), 427–435.
- Littlewood, W. (1999). Defining and developing autonomy in East Asian contexts. *Applied Linguistics*, 20(1), 71-94.
- Littlewood, W. (2001). Students' attitudes to classroom English learning: A cross cultural study. *Language Teaching Research*, 5(1), 3-28.
- Littlewood, W. (2007). Communicative and task-based in language teaching in East Asian classrooms. *Language Teaching*, 40, 243-249.
- Liu, H. (2015). Learner autonomy: The role of motivation in foreign language learning. *Journal of Language Teaching and Research*, 6(6), 1165-1174.
- Liu, H. (2015). Use of learning strategies by EFL learners: A study of how it related to language proficiency and learner autonomy. *Internal journal of English Linguistics*, 5(2), 21-35.
- Liu, H. J. (2015). Learner autonomy: The role of motivation in foreign language learning. *Journal of Language Teaching and Research*, 6(6), 1165-1174.
- Liu, H. J., & Chang, C. H. (2013). A study on language learning strategy use and its relation to academic self-concept: The case of EFL students in Taiwan. *Journal of Language Teaching and Research*, 4(2), 260-268.
- Liu, Q., & Chao, C-C. (2018). CALL from an ecological perspective: How a teacher perceives affordance and fosters learner agency in a technology-mediated language classroom. *ReCALL*, 30(1), 68-87.
- Louis, R. S. (2006). *Helping students become autonomous learner: Can technology help?* Retrieved 10 April 2017 from http://www.tewtjournal.org/VOL%206/ISSUE%203/03_HELPINGSTUDENTS.pdf.
- Ma, F. (2015). A review of research methods in EFL education. *Theory and Practice in Language Studies*, 5(3), 566-571.
- Ma, Z. (2012). Motivating Chinese students by fostering learner autonomy in language learning. *Theory and Practice in Language Studies*, 2(4), 838-842.

- Mallik, S. (2017). Motivation as a promoting determinant in second and foreign language classroom: A review. *European Journal of Foreign Language Teaching*, 2(1), 90-102.
- Miller, L., & Ng, R. (1996). Autonomy in the classroom: Peer assessment. In R. Pemberton, E. S. L. Li, W. W. F. Or & H. D. Pierson (Eds.), *Taking control: Autonomy in language learning* (pp. 237-248). Hong Kong: Hong Kong University Press.
- Ministry of Education and Training. (2014). Khung năng lực ngoại ngữ 6 bậc dùng cho Việt Nam [Framework of reference for languages of six levels applied in Vietnam]. Retrieved from <http://thuvienphapluat.vn/van-ban/Giaoduc/Thong-tu-01-2014-TT-BGDDT-Khung-nang-luc-ngoai-ngu-6-bac-VietNam-220349.aspx>
- MoET. (2008b). Quyết định về việc phê duyệt đề án "Dạy và học ngoại ngữ trong hệ thống giáo dục quốc dân giai đoạn 2008 - 2020. N0 1400/ QD - TTg. [Decision N0 1400/ QD - TTg on the approval of the project "Teaching and learning foreign languages in the national education system in the period 2008 - 2020]. Hanoi, Vietnam: Vietnam National Politic Publications.
- Mohd Jaafar, N., & Thang, S. M. (2013). Revisiting autonomy and attributions: A case in a Malaysian university. *GEMA® Online Journal of Language Studies*, 13, 41-64.
- Mollaie, F., & Riasati, M. J. (2013). Teachers' perceptions of using technology in teaching EFL. *International Journal of Applied Linguistics & English Literature*, 2(1), 13-22.
- Morrison, K. (2008). Educational philosophy and the challenge of complexity theory. In M. Mason (Ed.), *Complexity theory and the philosophy of education* (pp. 16-31). West Sussex, UK: Wiley Blackwell.
- Mubaslat, M. (2012). The effect of using educational games on the students' achievement in English language for the primary stage. ERIC document (ED529467).
- Muchlis, M. (2015). The implementation of technology approaches to develop learners' autonomy in learning English. *AL-TA'LIM JOURNAL*, 22(3), 276-285.
- Mukhallafi, T. R. A. (2014). *Computer assisted language learning for learning English in Saudi Arabia*. PhD thesis. University of Sydney.

- Murray, G. (2014). The social dimensions of learner autonomy and self-regulated learning. *Studies in Self-Access Learning Journal*, 5(4), 320-341.
- Murray, G. (2017). Autonomy in the time of complexity: Lessons from beyond the classroom. *Studies in Self-Access Learning Journal*, 8(2), 116-134.
- Nakata, Y. (2014). Self-regulation: Why is it important for promoting learner autonomy in the school context? *Studies in Self-Access Learning Journal*, 5(4), 342-356.
- Nami, F., Marandi, S., & Sotoudehnama, E. (2016). CALL teacher professional growth through lesson study practice: An investigation into EFL teachers' perceptions. *Computer Assisted Language Learning*, 29(4), 658-682.
- Nasihah, M., & Cahyono, B. (2017). Language learning strategies, motivation, and writing achievement of Indonesian EFL students. *Arab World English Journal*, 8(1), 56-70.
- Ng, S. F., & Confessore, G. J. (2010). The relationship of multiple learning styles to levels of learner autonomy. *International Journal of Self-directed Learning*, 7(1), 1-13.
- Ngan, N. T. (2011). *West wind blows: Voices of Vietnamese teachers and students of English: A case study of Nha Trang university*. PhD Thesis. Ohio University.
- Ngo, T. H. (2015). *An investigation into students' motivation to learn English in higher education in Vietnam*. PhD Thesis. Queensland University of Technology.
- Nguyen, N. (2012). How English has displaced Russian and other foreign languages in Vietnam since "Doi Moi". *International Journal of Humanities and Social Science*, 2(23), 259-266.
- Nguyen, N. H. (2013). *Language policies and technology application: A panorama from Vietnam*. Paper presented at GloCALL 2013, Danang, Vietnam.
- Nguyen, N. T. (2017). Thirty years of English language and English education in Vietnam. *English Today*, 33(1), 33-35.
- Nguyen, T. C. L. (2009). *Learner autonomy and EFL learning at the tertiary level in Vietnam*. PhD thesis. Victoria University of Wellington.
- Nguyen, T. C. N. (2018). *Aligning English for Specific Purposes (ESP) curriculum with industry need: Language practices for Vietnam's globalised workplaces*. PhD thesis. Queensland University of Technology.

- Nguyen, T. N (2014). *Learner autonomy in language learning: Teachers' beliefs*. PhD thesis. Queensland University of Technology.
- Nguyen, V. L. (2011). *Dynamic conceptions of input, output and interaction: Vietnamese EFL lecturers learning second language acquisition theory*. PhD thesis. University of Waikato.
- Nicholson, S. J. (2013). Influencing motivation in the foreign language classroom. *Journal of International Education Research*, 9(3), 277-286.
- Nikoopour, J., & Hajian, M. (2015). An exploration on the relationship among learners' autonomy, language learning strategies and big-five personality traits. *Journal of Humanities and Social Science*, 20(2), 66-71.
- Noels, K. A., Pelletier, L. G., Clément, R., & Vallerand, R. J. (2000). Why are you learning a second language? Motivational orientations and self-determination theory. *Language Learning*, 53(S1), 57-85.
- Nunan, D. (1997). Designing and adapting materials to encourage learner autonomy. In P. Benson & P. Voller (Eds.), *Autonomy and independence in language learning* (pp. 192-203). London: Longman.
- Nunan, D. (2003). Nine steps to learner autonomy. In *Proceedings of the Symposium* (pp. 193-204). Stockholm, Sweden. Retrieved from http://www.andrasprak.su.se/polopoly_fs/1.84007.1333707257!/menu/standard/file/2003_11_Nunan_eng.pdf.
- Nurjannah, I., Mills, J., Park, P., & Usher, K. (2014) Conducting a grounded theory study in a language other than English: Procedure for ensuring the integrity of translation. *SAGE Open*, 1-10.
- OECD (2008). *21st Century learning: Research, innovation and policy. Directions from recent OECD analysis*. Center for Educational Research and Innovation. Retrieved 19 November 2017, from <http://www.oecd.org/site/educeri21st/40554299.pdf>.
- Oga-Baldwin, W. L. Q., Nakata, Y., Parker, P., & Ryan, R. M. (2017). Motivating young language learners: A longitudinal model of self-determined motivation in elementary school foreign language classes. *Contemporary Educational Psychology*, 49, 140–150.

- Ownston, R. (1997). *The teaching Web: A guide to the World Wide Web for all teachers*. Retrieved 28 August 2017 from: <http://www.edu.yorku.ca/rowston/chapter.html>.
- Oxford, R. (1989). Strategy inventory for language learning. Retrieved 11 March 2017 from http://ell.phil.tu-chemnitz.de/cing/frontend/questionnaires/oxford_quest.php
- Oxford, R. (1990). *Language learning strategies: What every teacher should know*. New York: Newbury House/Harper and Row.
- Oxford, R. (2001). Language learning strategies. In R. C. Nunan (Ed.), *The Cambridge guide to teaching English to speakers of other languages* (pp. 166-172). Cambridge: Cambridge University Press.
- Oxford, R. (2003). Language learning styles and strategies: An overview. *Proceedings of GALA (Generative Approaches to Language Acquisition) Conference*, 1-25. Retrieved 9 October 2016 from <http://web.ntpu.edu.tw/~language/workshop/read2.pdf>
- Oxford, R. (Ed.). (1996). *Language learning strategies around the world: Cross cultural perspectives (Technical report)*. Honolulu, HI: University of Hawaii Press.
- Oxford, R. L., & Burry-Stock, J. A. (1995). Assessing the use of language learning strategies worldwide with the ESL/EFL version of the strategy inventory for language learning. *System*, 23(2), 153-175.
- Oxford, R. L., Griffiths, C., Longhini, A., Cohen, A. D., Macaro, E., & Harris, V. (2014). Experts' personal metaphors and similes about language learning strategies. *System*, 43(2), 11-29.
- Palfreyman, D. (2003). Introduction: Culture and learner autonomy. In D. Palfreyman & R. C. Smith (Eds.), *Learner autonomy across cultures: Language education perspectives* (pp. 1-19). Basingstoke: Palgrave Macmillan.
- Pathan, M. M. (2012). Computer Assisted Language Testing [CALT]: Advantages, implications and limitations. *Research Vistas*, 1(4), 30-45.
- Pham, H. H. (1999). *The key socio-cultural factors that work against success in tertiary English language training programs in Vietnam*. Paper presented at the 4th International Conference on Language and Development, Ha Noi. Retrieved 17 November 2017 from http://www.languages.ait.ac.th/hanoi_proceedings/hiep.html

- Pham, N. T. (2010). The higher education reform agenda: A vision for 2020. In G. Harman, M. Hayden & N. T. Pham (Eds.), *Reforming higher education in Vietnam: Challenges and priorities* (1st ed., pp. 51-64). London: Springer.
- Pham, N. T. (2015). *Interpersonal interaction: A study of an online English language learning environment at a Vietnamese university*. PhD thesis. Victoria University.
- Phan, H. L., Dat, B., & Ha, V. H. (2014). Language policies in modern-day Vietnam: Changes and challenges. In S. Peter & T. Ruanni (Eds.), *Language, identities and education in Southeast Asia*, (pp. 232-244). Hampshire and New York: Palgrave.
- Phan, T. T. H. (2010). *Factors affecting the motivation of Vietnamese technical English majors in their English studies*. PhD Thesis. University of Otago, New Zealand.
- Phan, T. T. T. (2015). *Towards a potential model to enhance language learner autonomy in the Vietnamese higher education context*. PhD thesis. Queensland University of Technology.
- Piaget, J. (1980). The psychogenesis of knowledge and its epistemological significance. In M. Piatelli-Palmarini (Ed.), *Language and learning* (pp. 23-34). Cambridge, MA: Harvard University Press.
- Pop, A. (2010). The impact of the new technologies in foreign language instruction our experience. *Procedia-Social and Behavioral Sciences*, 2(2), 1185-1189.
- Raby, F. (2007). A triangular approach to motivation in Computer Assisted Autonomous Language Learning (CAALL). *ReCALL*, 19(2), 181-201.
- Rahimi, M., & Katal, M. (2012). Metacognitive strategies awareness and success in learning English as a foreign language: An overview. *Procedia-Social and Behavioral Sciences*, 31, 73–81.
- Rahimpour, M. (2011). Computer assisted language learning (CALL). *International Journal of Instructional Technology & Distance Learning*, 8(1), 71-76.
- Rallis, S. F., & Rossman, G. B. (2009). Ethics and trustworthiness. In J. Heigham & R. A. Croker (Eds.), *Qualitative research in applied linguistics: A practical introduction* (pp. 263-287). Basingstoke, Hampshire: Palgrave Macmillan.

- Ramsay, G. (2005). Computer-mediated communication and culture: A comparison of 'Confucian-heritage' and 'Western' learner attitudes to asynchronous e-discussions undertaken in an Australian higher educational setting. *E-Learning*, 2(3), 263-75.
- Raya, J. M., & Sircu, L. (2013). *Challenges in teacher development: Learner autonomy and intercultural competence*. Frankfurt: Peter Lang GmbH.
- Rees-Miller, J. (1993). A critical appraisal of learner training: Theoretical bases and teaching implications. *TESOL Quarterly*, 27(4), 679-687.
- Reeve, J. (2002). Self-determination theory applied to educational settings. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 183-203). Rochester, NY: University Of Rochester Press.
- Reinders, H., & Hubbard, P. (2013). CALL and learner autonomy: Affordances and constraints. In M. Thomas, H. Reinders, & M. Warschauer (Eds.), *Contemporary computer assisted language learning* (pp. 359-375). London: Continuum Books.
- Reinders, H., & White, C. (2016). 20 years of autonomy and technology: How far have we come and where to next? *Language Learning & Technology*, 20(2), 143–154.
- Rezaei, A. R., Keivanpanah, S., & Najibi, S. (2015). EFL learners' motivational beliefs and their use of learning strategies. *Applied Research on English Language*, 4(1), 1-17.
- Ribbe, E., & Bezanilla, M. J. (2013). Scaffolding learner autonomy in online university courses. *Digital Education Review*, 24, 98-112.
- Richards, J. C., & Schmidt, R. (2002). *Longman dictionary of language teaching & applied linguistics* (3rd ed.). Essex: Pearson Education Limited.
- Robertson, E. B., Ladewig, B. H., Strickland, M. P., & Boschung, M. D. (1987). Enhancement of self-esteem through the use of computer-assisted instruction. *The Journal of Educational Research*, 80(5), 314-316.
- Rost, M. (2002). New technologies in language education: Opportunities for professional growth. Retrieved 25 May 2017, from http://www.longman.com/ae/multimedia/pdf/MikeRost_PDF.pdf
- Ryan, G. W., & Bernard, H. R. (2003). Techniques to identify themes. *Field Methods*, 15(1), 85–109.

- Saidat, A. M. (2010). Language attitudes: The case of Jordan. *International Journal of Academic Research*, 2, 235–243.
- Sakai, S., Takagi, A., & Chu, M.-P. (2010). Promoting learner autonomy: Student perceptions of responsibilities in a language classroom in East Asia. *Educational Perspectives*, 43, 12-27.
- Sanderlowski, M. (2000). Focus on research methods: Combining qualitative and quantitative sampling, data collection, and analysis techniques in mixed- method studies. *Research in Nursing and Health*, 23, 246-255.
- Scharle, Á., & Szabó, A. (2000). *Learner autonomy: A guide to developing learner responsibility*. Cambridge: Cambridge University Press.
- Schmenk, B. (2005). Globalizing learner autonomy. *TESOL Quarterly*, 39(1), 107-118.
- Schwienhorst, K. (2003). Neither here nor there? Learner autonomy and intercultural factors in CALL environments. In D. Palfreyman & R. Smith (Eds.), *Learner autonomy across cultures: Language education perspectives* (pp. 164-179). New York: Palgrave Macmillan.
- Scotland, J. (2012). Exploring the philosophical underpinnings of research: Relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms. *English Language Teaching*, 5(9), 9-16.
- Sedhu, D. S., Mohd, S., & Harun, S. (2017). The use of metacognitive strategies by ESL tertiary learners in learning IELTS listening course. *International Journal of English Language and Literature Studies*, 6(1), 11-24.
- Selwyn, N., Gorard, S., & Williams, S. (2001). Digital divide or digital opportunity? The role of technology in overcoming social exclusion in U.S. education. *Educational Policy*, 15, 258-277.
- Shao, H., & Wu, Z. (2007). Nurturing language learner autonomy through caring pedagogic practice. In A. Barfield & S.H. Brown (Eds.), *Reconstructing autonomy in language education: Inquiry and innovation* (pp. 95-108). New York: Palgrave Macmillan.
- Sheerin, S. (1991). State of the art: Self-access. *Language Teaching*, 24(3), 153-157.

- Sheridan, G. (2010). *Viet Nam: Preparing the higher education sector development project*. Hanoi: Asia Development Bank.
- Sheu, C.-M. (2009). An investigation into English learning strategies of ability-grouped freshman students in a national technological university. *Studies in English Language and Literature*, 23, 23-39.
- Shi, H. (2017). Learning strategies and classification in education. *Institute for Learning Styles Journal*, 7, 24-36.
- Sinclair, B. (2000). Learner autonomy: The next phase. In I. Mcgrath, B. Sinclair & T. Lamb (Eds.), *Learner autonomy, teacher autonomy: Future directions* (pp. 15-23). London: Longman.
- Smith, K., & Craig, H. (2013). Enhancing the autonomous use of CALL: A new curriculum model in EFL. *CALICO Journal*, 30(2), 252-278.
- Smith, R. C. (2000). Starting with ourselves: Teacher-learner autonomy in language learning. In B. Sinclair, I. McGrath, & T. E. Lamb (Eds.), *Learner autonomy, teacher autonomy: Future directions* (pp. 89-99). Harlow: Addison Wesley Longman.
- Smith, R., & Ushioda, E. (2009). Autonomy: Under whose control? In R. Pemberton, S. Toogood & A. Barfield (Eds.), *Maintaining control: Autonomy and language learning* (pp. 241-253). Hong Kong: Hong Kong University Press.
- Snodin, N. S. (2013). The effects of blended learning with a CMS on the development of autonomous learning: A case study of different degrees of autonomy achieved by individual learners. *Computers & Education*, 61, 209-216.
- Spratt, M., Humphreys, G., & Chan, V. (2002). Autonomy and motivation: Which comes first? *Language Teaching Research*, 6(3), 245-266.
- Stacke, E. (2007). Spotlight on blended language learning: A frontier beyond learner autonomy and computer assisted language learning. In *Proceedings of the Independent Learning Association 2007 Japan conference: Exploring theory, enhancing practice: Autonomy across the disciplines*. Chiba, Japan: Kanda University of International Studies.
- Stockwell, G. (2012a). Working with constraints in mobile learning: A response to Ballance. *Language Learning & Technology*, 16(3), 24-31.

- Stockwell, G. (2012b). Mobile-assisted language learning. In M. Thomas, H. Reinders, & M. Warschauer (Eds.), *Contemporary Computer-Assisted Language Learning* (pp. 201–216). London, UK: Continuum Books.
- Subramaniam, B., & Palanisamy, K. (2014). The usage of language learning strategies in Malaysian private secondary schools. *Advances in Language and Literacy Studies*, 5(4), 96-101.
- Subramaniam, G. (2008). Confronting Asian concerns in engaging learners to online education. *International Education Studies*, 1(4), 10–18.
- Sutton, J., & Austin, Z. (2015). Qualitative research: Data collection, analysis, and management. *The Canadian Journal of Hospital Pharmacy*, 68(3), 226-231.
- Sydorenko, T., Daurio, P., & L. Thorne, S. (2017). Refining pragmatically-appropriate oral communication via computer-simulated conversations. *Computer Assisted Language Learning*, 30(5),1-24.
- Tafoli, D., & Golshan, N. (2014). Review of computer-assisted language learning: History, merits and barriers. *International Journal of Language and Linguistics*, 2(5-1), 32-38.
- Tashakkori, A., & Creswell, J. W (2007). The new era of mixed methods. *Journal of Mixed Methods Research*, 1, 3-7.
- Tassinari, M. G. (2010). *Autonomes Fremdesprachenlernen: Komponenten, Kompetenzen, Strategien*. Frankfurt am Main: Peter Lang.
- Tayebinik, M., & Puteh, M. (2012). The significance of self-esteem in Computer Assisted Language Learning (CALL) environment. *Procedia-Social and Behavioral Sciences*, 66, 499-506.
- Taylor, A., & Malarcher, C. (2013). *Starter TOEIC*. Ho Chi Minh City: Nha Xuat Ban Tre.
- Taylor, R. (Ed.). (1980). *The computer in the school: Tutor, tool, tutee* (pp. 1-10). New York: Teachers College Press.
- Teddie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral science*. Los Angeles: Sage.

- Temple, B., & Young, A. (2004). Qualitative research and translation dilemmas. *Qualitative Research, 4*, 161-178.
- Tetik, N. (2016). Tourism guidance students' attitudes towards the English language course. *International Journal of Education and Research, 4*(3), 271-284.
- Thanasoulas, D. (2000). What is learner autonomy and how can it be fostered. *The Internet TESL Journal, 6*(11), 37-48.
- Toyoda, E. (2001). Exercise of learner autonomy in project-oriented CALL. *CALL-EJ Online, 2*(2).
- Tran, T. L. (2007). Learners' motivation and identity in the Vietnamese EFL writing classroom. *English teaching: Practice and Critique, 6*(1), 151-163.
- Tran, T. T. (2013a). Is the learning approach of students from the Confucian heritage culture problematic? *Educational Research for Policy and Practice, 12*(1), 57-65.
- Tsai, Y., & Talley, P. C. (2014). The effect of a course management system (CMS) supported strategy instruction on EFL reading comprehension and strategy use. *Computer Assisted Language Learning, 27*(5), 422-438.
- Turner, J. A. (2009). *Self-study of teaching practice: Metacognitive strategies that enhance student learning*. Master thesis. California State University Monterey Bay.
- Turuk, M. C. (2008). The relevance and implications of Vygotsky's sociocultural theory in the second language classroom. *Annual Review of Education, Communication & Language Sciences, 5*, 244-262.
- Uchidiuno, J., Ogan, A., Yarzebinski, E., & Hammer, J. (2016). Understanding ESL Students' Motivations to Increase MOOC Accessibility. In *Proceedings of the Third (2016) ACM Conference on Learning@ Scale*, pp. 169-172.
- Ushioda, E. (2000). Tandem language learning via email: From motivation to autonomy. *ReCALL, 12*(2), 121-128.
- Ushioda, E. (2005). The role of students' attitudes and motivation in second language learning in online language courses. *CALICO Journal, 23*(1), 49-78.
- Ushioda, E. (2011). Why autonomy? Insights from motivation theory and research. *Innovation in Language Learning and Teaching, 5*(2), 221-232.

- Üstünlüoğlu, E. (2009). Autonomy in language learning: Do students take responsibility for their learning? *Journal of Theory and Practice in Education*, 5(2), 148–169.
- Vaishnav, R. S. (2013). Learning style and academic achievement of secondary school students. *Voice of Research*, 1(4), 1-4.
- Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. In M. Zanna (Ed.), *Advances in experimental social psychology* (pp. 271-360). New York: Academic Press.
- van Daal, V. H. P., & Reitsma, P. (2000). Computer-assisted learning to read and spell: Results from two pilot studies. *Journal of Research in Reading*, 23(2), 181-193.
- Vieira, F., Barbosa, I., Paiva, M., & Fernandes, S. (2008). Teacher education towards teacher (and learner) autonomy. In T. Lamb & H. Reinders (Eds.), *Learner and teacher autonomy: Concepts realities and responses* (pp. 216-235). Philadelphia: John Benjamins Publishing Company.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Vygotsky, L. S. (1987). Thinking and speech. In R. W. Rieber & A. S. Carton (Eds.), *The collected works of L. S. Vygotsky (Vol 1): Problems of general psychology* (pp. 39-285). New York: Plenum Press.
- Wachob, P. (2006). Methods and materials for motivation and learner autonomy. *Reflection on English Language Teaching*, 5(1), 93-122.
- Wang, H. (2003). Individualism and collectivism in ESL/EFL classrooms. *Contact*, 29(3), 55-60.
- Wang, H. (2014). Learner autonomy based on constructivism learning theory. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 8(5), 1552-1554.
- Wang, K. H., Wang, T. H., Wang, W. L., & Huang, S. C. (2006). Learning styles and formative assessment strategy: Enhancing student achievement in Web-based learning. *Journal of Computer Assisted Learning*, 22(3), 207–217.

- Warschauer, M. (2004). Technological change and the future of CALL. In S. Fotos & C. M. Browne (Eds.), *New perspectives on CALL for second language classrooms* (pp. 15-26). Mahwah, NJ: Lawrence Erlbaum Associates.
- Warschauer, M., & Healey, D. (1998). Computers and language learning: An overview. *Language Teaching*, 31, 51-71.
- Warschauer, M., & Healey, D. (1998). Computers and language learning: An overview. *Language teaching*, 31(2), 57-71.
- Wei, J., Chen, J., & Adawu, A. (2014). Teaching ESL beginners metacognitive writing strategies through multimedia software. *The CATESOL Journal*, 26(1), 60-75.
- Weinstein, S., & Preiss, D. (2017). Scaffolding to promote critical thinking and learner autonomy among pre-service education students. *Journal of Education and Training*, 4(1), 69-87.
- Wenden, A. (1991). *Learner strategies for learner autonomy*. Hertfordshire: Prentice Hall International Ltd.
- Wenden, A. (1998). *Learner strategies for learner autonomy*. Great Britain: Prentice Hall.
- Wenger, E. (2011). Communities of practice: A brief introduction. Retrieved 4 November 2016, from <https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/11736/A%20brief%20introduction%20to%20CoP.pdf?sequence=1>.
- Wenger, E., McDermott, R. A., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Boston: Harvard Business School Press.
- Wenger, E., White, N., & Smith, J. D. (2010). *Digital habitats: Stewarding technology for communities*. Portland, OR: CPSquare.
- Wharton, G. (2000). Language learning strategy use of bilingual foreign language learners in Singapore. *Language Learning*, 50, 203-243.
- White, H., & Sabarwal, S. (2014). *Quasi-experimental design and methods. Methodological briefs: Impact evaluation 8*. Florence: NICEF Office of Research.
- Williams, K. C., & Williams, C. C. (2011). Five key ingredients for improving student motivation. *Research in Higher Education Journal*, 13, 121-123.

- Williams, M., & Burden, R. L. (1997). *Psychology for language teachers: A social constructivist approach*. Cambridge: Cambridge University Press.
- Winne, P. H., & Marx, R. W. (1989). A cognitive-processing analysis of motivation within classroom tasks. *Research on Motivation in Education*, 3, 223-257.
- World Bank. (2006). *Education in Vietnam: Development history, challenges and solutions*. Washington, DC.
- Wright, S. (2002). Language education and foreign relations in Vietnam. In J. W. Tollefson (Ed.), *Language policies in education* (pp. 225-244). Mahwah, NJ: Lawrence Erlbaum Associates.
- Wudthayagorn, J. (2000). *Attitudes and motivation of elementary school students in a Japanese FLES programme*. Unpublished doctoral dissertation. University of Pittsburgh.
- Yan, G. (2007). Autonomous English learning among postgraduate EFL learners in China: A study of attitudes and behaviors. *The Journal of Asia TEFL*, 4(3), 47-70.
- Yang, S.-H. (2009). Using blogs to enhance critical reflection and community of practice. *Educational Technology & Society*, 12(2), 11-21.
- Yashima, T. (2009). International posture and the ideal L2 self in the Japanese EFL context. In Z. Dörnyei & E. Ushioda (Eds.), *Motivation, language identity and the L2 self* (pp. 144-163). Bristol: Multilingual Matters.
- Yates, A. (2013). Online teacher education: A case study from New Zealand. In R. Hartshorne, T. Heafner, & T. Petty (Eds.), *Teacher education programs and online learning tools: Innovations in teacher preparation* (pp. 98-119). Hershey, PA: IGI Global.
- Ying, F. (2002). Promoting learner autonomy through CALL projects in China's EFL context. *Teaching English with Technology*, 2(5), 3-38.
- You, C., & Dörnyei, Z. (2014). Language learning motivation in China: Results of a large-scale stratified survey. *Applied Linguistics*, 37(4), 1-26.
- Young, M. Y. C. (1997). A serial ordering of listening comprehension strategies used by advance ESL learners in Hong Kong. *Asian Journal of English Language Teaching*, 7, 35-53.

- Yuliani, Y., & Lengkanawati, N. S. (2017). Project-based learning in promoting learner autonomy in an EFL classroom. *Indonesia Journal of Applied Linguistics*, 7(2), 285-293.
- Zamfirov, M., & Saeva, S. (2013). Computer enhanced English language tool for students with hearing loss: A Bulgarian study. *Educational Technology & Society*, 16(3), 259–273.
- Zarei, A. A., & Rahami, H. (2015). The relationship between Iranian EFL learners' belief about language learning and language learning strategy use. *Journal on English Language Teaching*, 5(1), 1-10.
- Zarei, A., & Elakaei, A. (2012). Motivation and attitudes as predictors of learner autonomy. *Prime Research on Education*, 2(9), 353-364.
- Zarei, A., & Hashemipour, M. (2015). The effect of computer assisted language instruction on improving EFL learners' autonomy and motivation. *Journal of Applied Linguistic*, 1(1), 40-58.
- Zarei, A., & Zarei, N. (2015). On the effect of language proficiency on learners' autonomy and motivation. *Journal of English Language and Literature*, 3(2), 263-270.
- Zarrabi, F. (2016). The impact of listening strategy training on the metacognitive listening strategies awareness of different learner types. *English Language Teaching*, 9(5), 154-165.
- Zhu, C. (2010). Teacher roles and adoption of educational technology in the Chinese context. *Journal for Educational Research Online*, 2(2), 72-86.

Appendix 3A

English version

QUESTIONNAIRE FOR STUDENTS

(Phase 1)

Part I: Demographic information

Read the following information and answer by making a cross (x) in the appropriate box or write in the space.

1. Gender: Male Female
2. Grade level: First year Second year Third year
3. General computer proficiency (MS Office, web, chat, email, blog...):
 very bad bad ok good very good
4. Age: 18-19 20-21 over 21
5. Major:
6. School:

Part II: Language learning strategies

Please read the sentences and answer in terms of how well the statement describes your use of language learning strategies. Please indicate the degree of your agreement by putting a cross in the column that corresponds to your choice for each item, using the scale below.

1. Never or almost never true 2. Occasionally true 3. Sometimes true
4. Usually true 5. Always or almost always true

Memory						
1	I think of the relationship between what I already know and new things I learn in English.	1	2	3	4	5
2	I use new English words in a sentence so that I can remember them.	1	2	3	4	5
3	I connect the sound of a new English word and an image or picture of the word to help me remember the word.	1	2	3	4	5
4	I remember a new English word by a mental picture of a situation in which the word might be used.	1	2	3	4	5
5	I use rhymes to remember new English words.	1	2	3	4	5
6	I use flashcards to remember new English words.	1	2	3	4	5
7	I physically act out new English words.	1	2	3	4	5
8	I review English lessons often.	1	2	3	4	5
9	I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign.	1	2	3	4	5
Cognitive						
10	I say or write new English words several times.	1	2	3	4	5

11	I try to speak like native English speakers.	1	2	3	4	5
12	I practise the sounds of English.	1	2	3	4	5
13	I use the English words I know in different ways.	1	2	3	4	5
14	I start conversations in English.	1	2	3	4	5
15	I watch English language TV shows spoken in English or go to the movies spoken in English.	1	2	3	4	5
16	I read for pleasure in English.	1	2	3	4	5
17	I write notes, messages, letters or reports in English.	1	2	3	4	5
18	I first skim-read an English passage (read over the passage quickly), then go back and read carefully.	1	2	3	4	5
19	I look for words in my own language that are similar to new words in English.	1	2	3	4	5
20	I try to find patterns in English.	1	2	3	4	5
21	I find the meaning of an English word by dividing it into parts that I understand.	1	2	3	4	5
22	I try not to translate word -for- word.	1	2	3	4	5
23	I make summaries of information that I hear or read in English.	1	2	3	4	5
Compensation						
24	To understand unfamiliar English words, I make guesses.	1	2	3	4	5
25	When I can't think of a new word during a conversation in English, I use gestures.	1	2	3	4	5
26	I make up new words if I do not know the right ones in English.	1	2	3	4	5
27	I read English without looking up every new word.	1	2	3	4	5
28	I try to guess what the other person will say next in English.	1	2	3	4	5
29	If I can't think of an English word, I use a word or phrase that means the same thing.	1	2	3	4	5
Metacognitive						
30	I try to find as many ways as I can to use English.	1	2	3	4	5
31	I notice my English mistakes and use that information to help me do better.	1	2	3	4	5
32	I pay attention when someone is speaking English.	1	2	3	4	5
33	I try to find out how to be a better learner of English.	1	2	3	4	5
34	I plan my schedule so that I will have enough time to study English.	1	2	3	4	5
35	I look for people I can talk to in English.	1	2	3	4	5
36	I look for opportunities to read as much as possible in English.	1	2	3	4	5
37	I have clear goals for improving my English skills.	1	2	3	4	5
38	I think about my progress in learning English.	1	2	3	4	5
Affective						
39	I try to relax whenever I feel afraid of using English.	1	2	3	4	5
40	I encourage myself to speak English even when I am afraid of making a mistake.	1	2	3	4	5
41	I give myself a reward or treat when I do well in English.	1	2	3	4	5
42	I notice if I am tense or nervous when I am studying or using English.	1	2	3	4	5
43	I write down my feelings in a language diary.	1	2	3	4	5
44	I talk to someone else about how I feel when I am learning English.	1	2	3	4	5
Social						
45	If I do not understand something in English, I ask the other person to slow down or say it again.	1	2	3	4	5
46	I ask English speakers to correct me when I talk.	1	2	3	4	5
47	I practise English with other students.	1	2	3	4	5
48	I ask for help from English speakers.	1	2	3	4	5

49	I ask questions in English.	1	2	3	4	5
50	I try to learn about the culture of English speakers.	1	2	3	4	5

Part III: Attitudes towards learning English

Please read the sentences and answer in terms of how well the statement describes your attitudes towards learning English. Please indicate the degree of your agreement by putting a cross in the column that corresponds to your choice for each item, using the scale below.

1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

Positive attitudes						
1	Learning English is really great.	1	2	3	4	5
2	I really enjoy learning English.	1	2	3	4	5
3	English is an important part of the school programme.	1	2	3	4	5
4	I plan to learn as much English as possible.	1	2	3	4	5
5	I love learning English.	1	2	3	4	5
Negative attitudes						
6	I hate English.	1	2	3	4	5
7	I would rather spend my time on subjects other than English.	1	2	3	4	5
8	Learning English is a waste of time.	1	2	3	4	5
9	I think that learning English is dull.	1	2	3	4	5
10	When I leave school, I shall give up the study of English entirely because I am not interested in it.	1	2	3	4	5

Part IV: Motivation to learn English

Please read the sentences and answer in terms of how well the statement describes your motivation to learn English. Please indicate the degree of your agreement by putting a cross (x) in the column that corresponds to your choice for each item, using the scale below

1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

Intrinsic Motivation-Knowledge						
1	I study English for the pleasure that I experience in knowing more about the literature of the second language group.	1	2	3	4	5
2	I study English for the satisfied feeling I get in finding out new things.	1	2	3	4	5
3	I study English because I enjoy the feeling of acquiring knowledge about the English language community and their way of life.	1	2	3	4	5
Intrinsic Motivation-Accomplishment						
4	I study English for the pleasure I experience when surpassing myself in my second language studies.	1	2	3	4	5
5	I study English for the enjoyment I experience when I grasp a	1	2	3	4	5

	difficult construct in English language.					
6	I study English for the satisfaction I feel when I am in the process of accomplishing difficult exercises in English language.	1	2	3	4	5
Intrinsic Motivation-Stimulation						
7	I study English for the "high" I feel when hearing English spoken.	1	2	3	4	5
8	I study English for the "high" feeling that I experience while speaking English.	1	2	3	4	5
9	I study English for the pleasure I get from hearing English spoken by native speakers.	1	2	3	4	5
External regulation						
10	I am studying English because I have the impression that it is expected for me.	1	2	3	4	5
11	I am studying English in order to get a more prestigious job later on.	1	2	3	4	5
12	I am studying English to have a better salary later on.	1	2	3	4	5
Introjected regulation						
13	I study English to show myself that I am a good citizen because I can speak English.	1	2	3	4	5
14	I study English because I would feel ashamed if I couldn't speak to my friends from English speaking community in their mother tongue.	1	2	3	4	5
15	I study English because I would feel guilty if I didn't know English.	1	2	3	4	5
Identified regulation						
16	I am studying English because I choose to be the kind of person who can speak more than one language.	1	2	3	4	5
17	I am studying English because I think it is good for my personal development.	1	2	3	4	5
18	I am studying English because I choose to be the kind of person who can speak English.	1	2	3	4	5

Vietnamese version

CÂU HỎI KHẢO SÁT DÀNH CHO SINH VIÊN

(Giai đoạn 1)

Phần I: Thông tin chung

Đọc thông tin bên dưới và trả lời bằng dấu chéo (x) vào khung tương ứng hoặc ghi thông tin trả lời cần thiết.

1. Giới tính: Nam Nữ
2. Năm học: Năm nhất Năm hai Năm ba
3. Khả năng máy tính cơ bản của bạn (MS Office, web, chat, email,...):
 kém yếu trung bình khá giỏi
4. Tuổi: 18-19 20-21 over 21
5. Chuyên ngành:
6. Khoa:

Phần II: Chiến lược học ngoại ngữ

Đọc các câu bên dưới và trả lời đúng nhất về việc sử dụng chiến lược học ngoại ngữ của bạn. Đánh dấu chéo vào ô tương ứng với câu trả lời của bạn theo thang đo bên dưới.

1. Không bao giờ đúng 2. Thỉnh thoảng đúng 3. Đôi khi đúng
4. Thường đúng 5. Luôn luôn đúng

Nhóm chiến lược ghi nhớ					
1	Tôi nghĩ về mối liên hệ giữa điều tôi đã biết và kiến thức mới mà tôi học bằng tiếng Anh.	1	2	3	4 5
2	Tôi đặt câu với từ mới để tôi có thể nhớ lâu.	1	2	3	4 5
3	Tôi kết nối âm thanh của từ mới với hình ảnh đặc trưng của từ đó để nhớ lâu.	1	2	3	4 5
4	Tôi nhớ từ mới bằng cách liên tưởng tới tình huống mà từ đó có thể sử dụng.	1	2	3	4 5
5	Tôi sử dụng ngữ điệu để nhớ từ mới.	1	2	3	4 5
6	Tôi sử dụng flashcards để nhớ từ mới.	1	2	3	4 5
7	Tôi sử dụng ngôn ngữ cơ thể để diễn đạt từ mới.	1	2	3	4 5
8	Tôi ôn bài thường xuyên.	1	2	3	4 5
9	Tôi nhớ từ mới hoặc cụm từ mới bằng cách nhớ vị trí của chúng trong sách, trên bảng hoặc bảng hiệu đường phố.	1	2	3	4 5
Nhóm chiến lược nhận thức					
10	Tôi nói hoặc viết từ mới nhiều lần.	1	2	3	4 5
11	Tôi cố gắng nói giống người bản xứ.	1	2	3	4 5
12	Tôi luyện tập phát âm.	1	2	3	4 5

13	Tôi sử dụng các từ vựng theo nhiều cách khác nhau.	1	2	3	4	5
14	Tôi bắt đầu nói chuyện bằng tiếng Anh.	1	2	3	4	5
15	Tôi xem các chương trình TV bằng tiếng Anh hoặc xem phim bằng tiếng Anh.	1	2	3	4	5
16	Tôi đọc sách thư giãn bằng tiếng Anh.	1	2	3	4	5
17	Tôi ghi chép, viết thư và viết báo cáo bằng tiếng Anh.	1	2	3	4	5
18	Tôi đọc nhanh một đoạn văn trước, sau đó đọc lại kỹ hơn.	1	2	3	4	5
19	Tôi tìm các từ tiếng Việt tương tự như các từ mới tiếng Anh.	1	2	3	4	5
20	Tôi cố gắng tìm các mẫu câu trong tiếng Anh.	1	2	3	4	5
21	Tôi tìm nghĩa của một từ tiếng Anh bằng cách chia từ đó ra nhiều phần mà tôi hiểu.	1	2	3	4	5
22	Tôi cố gắng không dịch từng từ một.	1	2	3	4	5
23	Tôi tóm tắt thông tin mà tôi nghe được hoặc đọc được bằng tiếng Anh.	1	2	3	4	5
Nhóm chiến lược đối phó						
24	Tôi đoán nghĩa của những từ mà tôi không biết.	1	2	3	4	5
25	Khi nói chuyện tôi hay sử dụng cử chỉ để diễn đạt những từ mà tôi không biết.	1	2	3	4	5
26	Tôi tự tạo ra từ mới nếu tôi không biết từ chính xác để diễn đạt.	1	2	3	4	5
27	Tôi đọc các từ mà không cần tra nghĩa.	1	2	3	4	5
28	Tôi cố gắng đoán người khác sẽ nói gì kế tiếp khi nói chuyện với họ.	1	2	3	4	5
29	Nếu tôi không nghĩ ra từ để diễn đạt, tôi sử dụng từ hoặc cụm từ khác có cùng nghĩa.	1	2	3	4	5
Nhóm chiến lược siêu nhận thức						
30	Tôi cố gắng tìm nhiều cách khác nhau để sử dụng tiếng Anh.	1	2	3	4	5
31	Tôi chú ý đến các lỗi hay mắc phải và rút kinh nghiệm cho các lần sau.	1	2	3	4	5
32	Tôi chú ý khi người khác nói chuyện bằng tiếng Anh.	1	2	3	4	5
33	Tôi tìm cách để trở thành người học tiếng Anh giỏi.	1	2	3	4	5
34	Tôi sắp xếp thời gian để có đủ thời gian học tiếng Anh.	1	2	3	4	5
35	Tôi tìm những người xung quanh để có thể giao tiếp bằng tiếng Anh.	1	2	3	4	5
36	Tôi tìm cơ hội để có thể đọc thông tin, tài liệu bằng tiếng Anh.	1	2	3	4	5
37	Tôi có các mục tiêu rõ ràng để cải thiện tiếng Anh.	1	2	3	4	5
38	Tôi nghĩ về sự tiến bộ của mình khi học tiếng Anh.	1	2	3	4	5
Nhóm chiến lược kiểm soát tình cảm/cảm xúc						
39	Tôi cố gắng thư giãn khi tôi sợ sử dụng tiếng Anh.	1	2	3	4	5
40	Tôi tự động viên mình để nói tiếng Anh khi tôi sợ mắc lỗi khi giao tiếp.	1	2	3	4	5
41	Tôi tự thưởng cho mình khi đạt kết quả tốt trong việc học tiếng Anh.	1	2	3	4	5
42	Tôi chú ý xem mình có căng thẳng hay hồi hộp khi tôi học hoặc sử dụng tiếng Anh hay không.	1	2	3	4	5
43	Tôi viết nhật ký bằng tiếng Anh về cảm xúc của mình.	1	2	3	4	5
44	Tôi nói với người khác về cảm xúc của mình khi học tiếng Anh.	1	2	3	4	5
Nhóm chiến lược giao tiếp xã hội						
45	Khi tôi không hiểu điều gì khi giao tiếp bằng tiếng Anh, tôi yêu cầu người đối diện nói chậm lại hoặc lặp lại từ đó.	1	2	3	4	5
46	Tôi yêu cầu người bản xứ sửa lỗi khi tôi giao tiếp.	1	2	3	4	5
47	Tôi luyện tập tiếng Anh với sinh viên khác.	1	2	3	4	5
48	Tôi yêu cầu sự giúp đỡ từ người bản xứ trong việc học tiếng Anh.	1	2	3	4	5
49	Tôi hỏi các câu hỏi bằng tiếng Anh.	1	2	3	4	5

50	Tôi cố gắng tìm hiểu nền văn hóa của người bản xứ.	1	2	3	4	5
----	--	---	---	---	---	---

Phần III: Thái độ đối với việc học tiếng Anh

Đọc các câu bên dưới và trả lời đúng nhất về thái độ của bạn đối với việc học tiếng Anh. Đánh dấu chéo vào ô tương ứng với câu trả lời của bạn theo thang đo bên dưới.

1. Hoàn toàn không đồng ý 2. Không đồng ý 3. Trung lập (bình thường)
4. Đồng ý 5. Hoàn toàn đồng ý

Thái độ tích cực						
1	Học tiếng Anh thì tuyệt.	1	2	3	4	5
2	Tôi thật sự thích học tiếng Anh.	1	2	3	4	5
3	Tiếng Anh là một phần quan trọng trong chương trình.	1	2	3	4	5
4	Tôi lên kế hoạch học tiếng Anh càng nhiều càng tốt.	1	2	3	4	5
5	Tôi thích học tiếng Anh.	1	2	3	4	5
Thái độ tiêu cực						
6	Tôi ghét tiếng Anh.	1	2	3	4	5
7	Tôi muốn giành thời gian học môn khác hơn là môn tiếng Anh.	1	2	3	4	5
8	Học tiếng Anh lãng phí thời gian.	1	2	3	4	5
9	Tôi nghĩ học tiếng Anh thì ngớ ngẩn.	1	2	3	4	5
10	Sau khi tốt nghiệp, tôi sẽ không học tiếng Anh nữa vì tôi không có đam mê.	1	2	3	4	5

Phần IV: Động lực học tiếng Anh

Đọc các câu bên dưới và trả lời đúng nhất về động lực học tiếng Anh của bạn. Đánh dấu chéo vào ô tương ứng với câu trả lời của bạn theo thang đo bên dưới.

1. Hoàn toàn không đồng ý 2. Không đồng ý 3. Trung lập (bình thường)
4. Đồng ý 5. Hoàn toàn đồng ý

Động lực thâm nhập-Kiến thức						
1	Tôi học tiếng Anh vì niềm vui tôi có được trong việc biết thêm văn chương của nhóm người nói tiếng Anh.	1	2	3	4	5
2	Tôi học tiếng Anh vì cảm giác thỏa mãn tôi có được trong việc tìm ra những điều mới mẻ.	1	2	3	4	5
3	Tôi học tiếng Anh vì tôi thích cảm giác nắm được kiến thức về cộng đồng nói tiếng Anh và cách sống của họ.	1	2	3	4	5
Động lực thâm nhập-Sự hoàn thành						
4	Tôi học tiếng Anh vì niềm vui tôi có được khi tôi có cảm giác nổi trội trong việc học tiếng Anh của mình.	1	2	3	4	5
5	Tôi học tiếng Anh vì sự thích thú tôi có được khi tôi nắm được cấu trúc khó của tiếng Anh.	1	2	3	4	5
6	Tôi học tiếng Anh vì cảm giác thỏa mãn mà tôi có được trong quá trình hoàn thành các bài tập tiếng Anh khó.	1	2	3	4	5
Động lực thâm nhập-Sự khuyến khích						

7	Tôi học tiếng Anh vì tôi có cảm giác thích thú khi nghe tiếng Anh được nói.	1	2	3	4	5
8	Tôi học tiếng Anh vì tôi có cảm giác thích thú khi nói tiếng Anh.	1	2	3	4	5
9	Tôi học tiếng Anh vì niềm vui khi nghe người bản xứ nói tiếng Anh.	1	2	3	4	5
Điều chỉnh bên ngoài						
10	Tôi học tiếng Anh vì tôi có ấn tượng rằng tiếng Anh được giành cho tôi.	1	2	3	4	5
11	Tôi học tiếng Anh để có cơ hội tìm được một công việc tốt sau này.	1	2	3	4	5
12	Tôi học tiếng Anh để có lương cao hơn sau này.	1	2	3	4	5
Điều chỉnh do ý thức						
13	Tôi học tiếng Anh để thể hiện rằng tôi là một công dân tốt vì tôi có thể nói tiếng Anh.	1	2	3	4	5
14	Tôi học tiếng Anh vì tôi cảm thấy xấu hổ nếu tôi không thể nói chuyện với bạn bè từ cộng đồng nói tiếng Anh.	1	2	3	4	5
15	Tôi học tiếng Anh vì tôi cảm thấy tội lỗi nếu tôi không biết tiếng Anh.	1	2	3	4	5
Điều chỉnh do mục tiêu						
16	Tôi học tiếng Anh vì tôi muốn trở thành người có thể nói được nhiều hơn một ngôn ngữ.	1	2	3	4	5
17	Tôi học tiếng Anh vì tôi nghĩ nó tốt cho sự phát triển cá nhân của tôi.	1	2	3	4	5
18	Tôi học tiếng Anh bởi vì tôi muốn trở thành người có thể nói được tiếng Anh.	1	2	3	4	5

Appendix 3B

English version

QUESTIONNAIRE FOR STUDENTS

(Phase 2)

Part I: Demographic information

Read the following questions and answer them either by making a cross (x) in the appropriate box or write in the space.

1. Gender: Male Female
2. Major:.....
3. General computer proficiency (MS Office, web, chat, email, blog...):
 very bad bad ok good very good

Part II: Language learning strategies

Please read the sentences and answer in terms of how well the statement describes your use of language learning strategies. Please indicate the degree of your agreement by putting a cross in the column that corresponds to your choice for each item, using the scale below.

1. Never or almost never true 2. Occasionally true 3. Sometimes true
4. Usually true 5. Always or almost always true

Memory						
1	I think of the relationship between what I already know and new things I learn in English.	1	2	3	4	5
2	I use new English words in a sentence so that I can remember them.	1	2	3	4	5
3	I remember a new English word by a mental picture of a situation in which the word might be used.	1	2	3	4	5
4	I use rhymes to remember new English words.	1	2	3	4	5
5	I use flashcards to remember new English words.	1	2	3	4	5
6	I review English lessons often.	1	2	3	4	5
Cognitive						
7	I say or write new English words several times.	1	2	3	4	5
8	I try to speak like native English speakers.	1	2	3	4	5
9	I start conversations in English.	1	2	3	4	5
10	I watch English language TV shows spoken in English or go to the movies spoken in English.	1	2	3	4	5
11	I read for pleasure in English.	1	2	3	4	5
12	I write notes, messages, letters or reports in English.	1	2	3	4	5
13	I try to find patterns in English.	1	2	3	4	5
14	I find the meaning of an English word by dividing it into parts that I understand.	1	2	3	4	5
15	I try not to translate word for word.	1	2	3	4	5

Compensation						
16	To understand unfamiliar English words I make guesses.	1	2	3	4	5
17	When I can't think of a new word during a conversation in English, I use gestures.	1	2	3	4	5
18	I read English without looking up every new word.	1	2	3	4	5
19	I try to guess what the other person will say next in English.	1	2	3	4	5
20	If I can't think of an English word, I use a word or phrase that means the same thing.	1	2	3	4	5
Metacognitive						
21	I try to find as many ways as I can to use English.	1	2	3	4	5
22	I notice my English mistakes and use that information to help me do better.	1	2	3	4	5
23	I try to find out how to be a better learner of English.	1	2	3	4	5
24	I plan my schedule so that I will have enough time to study English.	1	2	3	4	5
25	I look for people I can talk to in English.	1	2	3	4	5
26	I look for opportunities to read as much as possible in English.	1	2	3	4	5
27	I have clear goals for improving my English skills.	1	2	3	4	5
28	I think about my progress in learning English.	1	2	3	4	5
Affective						
29	I try to relax whenever I feel afraid of using English.	1	2	3	4	5
30	I encourage myself to speak English even when I am afraid of making a mistake.	1	2	3	4	5
31	I give myself a reward or treat when I do well in English.	1	2	3	4	5
32	I notice if I am tense or nervous when I am studying or using English.	1	2	3	4	5
33	I talk to someone else about how I feel when I am learning English.	1	2	3	4	5
Social						
34	If I do not understand something in English, I ask the other person to slow down or say it again.	1	2	3	4	5
35	I ask English speakers to correct me when I talk.	1	2	3	4	5
36	I practise English with other students.	1	2	3	4	5
37	I ask questions in English.	1	2	3	4	5
38	I try to learn about the culture of English speakers.	1	2	3	4	5

Part III: Attitudes towards learning English

Please read the sentences and answer in terms of how well the statement describes your attitudes towards learning English. Please indicate the degree of your agreement by putting a cross in the column that corresponds to your choice for each item, using the scale below.

1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

Positive attitudes						
1	Learning English is really great.	1	2	3	4	5
2	I really enjoy learning English.	1	2	3	4	5
3	English is an important part of the school programme.	1	2	3	4	5
4	I plan to learn as much English as possible.	1	2	3	4	5
5	I love learning English.	1	2	3	4	5

Negative attitudes						
6	I would rather spend my time on subjects other than English.	1	2	3	4	5
7	Learning English is a waste of time.	1	2	3	4	5
8	I think that learning English is dull.	1	2	3	4	5
9	When I leave school, I shall give up the study of English entirely because I am not interested in it.	1	2	3	4	5

Part IV: Motivation to learn English

Please read the sentences and answer in terms of how well the statement describes your motivation to learn English. Please indicate the degree of your agreement by putting a cross in the column that corresponds to your choice for each item, using the scale below.

1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

Intrinsic motivation						
1	I study English for the satisfied feeling I get in finding out new things.	1	2	3	4	5
2	I study English because I enjoy the feeling of acquiring knowledge about the English language community and their way of life.	1	2	3	4	5
3	I study English for the pleasure I experience when surpassing myself in my second language studies.	1	2	3	4	5
4	I study English for the enjoyment I experience when I grasp a difficult construct in English language.	1	2	3	4	5
5	I study English for the satisfaction I feel when I am in the process of accomplishing difficult exercises in English language.	1	2	3	4	5
6	I study English for the "high" I feel when hearing English spoken.	1	2	3	4	5
7	I study English for the "high" feeling that I experience while speaking English.	1	2	3	4	5
8	I am studying English because I have the impression that it is expected for me.	1	2	3	4	5
Extrinsic motivation						
9	I am studying English in order to get a more prestigious job later on.	1	2	3	4	5
10	I am studying English to have a better salary later on.	1	2	3	4	5
11	I study English to show myself that I am a good citizen because I can speak English.	1	2	3	4	5
12	I study English because I would feel ashamed if I couldn't speak to my friends from English speaking community in their mother tongue.	1	2	3	4	5
13	I study English because I would feel guilty if I didn't know English	1	2	3	4	5
14	I am studying English because I choose to be the kind of person who can speak more than one language.	1	2	3	4	5
15	I am studying English because I think it is good for my personal development.	1	2	3	4	5

Vietnamese version

CÂU HỎI KHẢO SÁT DÀNH CHO SINH VIÊN

(Giai đoạn 2)

Phần I: Thông tin chung

Đọc thông tin bên dưới và trả lời bằng dấu chéo (x) vào khung tương ứng hoặc ghi câu trả lời.

1. Giới tính: Nam Nữ
2. Chuyên ngành:.....
3. Khả năng máy tính cơ bản của bạn (MS Office, web, chat, email,...):
 kém yếu trung bình khá giỏi

Phần II: Chiến lược học ngoại ngữ

Đọc các câu bên dưới và trả lời đúng nhất về việc sử dụng chiến lược học ngoại ngữ của bạn. Đánh dấu chéo vào ô tương ứng với câu trả lời của bạn theo thang đo bên dưới.

1. Không bao giờ đúng
2. Thỉnh thoảng đúng
3. Đôi khi đúng
4. Thường đúng
5. Luôn luôn đúng

Nhóm chiến lược ghi nhớ						
1	Tôi nghĩ về mối liên hệ giữa điều tôi đã biết và kiến thức mới mà tôi học bằng tiếng Anh.	1	2	3	4	5
2	Tôi đặt câu với từ mới để tôi có thể nhớ lâu.	1	2	3	4	5
3	Tôi nhớ từ mới bằng cách liên tưởng tới tình huống mà từ đó có thể sử dụng.	1	2	3	4	5
4	Tôi sử dụng ngữ điệu để nhớ từ mới.	1	2	3	4	5
5	Tôi sử dụng flashcards để nhớ từ mới.	1	2	3	4	5
6	Tôi ôn bài thường xuyên.	1	2	3	4	5
Nhóm chiến lược nhận thức						
7	Tôi nói hoặc viết từ mới nhiều lần.	1	2	3	4	5
8	Tôi cố gắng nói giống người bản xứ.	1	2	3	4	5
9	Tôi bắt đầu nói chuyện bằng tiếng Anh.	1	2	3	4	5
10	Tôi xem các chương trình TV bằng tiếng Anh hoặc xem phim bằng tiếng Anh.	1	2	3	4	5
11	Tôi đọc sách thư giãn bằng tiếng Anh.	1	2	3	4	5
12	Tôi ghi chép, viết thư và viết báo cáo bằng tiếng Anh.	1	2	3	4	5
13	Tôi cố gắng tìm các mẫu câu trong tiếng Anh.	1	2	3	4	5
14	Tôi tìm nghĩa của một từ tiếng Anh bằng cách chia từ đó ra nhiều phần mà tôi hiểu.	1	2	3	4	5
15	Tôi cố gắng không dịch từng từ một.	1	2	3	4	5
Nhóm chiến lược đối phó						
16	Tôi đoán nghĩa của những từ mà tôi không biết.	1	2	3	4	5
17	Khi nói chuyện tôi hay sử dụng cử chỉ để diễn đạt những từ mà tôi không biết.	1	2	3	4	5

18	Tôi đọc các từ mà không cần tra nghĩa.	1	2	3	4	5
19	Tôi cố gắng đoán người khác sẽ nói gì kế tiếp khi nói chuyện với họ.	1	2	3	4	5
20	Nếu tôi không nghĩ ra từ để diễn đạt, tôi sử dụng từ hoặc cụm từ khác có cùng nghĩa.	1	2	3	4	5
Nhóm chiến lược siêu nhận thức						
21	Tôi cố gắng tìm nhiều cách khác nhau để sử dụng tiếng Anh.	1	2	3	4	5
22	Tôi chú ý đến các lỗi hay mắc phải và rút kinh nghiệm cho các lần sau.	1	2	3	4	5
23	Tôi tìm cách để trở thành người học tiếng Anh giỏi.	1	2	3	4	5
24	Tôi sắp xếp thời gian để có đủ thời gian học tiếng Anh.	1	2	3	4	5
25	Tôi tìm những người xung quanh để có thể giao tiếp bằng tiếng Anh.	1	2	3	4	5
26	Tôi tìm cơ hội để có thể đọc thông tin, tài liệu bằng tiếng Anh.	1	2	3	4	5
27	Tôi có các mục tiêu rõ ràng để cải thiện tiếng Anh.	1	2	3	4	5
28	Tôi nghĩ về sự tiên bộ của mình khi học tiếng Anh.	1	2	3	4	5
Nhóm chiến lược kiểm soát tình cảm/cảm xúc						
29	Tôi cố gắng thư giãn khi tôi sợ sử dụng tiếng Anh.	1	2	3	4	5
30	Tôi tự động viên mình để nói tiếng Anh khi tôi sợ mắc lỗi khi giao tiếp.	1	2	3	4	5
31	Tôi tự thưởng cho mình khi đạt kết quả tốt trong việc học tiếng Anh.	1	2	3	4	5
32	Tôi chú ý xem mình có căng thẳng hay hồi hộp khi tôi học hoặc sử dụng tiếng Anh hay không.	1	2	3	4	5
33	Tôi nói với người khác về cảm xúc của mình khi học tiếng Anh.	1	2	3	4	5
Nhóm chiến lược giao tiếp xã hội						
34	Khi tôi không hiểu điều gì khi giao tiếp bằng tiếng Anh, tôi yêu cầu người đối diện nói chậm lại hoặc lặp lại từ đó.	1	2	3	4	5
35	Tôi yêu cầu người bản xứ sửa lỗi khi tôi giao tiếp.	1	2	3	4	5
36	Tôi luyện tập tiếng Anh với sinh viên khác.	1	2	3	4	5
37	Tôi hỏi các câu hỏi bằng tiếng Anh.	1	2	3	4	5
38	Tôi cố gắng tìm hiểu nền văn hóa của người bản xứ.	1	2	3	4	5

Phần III: Thái độ đối với việc học tiếng Anh

Đọc các câu bên dưới và trả lời đúng nhất về thái độ của bạn đối với việc học tiếng Anh. Đánh dấu chéo vào ô tương ứng với câu trả lời của bạn theo thang đo bên dưới.

1. Hoàn toàn không đồng ý 2. Không đồng ý 3. Trung lập (bình thường)
4. Đồng ý 5. Hoàn toàn đồng ý

Thái độ tích cực						
1	Học tiếng Anh thì tuyệt.	1	2	3	4	5
2	Tôi thật sự thích học tiếng Anh.	1	2	3	4	5
3	Tiếng Anh là một phần quan trọng trong chương trình.	1	2	3	4	5
4	Tôi lên kế hoạch học tiếng Anh càng nhiều càng tốt.	1	2	3	4	5
5	Tôi thích học tiếng Anh.	1	2	3	4	5
Thái độ tiêu cực						
6	Tôi muốn giành thời gian học môn khác hơn là môn tiếng Anh.	1	2	3	4	5
7	Học tiếng Anh lãng phí thời gian.	1	2	3	4	5

8	Tôi nghĩ học tiếng Anh thì ngắn.	1	2	3	4	5
9	Sau khi tốt nghiệp, tôi sẽ không học tiếng Anh nữa vì tôi không có đam mê.	1	2	3	4	5

Phần IV: Động lực học tiếng Anh

Đọc các câu bên dưới và trả lời đúng nhất về động lực của bạn trong việc học tiếng Anh. Đánh dấu chéo vào ô tương ứng với câu trả lời của bạn theo thang đo bên dưới.

1. Hoàn toàn không đồng ý 2. Không đồng ý 3. Trung lập (bình thường)
4. Đồng ý 5. Hoàn toàn đồng ý

Động lực bên trong						
1	Tôi học tiếng Anh vì cảm giác thỏa mãn tôi có được trong việc tìm ra những điều mới mẻ.	1	2	3	4	5
2	Tôi học tiếng Anh vì tôi thích cảm giác nắm được kiến thức về cộng đồng nói tiếng Anh và cách sống của họ.	1	2	3	4	5
3	Tôi học tiếng Anh vì niềm vui tôi có được khi tôi có cảm giác nổi trội trong việc học tiếng Anh của mình.	1	2	3	4	5
4	Tôi học tiếng Anh vì sự thích thú tôi có được khi tôi nắm được cấu trúc khó của tiếng Anh.	1	2	3	4	5
5	Tôi học tiếng Anh vì cảm giác thỏa mãn mà tôi có được trong quá trình hoàn thành các bài tập tiếng Anh khó.	1	2	3	4	5
6	Tôi học tiếng Anh vì tôi có cảm giác thích thú khi nghe tiếng Anh được nói.	1	2	3	4	5
7	Tôi học tiếng Anh vì tôi có cảm giác thích thú khi nói tiếng Anh.	1	2	3	4	5
8	Tôi học tiếng Anh vì tôi có ấn tượng rằng tiếng Anh được giành cho tôi.	1	2	3	4	5
Động lực bên ngoài						
9	Tôi học tiếng Anh để có cơ hội tìm được một công việc tốt sau này.	1	2	3	4	5
10	Tôi học tiếng Anh để có lương cao hơn sau này.	1	2	3	4	5
11	Tôi học tiếng Anh để thể hiện rằng tôi là một công dân tốt vì tôi có thể nói tiếng Anh.	1	2	3	4	5
12	Tôi học tiếng Anh vì tôi cảm thấy xấu hổ nếu tôi không thể nói chuyện với bạn bè từ cộng đồng nói tiếng Anh.	1	2	3	4	5
13	Tôi học tiếng Anh vì tôi cảm thấy tội lỗi nếu tôi không biết tiếng Anh.	1	2	3	4	5
14	Tôi học tiếng Anh vì tôi muốn trở thành người có thể nói được nhiều hơn một ngôn ngữ.	1	2	3	4	5
15	Tôi học tiếng Anh vì tôi nghĩ nó tốt cho sự phát triển cá nhân của tôi.	1	2	3	4	5

Appendix 3C

TEACHING PLAN

Week 2: Introduction & Unit 1

Learning activities	Contents to be covered	Requirements for students	Notes
Theory	Greeting & Introduction Informing students requirements & assessment criteria Negation and Parallel structure (page 28)	Prepare all of the relevant grammatical points	
Exercises	1. Exercises A, B, C (page 29) 2. Part I-Picture Description (page 113 - 114) 3. Part II-Questions and Responses (page 114) 4. Extra activity		
Discussion & Practice	Work in pairs, and in groups discussing answers to all of the exercises		
Self-study	Prepare pages 115, 117-119, & 120		At home

Week 3: Unit 1

Learning activities	Contents to be covered	Requirements for students	Notes
Theory	Grammatical points and vocabulary in unit 1	All of grammatical points and vocabulary in the pages	
Exercises	1. Part III – Short Conversations (page 115) 2. Part V (pages 117 - 119) 3. Part VI (page 120) 4. Extra activity: reading		
Discussion & Practice	Work in pairs, and in groups discussing answers to all of the exercises	Use Ss' vocabularies before and in the course	
Self-study	Prepare pages 116, 121-123		At home

Week 4: Unit 1

Learning activities	Contents to be covered	Requirements for students	Notes
Theory	Grammatical points and vocabulary in unit 1	All of grammatical points and vocabulary in the pages	
Exercises	1. Part IV – Short Talks (page 116) 2. Part VI (pages 121 - 122) 3. Part VII (page 123) 4. Extra activity		
Discussion & Practice	Work in pairs, and in groups discussing answers to all of the exercises	Use Ss' vocabularies before and in the course	
Self-study	Prepare pages 22 & 23		At home

Week 5: Unit 1 & 2

Learning activities	Contents to be covered	Requirements for students	Notes
Theory	Comparisons (page 30)	- Read the grammar points in Ss' book at home - Highlight the unknown ones	
Exercises	1. Part VII (pages 124 - 127) 2. Exercises A, B, C (page 31) 3. Part I-Picture Description (pages 129 & 130) 4. Extra activity		
Discussion & Practice	Work in pairs, and in groups discussing answers to all of the exercises		
Self-study	Prepare pages 130, 133-137		At home

Week 6: Unit 2

Learning activities	Contents to be covered	Requirements for students	Notes
Theory	Grammatical points and vocabulary in unit 2	All of grammatical points and vocabulary in the pages	
Exercises	1. Part II-Questions And Responses (Page 130) 2. Part V (pages 133 - 135) 3. Part VI (pages 136 & 137) 4. Extra activity		
Discussion & Practice	Work in pairs, and in groups discussing answers to all of the exercises	Use Ss' vocabularies before and in the course	
Self-study	Prepare pages 131, 138-140		At home

Week 7: Unit 2

Learning activities	Contents to be covered	Requirements for students	Notes
Theory	Grammatical points and vocabulary in unit 2	All of grammatical points and vocabulary in the pages	
Exercises	1. Part III-Short conversations (page 131) 2. Part VI (page 138) 3. Part VII (pages 139 & 140) 4. Extra activity		
Discussion & Practice	Work in pairs, and in groups discussing answers to all of the exercises	Use Ss' vocabularies before and in the course	
Self-study	Prepare pages 132, 141-143		At home

Week 8: Unit 2

Learning activities	Contents to be covered	Requirements for students	Notes
Theory	Grammatical points and vocabulary in unit 2	Work in groups preparing all of these grammatical points and look up all of the new words	
Exercises	1. Part IV (page 132) 2. Part VII (pages 141 - 143) 3. Extra activity		
Discussion & Practice	Work in pairs, and in groups discussing answers to all of the exercises	Use Ss' vocabularies before and in the course	
Self-study	Review grammatical points and vocabulary in unit 1 & 2		At home

Week 9: Review

Learning activities	Contents to be covered	Requirements for students	Notes
Theory	Grammatical points and vocabulary in units 1 & 2	- Read the grammar points in Ss' book at home - Highlight the unknown ones	
Exercises	Extra activity		
Discussion & Practice	Work in pairs, and in groups discussing answers to all of the exercises		
Self-study	Prepare pages 32, 33, 145, 146, & 152		At home

Week 10: Unit 3

Learning activities	Contents to be covered	Requirements for students	Notes
Theory	Agreement (page 32)	All of grammatical points and vocabulary in the pages	
Exercises	1. Exercises A, B, C (page 33) 2. Part I-Picture Description (page 145 - 146) 3. Part II (page 146) 3. Part VI (page 152) 4. Extra activity		
Discussion & Practice	Work in pairs, and in groups discussing answers to all of the exercises	Use Ss' vocabularies before and in the course	
Self-study	Prepare pages 147, 149-151, 155-156		At home

Week 11: Unit 3

Learning activities	Contents to be covered	Requirements for students	Notes
Theory	Grammatical points and vocabulary in unit 3	All of grammatical points and vocabulary in the pages	
Exercises	1. Part III -Short Conversations (page 147) 2. Part V (pages 149 - 151) 3. Part VII (pages 155 & 156) 4. Extra activity: Listening		
Discussion & Practice	Work in pairs, and in groups discussing answers to all of the exercises	Use Ss' vocabularies before and in the course	
Self-study	Prepare pages 148, 153, 154, 157-159		At home

Week 12: Unit 3 + Unit 4

Learning activities	Contents to be covered	Requirements for students	Notes
Theory	Grammatical points and vocabulary in unit 3	- Read the grammar points in Ss' book at home - Highlight the unknown ones	
Exercises	1. Part IV-Short Talks (page 148) 2. Part VI (pages 153 & 154) 3. Part VII (page 157 - 159) 4. Extra activity		
Discussion & Practice	Work in pairs, and in groups discussing answers to all of the exercises	Highlight new words and questions that they don't know the answers for sure	
Self-study	Prepare pages 34, 35, 161, 162, 168, & 171		At home

Week 13: Unit 4

Learning activities	Contents to be covered	Requirements for students	Notes
Theory	Grammatical points and vocabulary in unit 4	- Ss' own words in the field for traveling - Ss' sentences mentioning their possibilities in study and life	
Exercises	1. Part III (page 163) 2. Part V (pages 165 - 167) 3. Part VI (page 169) 4. Part VII (page 172) 5. Extra activity		
Discussion & Practice	Work in pairs, and in groups discussing answers to all of the exercises	Highlight new words and questions that they don't know the answers for sure	
Self-study	Review grammatical points and vocabulary in units 1-4	Mention Ss' strengths	At home

Appendix 3D

English version

INTERVIEW QUESTIONS

1. Questions for semi-structured interviews with students

	Main Questions	Notes
Language learning strategies	Which language learning strategies do you use most?	
	Do you think learning strategies can help you to learn English more effectively?	
	Do you often check your learning process? Why and why not? Give some examples?	
	Do you have a plan for learning every lesson? Do you often stick to that plan?	
	Do you have goals in your learning? Why and why not?	
	What do you think about students' and teachers' roles in CALL class when learning strategies are used?	
Attitudes towards learning English	Are you interested in CALL lessons?	
	What do you think about learning English with CALL?	
Motivation to learn English	Would you explain why you are learning English?	
	How important do you think you need to learn English?	

2. Questions for semi-structured interviews with teachers

Main Questions	Notes
What do you think about the benefits of CALL for students in terms of learner autonomy?	
Is it necessary to implement CALL lessons?	
What are the obstacles students may face in CALL classes?	

CÂU HỎI PHỎNG VẤN

1. Câu hỏi phỏng vấn dành cho sinh viên

	Câu hỏi chính	Ghi chú
Chiến lược học ngoại ngữ	Chiến lược học nào bạn sử dụng nhiều nhất?	
	Bạn có nghĩ chiến lược học tập giúp bạn học hiệu quả hơn không?	
	Bạn có thường xuyên kiểm tra quá trình học của mình không? Tại sao có, tại sao không? Cho ví dụ minh họa?	
	Bạn có kế hoạch học tập cho mỗi bài học không? Bạn có bám sát kế hoạch đó không?	
	Bạn có mục tiêu trong học tập không? Tại sao có, tại sao không?	
	Bạn nghĩ gì về vai trò của giáo viên và sinh viên trong lớp học có sự hỗ trợ của máy tính khi chiến lược học ngoại ngữ được sử dụng?	
Thái độ với việc học tiếng Anh	Bạn thích các bài học có sự hỗ trợ của máy tính không?	
	Bạn nghĩ gì về các bài học có sự hỗ trợ của máy tính?	
Động lực học tiếng Anh	Giải thích lý do vì sao bạn học tiếng Anh?	
	Học tiếng Anh có tầm quan trọng như thế nào?	

2. Câu hỏi phỏng vấn dành cho giáo viên

Câu hỏi chính	Ghi chú
Cô nghĩ gì về lợi ích của máy tính đối với tính tự học của sinh viên?	
Có cần thiết học ngoại ngữ với máy tính không?	
Các trở ngại nào mà cô thấy sinh viên hay có trong lớp học có sự hỗ trợ của máy tính?	

Appendix 4A

DESCRIPTIVE STATISTICS OF THE 78 QUESTIONNAIRE ITEMS

Items	Min	Max	Mean	SD	Skewness	Kurtosis
MEM1	1	5	3.18	.885	-.080	-.213
MEM2	1	5	3.15	.871	-.187	-.245
MEM3	1	5	2.96	.938	-.010	-.707
MEM4	1	5	3.13	.843	-.246	-.033
MEM5	1	5	3.13	.962	-.290	-.357
MEM6	1	5	3.17	.963	-.136	-.416
MEM7	1	5	2.99	1.014	-.169	-.797
MEM8	1	5	3.17	.970	-.240	-.598
MEM9	1	5	2.87	.994	.078	-.584
COG1	1	5	2.65	.949	.314	-.760
COG2	1	5	3.23	.953	-.401	-.715
COG3	1	4	2.76	.740	.115	-.654
COG4	1	4	2.66	.701	.122	-.397
COG5	1	5	2.76	1.021	.169	-.958
COG6	1	5	2.76	1.102	.175	-.819
COG7	1	5	2.81	.944	.088	-.839
COG8	1	5	2.66	1.020	.356	-.842
COG9	1	5	2.83	1.091	.078	-.876
COG10	1	5	2.52	.755	.523	-.180
COG11	1	5	2.70	.765	.058	-.344
COG12	1	4	2.72	.718	.013	-.385
COG13	1	5	2.53	.987	.477	-.349
COG14	1	5	2.53	.776	.474	-.283
COM1	1	5	3.10	.878	-.240	-.489
COM2	1	5	3.02	.883	-.183	-.453
COM3	1	5	3.09	.954	-.270	-.968
COM4	1	5	3.01	1.117	-.146	-.686
COM5	1	5	3.16	.890	-.299	-.404
COM6	1	5	3.27	.869	-.520	-.207
MET1	1	5	3.15	1.172	-.066	-.846
MET2	1	5	3.22	.995	-.304	-.270
MET3	1	5	2.95	.890	.363	.815
MET4	1	5	3.11	1.163	-.021	-.717
MET5	1	5	2.90	1.163	.003	-.807
MET6	1	5	3.26	1.098	-.066	-.660
MET7	1	5	3.01	.874	.184	-.272
MET8	1	4	2.94	.624	-.310	.574
MET9	1	5	2.85	.778	.007	-.073
AFF1	1	5	2.51	.937	.804	-.099
AFF2	1	5	2.55	.997	.654	-.342

AFF3	1	5	2.46	.948	.853	.169
AFF4	1	5	2.49	1.004	.761	-.068
AFF5	1	5	2.72	1.176	.423	-.752
AFF6	1	5	2.45	.892	.752	.080
SOC1	1	5	3.11	.790	.160	-.312
SOC2	1	5	3.04	.845	-.042	-.578
SOC3	1	5	3.26	.772	-.325	-.394
SOC4	1	5	2.98	.955	-.104	-.872
SOC5	1	5	3.13	.848	-.044	-.680
SOC6	1	5	3.23	.821	-.324	-.595
PAT1	1	5	3.07	.863	-.218	-.300
PAT2	1	5	3.14	.861	-.137	-.359
PAT3	1	5	3.03	.814	-.334	-.426
PAT4	1	5	3.10	.953	-.194	-.527
PAT5	1	5	3.08	.872	-.409	-.377
NAT1	1	3	1.96	.569	-.007	.105
NAT2	1	4	1.93	.727	.369	-.253
NAT3	1	3	1.91	.690	.121	-.894
NAT4	1	3	1.97	.699	.047	-.945
NAT5	1	4	1.85	.665	.412	.171
IMK1	1	5	2.63	.789	.729	-.232
IMK2	1	5	2.91	.937	.051	-.629
IMK3	1	5	2.93	.753	.198	-.117
IMA1	1	5	2.93	.865	-.001	-.388
IMA2	1	5	2.88	.891	.029	-.552
IMA3	1	5	2.82	.866	.216	-.513
IMS1	1	5	2.91	.867	.156	-.614
IMS2	1	5	3.00	.879	.121	-.251
IMS3	1	5	2.89	1.048	.199	-.574
EXR1	1	5	2.87	.729	.344	-.386
EXR2	1	5	3.23	.953	-.401	-.715
EXR3	1	5	2.55	.980	.460	-.358
INR1	1	5	2.67	1.018	.347	-.866
INR2	1	5	2.78	1.015	.165	-.960
INR3	1	5	2.79	1.175	.192	-.917
IDR1	1	5	2.88	1.001	.007	-.975
IDR2	1	5	2.88	1.191	.126	-.981
IDR3	1	5	2.78	.766	.204	-.514

Appendix 4B

FACTOR ANALYSIS PROCEDURES

Table 1: An extract of the total variance explained when 50 items were included

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	10.261	20.522	20.522	10.261	20.522	20.522	7.266
2	4.917	9.834	30.356	4.917	9.834	30.356	4.693
3	3.893	7.786	38.142	3.893	7.786	38.142	3.912
4	3.027	6.054	44.196	3.027	6.054	44.196	3.498
5	2.610	5.220	49.416	2.610	5.220	49.416	3.472
6	1.832	3.664	53.080	1.832	3.664	53.080	3.304
7	1.187	2.375	55.455	1.187	2.375	55.455	1.307
8	1.147	2.295	57.750	1.147	2.295	57.750	1.252
9	1.140	2.279	60.030	1.140	2.279	60.030	1.182
10	1.028	2.055	62.085	1.028	2.055	62.085	1.155
11	.986	1.972	64.057				
50	.138	.275	100.000				

Table 2: Loadings of the 50 items on the ten factors

	Rotated Component Matrix^a									
	Component									
	1	2	3	4	5	6	7	8	9	10
COG5	.842									
COG11	.833									
COG7	.832									
COG12	.818									
COG3	.740									
COG4	.725									
COG13	.722									
COG8	.696									
COG2	.683									
COG6	.640									
COG9	.608									.400

COG1	.535								
MEM1		.830							
MEM2		.825							
MEM5		.823							
MEM4		.796							
MEM6		.788							
MEM8		.688							
MEM9		.568							
MET7			.686						
MET2			.686						
MET1			.684						
MET6			.675						
MET4			.672						
MET8			.658						
MET9			.650						
MET5			.608						
AFF1				.786					
AFF6				.769					
AFF4				.766					
AFF2				.753					
AFF3				.736					
AFF5				.423					
COM5					.857				
COM6					.843				
COM1					.832				
COM2					.757				
COM4					.543				
SOC6						.767			
SOC5						.758			
SOC3						.748			
SOC1						.670			
SOC2						.633			
SOC4						.482			
MEM7		.422					.571		
MEM3							.475		
COG14	.474							.624	
COG10	.565							.573	
MET3									.672
COM3									.654

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 a. Rotation converged in 8 iterations.

Table 3: An extract of the total variance explained when 46 items were included

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	9.548	20.755	20.755	9.548	20.755	20.755	6.465
2	4.458	9.691	30.447	4.458	9.691	30.447	4.571
3	3.777	8.210	38.657	3.777	8.210	38.657	3.889
4	3.008	6.539	45.196	3.008	6.539	45.196	3.481
5	2.521	5.481	50.677	2.521	5.481	50.677	3.343
6	1.823	3.963	54.641	1.823	3.963	54.641	3.166
7	1.131	2.458	57.099	1.131	2.458	57.099	1.169
8	1.081	2.351	59.449	1.081	2.351	59.449	1.163
9	1.003	2.179	61.629	1.003	2.179	61.629	1.103
10	.975	2.119	63.747				
46	.150	.327	100.000				

Table 4: Loadings of the 46 items on the nine factors

	Rotated Component Matrix ^a								
	Component								
	1	2	3	4	5	6	7	8	9
COG5	.842								
COG7	.838								
COG11	.830								
COG12	.819								
COG3	.742								
COG13	.741								
COG4	.721								
COG8	.710								
COG2	.705								
COG6	.629								
COG1	.558								
MEM1		.833							
MEM5		.823							
MEM2		.822							

MEM4		.797							
MEM6		.793							
MEM8		.702							
MEM9		.569							-.445
MET7			.706						
MET6			.680						
MET9			.674						
MET2			.673						
MET8			.671						
MET4			.666						
MET1			.658						
MET5			.596						
COM5				.862					
COM6				.847					
COM1				.834					
COM2				.763					
COM4				.536					
AFF4					.787				
AFF1					.787				
AFF2					.758				
AFF6					.757				
AFF3					.748				
SOC6						.768			
SOC5						.757			
SOC3						.742			
SOC1						.711			
SOC2						.610			
MET3							.705		
COM3								.594	
SOC4								.574	
AFF5								-.444	
MEM3									.618

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

Table 5: An extract of the total variance explained when 45 items were included

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	9.467	21.038	21.038	9.467	21.038	21.038	6.451
2	4.438	9.861	30.899	4.438	9.861	30.899	4.377
3	3.680	8.178	39.077	3.680	8.178	39.077	3.853
4	2.983	6.630	45.706	2.983	6.630	45.706	3.483
5	2.515	5.589	51.295	2.515	5.589	51.295	3.367
6	1.789	3.976	55.271	1.789	3.976	55.271	3.217
7	1.121	2.492	57.763	1.121	2.492	57.763	1.170
8	1.060	2.355	60.118	1.060	2.355	60.118	1.135
9	.980	2.179	62.297				
45	.151	.336	100.000				

Table 6: Loadings of the 45 items on the eight factors

	Rotated Component Matrix ^a							
	Component							
	1	2	3	4	5	6	7	8
COG5	.837							
COG7	.833							
COG11	.832							
COG12	.822							
COG3	.753							
COG13	.736							
COG4	.730							
COG8	.711							
COG2	.700							
COG6	.621							
COG1	.555							
MEM1		.843						
MEM5		.838						
MEM6		.822						
MEM2		.815						
MEM4		.791						
MEM8		.728						
MEM3								

MET7			.700				
MET8			.683				
MET6			.682				
MET9			.678				
MET4			.666				
MET2			.665				
MET1			.651				
MET5			.593				
COM5				.862			
COM6				.844			
COM1				.833			
COM2				.762			
COM4				.545			
AFF1					.789		
AFF4					.783		
AFF6					.760		
AFF2					.751		
AFF3					.747		
AFF5					.417		
SOC6						.755	
SOC3						.752	
SOC5						.738	
SOC1						.687	
SOC2						.634	
MET3							.694
SOC4						.407	.569
COM3							.467

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Table 7: An extract of the total variance explained when 43 items were included

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	9.316	21.666	21.666	9.316	21.666	21.666	6.441
2	4.419	10.278	31.943	4.419	10.278	31.943	4.228
3	3.579	8.323	40.267	3.579	8.323	40.267	3.869
4	2.948	6.856	47.123	2.948	6.856	47.123	3.461
5	2.514	5.847	52.969	2.514	5.847	52.969	3.397
6	1.725	4.012	56.981	1.725	4.012	56.981	3.053
7	1.118	2.600	59.581	1.118	2.600	59.581	1.170
8	.997	2.320	61.901				
43	.154	.359	100.000				

Table 8: Loadings of the 43 items on the seven factors

Rotated Component Matrix ^a							
	Component						
	1	2	3	4	5	6	7
COG11	.835						
COG5	.834						
COG7	.831						
COG12	.826						
COG3	.762						
COG4	.736						
COG13	.733						
COG8	.711						
COG2	.698						
COG6	.615						
COG1	.550						
MEM1		.841					
MEM5		.838					
MEM6		.826					
MEM2		.811					
MEM4		.791					
MEM8		.728					

MET7			.697				
MET6			.686				
MET2			.676				
MET8			.676				
MET4			.664				
MET9			.661				
MET1			.660				
MET5			.598				
COM5				.860			
COM6				.845			
COM1				.834			
COM2				.756			
COM4				.542			
COM3							
AFF1					.792		
AFF4					.779		
AFF6					.762		
AFF2					.749		
AFF3					.741		
AFF5					.449		
SOC3						.760	
SOC6						.758	
SOC5						.757	
SOC1						.702	
SOC2						.628	
MET3							.698

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 a. Rotation converged in 6 iterations.

Table 9: An extract of the total variance explained when 42 items were included

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	9.276	22.085	22.085	9.276	22.085	22.085	6.438
2	4.419	10.521	32.606	4.419	10.521	32.606	4.210
3	3.556	8.466	41.072	3.556	8.466	41.072	3.866
4	2.948	7.019	48.091	2.948	7.019	48.091	3.368
5	2.424	5.771	53.861	2.424	5.771	53.861	3.368
6	1.720	4.094	57.956	1.720	4.094	57.956	3.049
7	1.116	2.656	60.612	1.116	2.656	60.612	1.158
8	.945	2.249	62.861				
42	.157	.373	100.000				

Table 10: Loadings of the 42 items on the seven factors

	Rotated Component Matrix ^a						
	Component						
	1	2	3	4	5	6	7
COG5	.835						
COG11	.834						
COG7	.832						
COG12	.826						
COG3	.760						
COG4	.735						
COG13	.733						
COG8	.711						
COG2	.698						
COG6	.617						
COG1	.549						
MEM1		.845					
MEM5		.838					
MEM6		.826					
MEM2		.813					
MEM4		.792					
MEM8		.727					
MET7			.699				

MET6			.687				
MET2			.677				
MET8			.676				
MET4			.664				
MET9			.663				
MET1			.662				
MET5			.599				
COM5				.860			
COM6				.845			
COM1				.840			
COM2				.758			
COM4				.542			
AFF1					.793		
AFF4					.781		
AFF6					.763		
AFF2					.754		
AFF3					.747		
AFF5					.438		
SOC6						.767	
SOC3						.763	
SOC5						.760	
SOC1						.703	
SOC2						.631	
MET3							.693

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 a. Rotation converged in 6 iterations.

Table 11: An extract of the total variance explained when 41 items were included

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	9.253	22.567	22.567	9.253	22.567	22.567	6.373
2	4.416	10.770	33.338	4.416	10.770	33.338	4.223
3	3.546	8.648	41.985	3.546	8.648	41.985	3.834
4	2.897	7.067	49.052	2.897	7.067	49.052	3.416
5	2.416	5.893	54.945	2.416	5.893	54.945	3.323
6	1.719	4.193	59.138	1.719	4.193	59.138	3.008
7	1.013	2.472	61.609	1.013	2.472	61.609	1.083
8	.941	2.295	63.905				
41	.157	.384	100.000				

Table 12: Loadings of the 41 items on the seven factors

	Rotated Component Matrix ^a						
	Component						
	1	2	3	4	5	6	7
COG5	.860						
COG7	.848						
COG11	.812						
COG12	.792						
COG13	.739						
COG2	.721						
COG8	.710						
COG3	.707						.456
COG4	.684						.439
COG6	.654						
COG1	.577						
MEM1		.845					
MEM5		.838					
MEM6		.824					
MEM2		.815					
MEM4		.792					
MEM8		.727					
MET6			.697				

MET7			.697				
MET1			.678				
MET2			.673				
MET4			.668				
MET8			.665				
MET9			.650				
MET5			.615				
COM5				.864			
COM6				.847			
COM1				.844			
COM2				.760			
COM4				.551			
AFF1					.791		
AFF4					.784		
AFF6					.768		
AFF3					.756		
AFF2					.746		
AFF5							
SOC6						.770	
SOC5						.766	
SOC3						.756	
SOC1						.716	
SOC2						.616	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Table 13: An extract of the total variance explained when 10 items were included

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.301	43.014	43.014	4.301	43.014	43.014	3.577
2	1.967	19.670	62.683	1.967	19.670	62.683	2.691
3	.983	9.832	72.515				
4	.586	5.865	78.380				
5	.458	4.576	82.955				
6	.431	4.314	87.270				
7	.381	3.807	91.076				
8	.336	3.360	94.436				
9	.310	3.104	97.540				
10	.246	2.460	100.000				

Table 14: Loadings of the 10 items on the two factors

	Component	
	1	2
	PAT4	.873
PAT3	.862	
PAT5	.831	
PAT1	.801	
PAT2	.791	
NAT3		.848
HAT5		.809
NAT2		.776
NAT4		.758
NAT1		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table 15: An extract of the total variance explained when 18 items were included

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.909	32.829	32.829	5.909	32.829	32.829	4.202
2	2.437	13.536	46.365	2.437	13.536	46.365	3.979
3	1.000	5.558	51.923	1.000	5.558	51.923	1.165
4	.947	5.264	57.187				
5	.909	5.050	62.237				
6	.793	4.407	66.644				
7	.727	4.039	70.684				
8	.709	3.937	74.620				
9	.619	3.442	78.062				
10	.610	3.387	81.448				
11	.558	3.100	84.549				
12	.511	2.837	87.385				
13	.495	2.749	90.134				
14	.438	2.435	92.569				
15	.417	2.317	94.887				
16	.393	2.181	97.068				
17	.321	1.785	98.852				
18	.207	1.148	100.000				

Table 16: Loadings of the 18 items on the four factors

	Rotated Component Matrix ^a		
	Component		
	1	2	3
INR2	.857		
IDR1	.841		
EXR3	.749		
EXR2	.743		
INR1	.736		
IDR2	.631		
INR3	.574		
IMA3		.723	
IMK2		.712	
IMS1		.707	

IMA2		.682	
IMA1		.681	
IMK3		.644	
EXR1		.638	
IMS2		.603	
IMS3			
IMK1			.828
IDR3			

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Table 17: An extract of the total variance explained when 16 items were included

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.757	35.979	35.979	5.757	35.979	35.979	4.145
2	2.346	14.664	50.643	2.346	14.664	50.643	3.958
3	.987	6.167	56.810				
4	.808	5.052	61.862				
5	.742	4.638	66.500				
6	.720	4.499	70.999				
7	.646	4.035	75.034				
8	.613	3.829	78.863				
9	.562	3.513	82.376				
10	.517	3.230	85.606				
11	.508	3.172	88.778				
12	.446	2.789	91.567				
13	.426	2.664	94.231				
14	.394	2.462	96.693				
15	.322	2.011	98.704				
16	.207	1.296	100.000				

Table 18: Loadings of the 16 items on the two factors

Rotated Component Matrix^a

	Component	
	1	2
INR2	.857	
IDR1	.847	
EXR3	.749	
EXR2	.748	
INR1	.733	
IDR2	.621	
INR3	.603	
IMK1		
IMK2		.738
IMS1		.734
IMA3		.716
IMA1		.698
IMA2		.697
EXR1		.639
IMK3		.618
IMS2		.594

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.