TEACHER CHANGE
IN SCIENCE EDUCATION
IN A VIETNAMESE UNIVERSITY

A thesis presented in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Education

at Massey University, Manawatu

New Zealand

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2014

Abstract

This research investigated the ways in which Science lecturers changed their teaching strategies to enhance active learning in English for Specific Purposes (ESP) classes. It also included the examination of the beliefs of the eight lecturers about active learning, their change process, and the factors that influenced their beliefs about change. The qualitative action research study was conducted through interviews, observations, and planning meetings over three sequential semesters.

The findings of the present study revealed that participating lecturers underwent varying degrees of positive pedagogical shift, from traditional lecturing to an active learning approach. Their positive beliefs about active learning were primarily related to student-centredness and classroom interaction. The collaboration with the researcher also allowed the lecturers to understand more about the roles they played as agents of change and to implement interactive activities relevant to their current practice.

This thesis aims to contribute to the knowledge of teacher change in ESP by developing a holistic theoretical model of the intertwined linkage of lecturer beliefs, and their professional roles as well as contextual factors. Understanding the dynamic relationships within this holistic model provides insights into the nature of teacher change as a process of personal learning and professional growth in relation to social practice.

Teacher change towards more active learning of students is connected to the Vietnam government's goals of reforming teaching and learning in higher education. Thus, the present findings suggest a need for further action research into the positive impact in a wider community of ESP teaching. Insights into the beliefs about support for teacher change led to the implications and recommendations for ESP lecturers, Science lecturers, and policy makers.

Acknowledgements

I would like to extend my heartfelt appreciation to many people who have contributed to my action research journey.

I wish to express my deep gratitude and respect to my PhD supervisors, Dr. Penny Haworth and Associate Professor Sally Hansen for their generous supervision time, insightful comments, and constant support and encouragement. Their constructive feedback on the drafts of my thesis has allowed me to sharpen my research knowledge and complete the thesis. Their challenge by raising 'so what' questions or requiring me to tease out some concepts of the study has pushed me to work harder and improve the quality of my research and writing skills.

I am indebted to New Zealand Aid Programme for awarding me a scholarship to conduct my research. Thanks go to Sylvia Hooker, Jamie Hooper, Leuaina Vaai-Hatier and other Massey staff for their timely support. Thanks also to Nguyen Anh Tuan and Truong Vo Dung for their facilitation of the paperwork for my study.

I want to acknowledge Dr. Jenny Poskitt who taught me qualitative research. I would like to thank the staff at the Institute of Education for their support. I am appreciative of the homely feeling brought by the Truyen family. Thanks also go to Nguyen Van Long, Tran Cong An, Ly Hong Phuc, Lien and Gary Pederson, and Ngo My Hanh for their friendship and get-togethers.

I am grateful to all lecturers who volunteered to participate in this project. Their considerable time, strong interest, and enthusiasm were invaluable to my research.

I am deeply indebted to my parents and siblings who always stood by my side throughout my PhD journey. For my wife, Huynh Thi Trang and my son, Nguyen Buu Toan, their encouragement and support have inspired me to finish this thesis. I love you all.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

This thesis reports on a qualitative participatory action research inquiry into the ways in which teacher change occurred in English for Specific Purposes (ESP) Science classes at a Vietnamese university. The main goal of this study was to investigate how Science lecturers conceptualised and managed change to include more active teaching approaches to enhance student learning and meet the Vietnam government's goals of reforming teaching and learning in higher education. In particular, the study examines lecturer beliefs about active learning, their change process, and the key factors that influenced their beliefs about change.

I have been interested in leading and encouraging changes in curriculum and instruction. In particular, during my past teaching, I had conducted two research projects. The first project was an action research study on how to facilitate reading strategies for students in an in-service educational centre. The second one focused on developing oral communication skills for intermediate students at the Centre for Foreign Languages at a university. These experiences inspired me to do more research on changes in practice. As a dedicated lecturer over 25 years, I wanted to have the opportunity to share my knowledge in teaching methods, particularly in ESP and to contribute to change in this area. Through this PhD journey, as a researcher, I provided support for lecturers by working alongside them, reflecting with them on their practice, and developing new teaching strategies to enhance their capacity for change, thus promoting more active student learning. The focus for the study is Science lecturers who instruct ESP students.

In this chapter, the rationale for the study is presented and a detailed account of the historical influences on higher education in Vietnam is described. These trajectories of social, political, and economic contexts have become the catalyst for teacher change in the course of educational development. There is also a description of the current

government policy about active learning which underpins this study. Finally, the chapter concludes with a summary of key points and outlines the structure of the thesis.

1.2   Rationale and significance of the study

This study is based on the perspective of change as a process of learning and growth developed by Clarke and Hollingsworth (2002). Clarke and Hollingsworth proposed a dynamic model of teacher change that comprises four domains: personal (teacher knowledge and beliefs), practice (experimentation), consequence (outcomes), and external (support). Change in one domain influences change in another through the processes of action and reflection. Clarke and Hollingsworth noted that experimenting with new teaching approaches can change lecturer beliefs about the outcomes, and experimentation may be sustained through providing lecturers with support. Thus, their views confirmed the need to support the lecturers in the present study to change their teaching strategies.

Although a search of the literature identified that there has been research on teacher change, no studies were found on teacher change in ESP classes within a non-western context such as Vietnam. This study therefore fills the gap in research about the impact of teacher change in ESP classes where both language and Science lecturers are Vietnamese.

There is an increasingly pressing demand for active learning in higher education in Vietnam (T. N. Pham, 2010). However, teaching in Vietnamese universities is still largely based upon traditional lecturing. In particular, active learning requires a change to lecturers' roles and their instructional strategies, which may need support. At the same time, there remain three challenging issues in the context of teaching ESP at a university which may trigger teacher change: the scarcity of teaching materials; the range of student English language proficiency; and time constraints.

Scarcity of teaching materials
Lecturers in Vietnamese universities often have to develop their own teaching materials because no guidelines or framework are provided for the course of study. Both lecturers

and students find this very demanding. The lecturer instinctively thinks of what can be applicable to, or adapted from, or supplementary to the textbook he or she is using for a particular subject. Students, therefore, only learn what their lecturers present to them or assign them to do on a particular day. The department head generally decides if each lecturer's material is aligned with the existing curriculum. However, in reality the content knowledge of the texts of a particular subject and that of the supplementary materials are frequently left unchecked. This laissez-faire approach may have implications with respect to quality and relevance of materials, and often students are not engaged in active learning. Moreover, student learning depends largely on the commitment and capability of lecturers to design materials that motivate active learning.

Range of student English language proficiency

Student English language proficiency varies because there is a big difference in education levels among learners from different provinces. Students who have seven full years of English study at high school outperformed those who have three years of English instruction. Students from some rural or remote areas, who may have taken only a three-year program of English at high school, may find it difficult to comprehend even a simple text. Other students may have had no English classes at all at high school. This group may find the study of English the most challenging and is unlikely to catch up with the others who have had longer periods of studying English. These differences in English proficiency are likely to influence the beliefs that lecturers hold about change to implementing more active learning activities.

Time constraints

The time available for students to study ESP at university is limited. In reality, students are taught with only 30 fifty-minute periods of ESP for their specialised subject in a 15-week semester. They often learn only basic parts of the content knowledge. As a result, reading and vocabulary are predominantly used in lecturers' syllabi, and speaking activities or tasks are usually not encouraged in the classroom.

This study contributes to the body of academic knowledge about how lecturers change their teaching strategies in order to align with the increasing pressure on university lecturers to place greater emphasis on more active learning.

The study offers unique insights into the nature and the process of teacher change and suggests that policy makers and university leaders strategise actions for change. As the research takes a participatory approach, the findings were also intended to benefit participating lecturers, Science lecturers, and the university.

Teacher change, an on-going process of action and reflection, is closely interrelated to professional growth. Lecturers can discover the worth of collaboration with others through participatory action research. In particular, this research provides them with the ability to develop new teaching strategies that can meet the needs of students and respond to the university directives for curriculum and instruction innovation.

This study also provides ESP lecturers with insights into the potential for making use of participatory action research to improve their own practice and promote student learning. Through collaborative practice, new teaching strategies will enable lecturers to learn and grow in their professional knowledge.

Finally, this study is significant as it provides insights into understanding of the ways in which ESP lecturers experienced the change process to enhance active learning. By doing so, the university can gain recognition among other institutions, and gain accreditation in Vietnam's higher education.

The following section provides the context for the study. Historical background is important and relevant for this study. Historical and political changes not only influence how higher education in Vietnam has been developed but they also contribute to government policy changes in regard to active learning.

1.3   Historical influences on higher education in Vietnam

Vietnam has experienced a long history of cultural change. Its progress has been shaped by four key external influences: the Chinese Confuciuan influence, French colonialism, the Soviet Union model and the influences of the West. Figure 1.1 shows the changing

political influences over time. More detail on the historical development is included in Chapter Two.

Figure 1.1 Changing political influences over time

Vietnam was strongly influenced by Confucianism for about 2,000 years with regard to social structure and education (Welch, 2010). Over 1,000 years of Chinese dominance (111 B.C- 938), Confucianism attached great importance to education for highly regarded positions (or mandarins), wise dignitaries, royal relations and elite leaders (L. H. Pham & Fry, 2004b). Civil service examinations were held to recruit 'talents' to become mandarins to govern the state during the feudal dynasties. The examinations were used to select people who would preserve the state archives and record the edicts (N. D. Nguyen, 1963). However, only a limited number of elites and aspiring students from poor families could access education to sit for examinations. This system also resulted in a tradition of great thirst for knowledge and learning which persists up to this time (L. H. Pham & Fry, 2004a).

In the 17th century, Alexander de Rhodes, a French missionary and scholar helped Vietnam to develop a Romanised script for the Vietnamese language, known as Quốc Ngữ (M. H. Pham, 1998). During the French domination from the latter half of the 19th century until 1945, Vietnam witnessed a major shift in its higher education system with regard to the new writing system (national language), the school structure and opportunities to study in France.

The advent of a new writing system paved the way for the increase of literacy rates in Vietnam and also the accessibilty of scholastic learning (J. D. London, 2011). This writing system also raised mass awareness of the social and political change embedded in education (L. H. Pham & Fry, 2004a). Ironically, the French used the new script with the intention of expanding their control and then ending the Confucian institutions although the anti-colonial intelligentsia desired to preserve the Chinese script (J. D.

London, 2011; Welch, 2010). The French language and the new Vietnamese writing system (Quốc Ngữ) were simultaneously used; the latter persists up to the present day as Vietnam's official written language.

In the early 20th century, there were some specialist institutions in Hanoi (Welch, 2010). For example, the School of Medicine and Pharmacy was founded in 1902, and other Colleges (1917), as well as Law and Engineering (1918). In the 1920s, easier access to overseas experience and learning led to increasing numbers of Vietnamese students who went to France for academic study. Among these students were the intelligentsia who strived for nationalism or independence from colonialism. The overseas experiences helped Ho Chi Minh, a revolutionary leader, to devote himself to the overthrow of the French colonial rule over Vietnam (L. H. Pham & Fry, 2004a).

The Chinese and French influenced higher education in Vietnam in several ways. First, while the Chinese attempted to spread their written characters as Vietnamese national writing, the French faciliated the development of Vietnamese nationalism towards international eminence (N. D. Nguyen, 1963). Second, under the Chinese imperial rule, higher education was restricted to only a small number of elites and wealthy people. However, the French policies in education provided the intelligentsia, although just a relatively small group, with greater exposure to educational equity. Also, these policies allowed for more comprehensive ways of thinking and understanding about the world's academic knowledge which improved higher education in Vietnam in the long run. While the French education policies played a part in changing higher education in Vietnam, their investment in tertiary education was very little (Vallely & Wilkinson, 2008).

In 1954, the partition of Vietnam under the Geneva Agreement into North and South Vietnam led to two different systems of higher education. The higher education system in the North received assistance from the socialist states, chiefly from the Soviet Union; while that of the South was influenced by the United States (L. H. Pham & Fry, 2004a; Welch, 2010). Vietnamese was used as the language of instruction throughout the country.

In the North, the increase of enrolments in higher learning, the establishment of specialist institutions and overseas study opportunities characterised a major breakthrough for Vietnamese higher education. According to Welch (2010), from 1959 to 1975, student enrolments increased from 8,000 to 50,000 and 42 institutions were founded from 1970 to 1975. Between 1955 and 1975, about 30,000 students were sent to socialist countries to study, 55 per cent of them in the Soviet Union (Dang, 1997). Russian was the first foreign language used in higher education institutions (Do, 2000). Although the contribution of the former socialist states, notably the Soviet Union, was undeniably worthwhile, the influence of the Soviet model of specialised learning did not meet the increasingly changing needs of a developing market economy (Welch, 2010).

In contrast to specialist institutions, the comprehensive higher education institutions and community colleges that existed in the South, were characteristic of the American style (Welch, 2010). By the 1970s, there were four multidisciplinary universities: Saigon University, Can Tho University, Hue University, and Thu Duc Polytechnical University. In 1975, three public community colleges were established: Tien Giang (My Tho), Duyen Hai (Nha Trang, Khanh Hoa Province), and Da Nang as well as eleven private tertiary institutions (Sloper & Le, 1995). The United States influenced these institutions to allow for greater access and practical learning and experience to improve the economic development of Vietnam. Or in other words, in terms of educational equity, more opportunities were provided to accommodate the diverse learning needs and preferences of the community.

The high enrolments and diversity of institutions were only the beginning of the change process in higher education within the social, political and economic contexts of Vietnam before the national educational system experienced the slow pace of growth.

In 1975, after the reunification of Vietnam, the two earlier systems of higher education were merged into one (Welch, 2010). At that time, there were 69 public universities. The aftermath of thirty years of war confronted the country with many dilemmas. The most appalling event was the loss of 3.4 million Vietnamese lives (Morris, 2003), resulting in a lack of human resources. Other challenges included the economic embargo by the US, the centralised economy, high inflation, an exodus of intellectual

migration and the lack of lecturers, all of which urged Vietnamese authorities to rethink their future and policies in relation to political and socioeconomic changes (L. H. Pham & Fry, 2004a). Due to the dire economic crisis and the merger of different systems of education, the question of the quality of education was no doubt an issue. The following sections summarise the significant developments in higher education over the past two decades.

Progressive reforms in higher education have played a key role in promoting the development of Vietnam to keep pace with the international community. Since 1986, there has been a renovation policy (*chính sách đổi mới*) that set a turning point in socioeconomic change from the centralised economic model to a socialist-oriented market economy. The Vietnamese government has been investing in education and curriculum innovation to meet the escalating demand for high quality education and specialised knowledge. In addition, many government policies, strategies and bilateral projects have been initiated to deal with the current challenges in educational settings: low quality of education and outdated curricula (National Assembly of Vietnam, 2005) and the hierarchical role of lecturers in the teaching-learning process. The progress since 1986 and the current challenges in higher education are described in detail below.

After 23 years of implementing policy reforms, notable breakthroughs in higher education have been made (Hayden & Lam, 2010). These developments include the shift in instructional models, governance, institutional diversity and student enrolment, overseas study opportunities and quality accreditation.

Instructional model

The shift from the Soviet model of specialisation to a West-oriented one has generated new models that allow for other ways of thinking about teaching and learning. One related change is that English as a foreign language is now taught at tertiary institutions, as well as French and Chinese.

Governance

Another change reported as a result of the Development Projects was the shift from government centralization to decentralization of governing at the institutional level (The

World Bank, 2010). While the greater autonomy and accountability for performance was given to the universities and colleges in Vietnam, these institutions were also held accountable for the management and governance of both academic curricula and quality of services.

Institutional diversity and student enrolment

In the 1990s, there was the dramatic increase in the number of universities and colleges and student enrolments. Before 1993, Vietnam had a few universities offering programmes only in the humanities, social and natural sciences, and most of them were mono-disciplinary colleges. Towards the end of 1993, various new types of higher education institutions were established. These types included multi-disciplinary universities, open universities, people-founded universities and colleges, and community colleges. Fourteen 'key universities' were designated and expected to be the leading ones that promoted research and potentiality, as noted by Hayden and Lam (2007b). In 1993, only nine of 103 higher education institutions (HEIs) were considered to be universities (Hayden & Lam, 2010). But, by 2010, there were 414 HEIs, of which 334 were public universities and 80 non-public universities (GSO, 2010), making an increase of 400% within two decades.

The student enrolment in HEIs also increased approximately 14 times, from 162,000 students in 1993 to 2.162 million in 2010, accounting for the impressive change of the gross enrolment rate from two per cent to 22 per cent (GSO, 2010). This rate has been projected to increase further in the coming years.

Overseas study opportunities

The opportunities for overseas studies have also marked a step forward in reforming higher education in Vietnam. Every year, through the national budget, the government sends approximately 700 of Vietnam's best students abroad for undergraduate and graduate studies (Ministry of Education and Training, 2009). Many foreign countries provide scholarships for Vietnamese students to study at their higher education institutions. For example, the Vietnam Education Foundation programme provides fellowships for Vietnamese students to study in the United States in science and technology, totalling 378 students during 2003-2011. The annual budget for this

programme is US $5 million, and this programme includes visits by US professors to Vietnam to lecture and conduct research projects (Vietnam Education Foundation, 2012).

Every year, more than 200 Vietnamese students receive scholarships to study in Australia. For example, in 2010, 263 scholarships were offered for graduate studies and 45 fellowships for training and work attachments with Australian organisations (Ausaid, 2011). The estimated cost of the scholarships during 2010-2017 is 71.4 million. In addition, many students finance themselves to study abroad. By 2005, 2,379 students enrolled in Australian universities (AEI, 2006). About twice this number of scholarships are made available to Vietnamese students from universities and their bilateral programmes or foundations (K. Kelly, 2000; Welch, 2010). The New Zealand Aid Programme has also offered 30 post-graduate scholarships for Vietnam since 2011. The number of Vietnamese students in New Zealand has increased from 184 in 2000 to 1,517 in 2009 (Education New Zealand, 2011). With the growing trend of overseas studies, it is likely that the quality of education will improve alongside the quality assessment that is being undertaken.

Quality accreditation

Central to the success of the higher education reform in Vietnam is the establishment of quality accreditation centres across the universities. In 2008, according to the Draft Vietnam Education Development Strategy 2009-2020 (Ministry of Education and Training, 2008), 114 of 163 universities implemented an accreditation scheme funded by the World Bank's Higher Education Project 1 (HEP1) and the Dutch government's Professionalising Quality Improvement project (ProfQim) (Westerheijden, Cremonini, & van Empel, 2010). Forty universities underwent external audits (Ministry of Education and Training, 2008). This type of endorsement has made policy makers, educational administrators, and particularly university lecturers, think about and upgrade their own curriculum and instruction for quality enhancement and social responsibility.

The historical review has important implications and relevance for the reformation of the higher education system in Vietnam. The notable progress in higher education has

confirmed its contributions to the social and economic development; however, questions about the quality of education in relation to curriculum and instructional methods still remain. In responding to the need for teacher change in their roles and strategies, the inclusion of active learning is a key focus of the higher education reformation.

1.4   Current government policy about active learning

The Education Law of Vietnam indicates that educational development is the first priority of the national policies since the quality of education at all levels (from primary to tertiary levels) is still relatively low (National Assembly of Vietnam, 2005). Nonetheless, in order to enhance the quality of education, particularly active learning, the Education Law of Vietnam further highlights that "university education shall help students acquire in-depth professional knowledge and fluent practical skills in their profession with the ability to work independently and creatively as well as to solve problems in the field of study" (National Assembly of Vietnam, 2005, p. 16). It is evident that this government policy addresses the importance of providing students with opportunities to take responsibility for their learning process and practical applications as problem solvers or autonomous learners. In particular, with regard to the instructional methods, Article 40.2 of the Education Law of Vietnam addresses the need for "the advancement of self-consciousness in study, of the ability for self-study, self-teaching, developing creative thinking, drilling of practical skills, facilitating students in participating in research, experimentation and application" (p. 17). These views that focus on student involvement and their active participation in constructing new knowledge and communicating that knowledge into practice are discussed in more detail in section 2.3 on active learning.

Although the Vietnamese government encourages change to meet the need for global integration and modernisation of the economy, there are still some existing problems in education. In Vietnam, since curricula are mostly designed only for examinations, creativity, practicality, career orientation and the needs of learners are not addressed (Ministry of Education and Training, 2006b). The Vietnamese government also asserts the need to have a highly qualified workforce, linking change to lecturers' careers in line with social development. However, quality can be affected by the student-staff

ratio, as noted by Harman and Nguyen (2010). Harman and Nguyen claim that Vietnam's student-staff ratio of 30:1 is considered too high in comparison with other Asian countries. For example, the student-staff ratio in the Philippines is 23:1, Malaysia 20:1, and Indonesia 15:1 (The World Bank, 2008). In addition, lecturers with limited levels of English are unable to access updated knowledge and cannot use new teaching methods (Hayden & Lam, 2007a; L. H. Pham & Fry, 2004a). Therefore, there is increased expectation for more active learning (or interactive teaching) and learning how to learn in higher education in Vietnam, as stated by the Ministry of Education and Training (2005). In particular, active learning required the lecturers to change not only their thinking from traditional lecturing towards more interactive teaching (Harman & Nguyen, 2010) but also a change to their roles.

Traditionally, the teacher has played a dominant role in classroom practices with little opportunities for students to learn to creatively construct new knowledge themselves. The Confucian teaching ideology places the teacher as the role model and in a hierarchical position over the students. Teaching has always been highly respected as reflected in Vietnamese proverbs such as 'a person is seen as your teacher if he or she teaches you one word or even part of a word' or 'one cannot do anything without a teacher' (Breach, 2004). The respect for lecturers as knowledge providers suggests that to some extent a distance between the teacher and the student may exist (e.g., Phan, 2008). Students are thus not challenged to ask questions, express their own views and say what they know or understand about the subject matters they are taught. As a result of this passive way of learning, students defer to whatever the teacher presents to them (T. N. Pham, 2010; D. C. Thomas & Inkson, 2003). This passive approach suggests that students are not engaged in thinking about what to learn and how to learn in a true sense. Therefore, the current shift from traditional views towards a student-centred active learning approach is challenging for lecturers and students in higher education institutions.

Recently, in order to solve the challenges specified above, two government policy documents, the Higher Education Reform Agenda (HERA) and Education and Training Development Strategy 2010 (VETDS), were released. HERA was a strategic plan for significant reform of the higher education system in Vietnam by 2020 (Hayden & Lam,

2007a) . Because higher institutions were granted autonomy (Hayden & Lam, 2007b), variations emerged in curricula, programmes, and methods across the higher institutions in order to meet the socio-economic needs for qualified human resources in the course of socio-economic development.

To support the implementation of HERA, two important Development Projects, funded by the World Bank, known as the Higher Education Development Policy Programs (HEP1 and HEP2) were implemented to provide additional assistance to improve the quality in teaching and increase the research capacity in universities (Brooks, 2010; Sheridan, 2010). The first of these policies was initiated from 1998 to 2007; and the second took place from 2007 to 2012. Both projects focused upon the improvements of curricula, teaching content, and interactive methods and staff training (The World Bank, 2010). An emphasis on active learning, part of the teaching and learning processes, is being encouraged. Further details on active learning will be discussed in the following chapter.

1.5   Summary

This chapter has examined the key influences on higher education in Vietnam. It has described the complexities and the challenges after more than two decades of applying the policy changes. The need for change, particularly including interactive strategies in ESP university classes, sets high demands for the role of the lecturers. They are now expected to provide an active learning environment for students to maximise the use of English to construct their new knowledge. The following chapter will review literature related to the study.

1.6   Thesis structure

This thesis is organised into six chapters. Chapter One explores the key international influences on higher education in Vietnam, which was the key impetus for the investigation into teacher change in ESP practice. The need for active learning in ESP university classes sets high demands for the role of Science lecturers. Chapter Two reviews the literature on active learning, lecturer beliefs, teacher change, lecturer

reflection, and presents research questions that guide the study. Chapter Three examines the qualitative action research methodology and details the investigative tools that are used to collect data. Chapter Four presents the findings of the eight case studies on teacher change in ESP teaching practice within the tertiary context. Chapter Five discusses the findings of the study. Finally, Chapter Six concludes the thesis by summarising the key findings and drawing conclusions and implications for theory and practice, as well as recommendations for future research.

CHAPTER TWO
LITERATURE REVIEW

Change is mandatory; growth is optional (Fullan, 2003, p. 71)

2.1 Introduction

This study aims to investigate the ways in which lecturers change their teaching strategies in English for Specific Purposes (ESP) classes to align with the government's goals of reforming teaching and learning in higher education. This chapter therefore reviews the literature relevant to the nature of teacher change in a Vietnamese context.

This chapter begins by exploring the educational influences that have contributed to the current approach to teaching at higher education institutions in Vietnam. The concept of active learning is then defined with reference to international literature. Next, a detailed account of the nature of lecturer beliefs is examined, including core and peripheral beliefs, self-efficacy beliefs, as well as the constructs of identity, agency, attribution theory and locus of control. Following this, a synthesis is provided of the key themes from five models of teacher change and professional growth, and finally there is a brief discussion of teacher learning and teacher reflection in relation to the change process. The chapter concludes with a summary of the key points and the research questions to frame the methodological design, which will be discussed in Chapter Three.

2.2 Educational influences that have contributed to the current approach

This section focuses on how four different historical phases led to the evolution of the current higher educational system of Vietnam. These influences of the Chinese Confucianism, French colonialism, the Soviet Union and Western style of learning (see

Chapter 1) represent a shift from traditional lecturing to an active learning approach which is significant for this study.

Learning depends on the context in which students are involved (Bonwell & Eison, 1991; Simons, 1997). Table 2.1 presents the educational influences over time that have contributed to the current approach in Vietnam. The continuum from traditional views on teacher-centred learning to the active learning approach is then discussed with reference to languages, learning philosophy, focus of education, and structure of education.

Table 2.1 Educational influences that have contributed to the current approach to teaching in Vietnam

Dominant influence	Chinese Confucius	French	*North*: Soviet Union *South*: USA	Reunification	Current
Languages	Chinese	French Chinese Vietnamese	Russian, English French Vietnamese	Russian, English French, Chinese Vietnamese	English, French Chinese, German, Japanese Vietnamese
Learning philosophy	collectivism	Western style assimilation	individualism oriented	socialist education	individualism
Focus for education	oral memorisation understanding examinations	literacy (3%) as results of resistance and poverty	specialisation lecturing more theory active learning	restructured system specialisation lecturing	credit system lecturing active learning
Structure of education	village based	colonisation	centralisation community college	centralisation	decentralisation institutional autonomy privatisation

teacher-centred ⟶ active learning approach

2.2.1 Vietnamese traditional views on learning

Since the establishment of the first national university in 1076, Confucian thought has shaped and influenced the higher learning of Vietnam in four underlying ways: language use, learning philosophy, approach, and structure.

The most important Confucian heritage is the use of Chinese characters (*chữ Nho*) alongside the Vietnamese script (*chữ Nôm)* which was developed in the 13th century in Vietnam formal education. The Chinese characters were mainly used in business and the Vietnamese scripts in literary writing (Sloper & Le, 1995). The use of Chinese characters retained its value until the 20th century. However, the two writing systems were utilised only by the elites and hence restricted the literacy of the common people (L. H. Pham & Fry, 2004a).

Another key impact on Vietnamese culture and education was the development of a scholarly class in village schools (Bui, 1985). In order to become mandarins, local students were trained to pass examinations. Owing to the long-established philosophy, all historical and literary works and official documents were written in Chinese characters, which may have prevented scholars from adopting new ways of thinking and practical aspects of knowledge (N. D. Nguyen, 1963). Although it was difficult for the poor to secure learning opportunites, village schools were a way for dedicated people to compete with others (Woodside, 1991).

Confucian philosophy aimed to promote a person's morality as well as academic success, which contributed to the country's socio-economic, political and cultural development. Thus, learning involved two dimensions of cultural variability: individualism and collectivism (Gudykunst, 2004; Gudykunst & Kim, 2003; Triandis, 1995).

Individualism is concerned with the idea of individuals valuing their personal goals over group goals; whereas, collectivism places an emphasis on the importance of group goals over individual goals (Triandis, 1995). Therefore, it can be argued that in individualist approaches, the idea of personal success (or decision-making process) is independent of the group; while in collectivist approaches, personal attainment is inseparable from that

of the group (Phillipson & Lam, 2011). Triandis (1995) further explained that people in individualistic cultures such as those of North America or those of Europe have personal tendencies and people in collectivistic cultures such as those of Asia, Africa and South America have collectivistic tendencies. Yet, it is hypothesised that people can have both individualist and collectivist traits in different balance (Gudykunst, 2004; Gudykunst & Kim, 2003; Triandis, 1995). This view suggests the existence of a continuum, with people being placed at any position on this, so they can have more of one characteristic and less of another.

In Vietnamese culture, however, learning is predominantly understood within the context of the construct of collectivism (Hofstede & Hofstede, 2005) which places a greater emphasis on the interdependence between personal attainment and value of social relationships. Thus, once one student passed the civil service examinations and was selected to become a court official or a mandarin, his whole family could benefit from this person's achievement in several ways, including particularly financial support and social recognition.

The learning approach in Confucian philosophy was assumed to be associated with understanding although it primarily consisted of oral memorisation and retention of information. The teacher transmitted knowledge to the students, who memorised and presented that knowledge in competitive examinations.

Modern western views of teacher-centred learning differ from the Confucian traditional learning approach in relation to passive knowledge transmission or learning by memorisation (Entwistle, 2003; Purdie, Hattie, & Douglas, 1996). In a Confucian approach, the memorisation of information has a positive place in the learning process, and this dynamic practice can also be viewed in terms of active learning. The notion of active learning is implied in the Chinese saying, 'If you read or repeat something a hundred times, you can understand that knowledge.' It is also said in a widely held Chinese maxim that "I hear and I forget; I see and I remember; I do and I understand" (Green & Taber, 1978, p. 889). Repetition or revisiting the content thus leads to the processes of both memorisation and understanding since repetition results in greater insight and generates meaning (Dahlin & Watkins, 2000).

While research has addressed the fact that memorisation and understanding are interconnected in the West these two notions are often seen as mutually exclusive (Kember, 1996; Marton, Dall' Alba, & Tse, 1996; P. Thomas & Bain, 1984). To the West, it appeared that Confucian learning was one-way communication because the focus was more on the role of the teacher as transmitter of knowledge.

A further insight, however, reveals memorisation also had limitations in Vietnamese education. In the traditional competitive examinations for personal success and administrative positions, a candidate for a doctoral degree in Vietnam could be asked to complete different tasks; for example, interpreting a text from Confucius's *Four Books* and *Five Classics*, writing a poem or a piece of rhyming prose, editing imperial communications and writing a dissertation on a topic decided by the king (N. D. Nguyen, 1963). Therefore, repetition and memorisation of knowledge or information alone could not satisfy the academic requirements.

Although learning by memorisation was indicative of a basic level of cognitive process, as noted in Bloom's (1956) taxonomy, this type of learning is an acknowledged part of Confucian legacy of great Vietnamese scholars over centuries such as Chu Văn An, Nguyễn Trãi, Nguyễn Bỉnh Khiêm, Phùng Khắc Khoan and Lê Quí Đôn, to name but a few. In particular, Nguyễn Du, Hồ Xuân Hương and Cao Bá Quát were widely known as the greatest writers and literature critics of the traditional education and socio-political commentaries (J. D. London, 2011).

While Confucian influence placed the role of a teacher at the centre of the learning process, this philosophy of education had relevance and there were epistemological implications for active learning in relation to individual success and social development. This may explain why the impacts of the two attributes discussed in the previous section in connection with individualism and collectivism, still remained under the French colonial influence.

2.2.2 The beginnings of Western influences on learning

The advent of *Quoc Ngu* as the national official language ushered in a new phase of literacy in Vietnam education and increased access to higher learning. Vietnamese and French were simultaneously used as media of instruction for learning and communication at higher education institutions (Altbach & Umakoshi, 2004). The French model was intended to replace the traditional ways of Confucian learning with more practically oriented learning (L. H. Pham & Fry, 2004b).

The spread of the French language aimed to assimilate the colonial education approach and ways of thinking into the mind of every Vietnamese. Paradoxically, this philosophy led to the rise of nationalism as part of independence from colonialism, but it also resulted in a sense of responsibility for independent learning (J. D. London, 2011; L. H. Pham & Fry, 2004b; Welch, 2010). In fact, Vietnamese students went to France for higher education and found a way to end the colonial domination of the French. However, only a small number of people obtained higher learning at this time.

Although the French learning philosophy aimed at bringing its civilisation to Vietnam (L. H. Pham & Fry, 2004a), some Vietnamese who held on to Confucian traditional ways of learning were opposed to the new type of colonial education that utlised Chinese characters and French language. Although no literature has been found that discusses the learning approach in higher education under the French colonialism, the teaching content was thought to be irrelevant and there was a lack of books and qualified lecturers (J. D. London, 2011; N. D. Nguyen, 1963).

The French education tended to be for elites and wealthy people who benefited the French colonisers. Paradoxically, gaining literacy was strongly linked to a rise in resistance to the French education by the poorer working classes. Evidence suggests that only three per cent of the population were regarded as literate in the early 1940s (M. H. Pham, 1998; Sloper & Le, 1995; Welch, 2010; Woodside, 1983). Under this colonial structure of education, only three higher institutions were founded (L. H. Pham & Fry, 2004b).

2.2.3   Soviet Union and United States influences on learning

During the 1950s and up to 1975, the separation of Vietnam into North and South resulted in new international influences from two systems of higher education: the Soviet Union in the North and the United States in the South.

In the North, the Soviet Union model of specialised education was implemented and Russian was the primary foreign language of instruction at mono-disciplinary institutions (agriculture, forestry, pharmacy and medicine). In addition, English was used in some universities (Denham, 1992). As far as the learning philosophy was concerned, individualism orientations as well as a focus on more theory with little application to practice featured in socialist education. The structure of education was also centralised with the Ministry of Education and Training.

In the South, together with the French model, the American style of learning was dominant at the multidisciplinary universities and community colleges and English was used as the main foreign language. French was also taught as a foreign language on a small scale. The active learning approach with a focus on individualism reflected the new learning values at these tertiary institutions, leading to the establishment of eleven private institutions (D. H. Nguyen, 1996; Sloper & Le, 1995) that met the diverse learning needs and preferences of the community in relation to educational equity (see Section 1.4).

2.2.4   Education after reunification

As stated in the historical context (see Chapter 1), the centralised structure of education, socialist-oriented learning philosophy, and lecturing were characterised as typical in the early higher education system in Vietnam. Still strongly influenced by the Soviet model throughout the country after reunification, Russian became the foreign language most dominantly used in higher learning institutions especially in the North; whereas English, French and Chinese were taught only in some institutions for academic purposes and overseas study opportunities. The purpose and quality of training programmes were reported to be neglected or inappropriate because of dire economic difficulties (J. D. London, 2011; Sloper & Le, 1995). Such challenging issues therefore could be assumed

to hinder lecturers from changing their traditional lecturing to an active learning approach.

2.2.5   Current approach

Since 1986, the shift from centralisation to a socialist-oriented market economy has resulted in major changes in the higher education system, particularly the widespread use of many foreign languages, the decentralisation of education, and interactive teaching.

With regard to the foreign languages, English has played the most dominant role in higher learning institutions, whereas French, Chinese, Japanese, and German are second options for only a small number of particular areas of study. Within the decentralised structure of education, a credit system (replacing the former subject-based system) is now promoted to meet the students' needs. Specifically, in terms of educational equity, this system provides students with more options in their studies and the possibility of transferring credits earned to other institutions.

The focus for Vietnam's education has turned to innovative instructional ways (J. D. London, 2011; Sloper & Le, 1995). In response to the learning needs of the students and the call for quality, an active learning approach has also been encouraged. However, teaching at universities in Vietnam is still mainly traditional lecturing (T. N. Pham, 2010) which is predominantly a teacher-centred approach. Changing to the active learning approach will challenge the traditional role of the lecturers who now have to provide students with a stimulating learning environment.

The following section defines active learning and its importance in the teaching and learning process. This is followed by a description of the construct of learner autonomy that has been recently adopted in Vietnamese education initiatives.

2.3   Defining active learning

Active learning has become an increasingly recognised term in the higher education system in Vietnam. There are a number of perspectives on active learning in the

literature. In this chapter, six key features of active learning are discussed. They are student involvement, shared knowledge, links to existing knowledge, student roles, integration of skills and a reciprocal teaching and learning process. These features reflect the Vietnamese government goals of reforming teaching and learning in higher education.

Firstly, active learning generally refers to student involvement in the learning process (Armstrong, 1983). By nature, this involvement implies that students take an active role as owners and generators of new knowledge rather than being merely passive receivers of information delivered by the lecturer.

Secondly, active learning involves building on shared knowledge of a specific event rather than passive knowing, so it is characterised by the idea of a communal act (Palmer, 1987). This concept suggests that learning can be more active if there is an interchange of knowledge between the lecturer and students (Boyer, 1991; Meyers & Jones, 1993; D. E. Pedersen, 2010) or if it involves an interactive learning environment and feedback on students' ideas (Holtzman, 2005). In addition, active learning occurs when students of different educational backgrounds and contexts bring to class different ideas and experiences about what they know (personal knowledge) and share with peers their understandings about the contents of a particular subject area. This type of knowledge makes learning an integral part of student life (Chickering & Gamson, 1987). It is necessary for students to accumulate knowledge of a specialised subject. Learning can become active and meaningful only when students know how to connect new knowledge with their personal knowing.

Thirdly, on a higher level of Bloom's (1956) taxonomy with regard to cognitive process (applying knowledge), Hutchings (1990) states that active learning is associated with not only what students know but also what they can do with that content. This perspective leads to an understanding of the usefulness of new knowledge and how to use that knowledge in a meaningful and relevant way. Such meaningful learning (Michael & Modell, 2003) seems to suggest that students have the ability to apply or to translate knowledge into practice rather than receiving knowledge passively. Students are therefore required to have skills to connect new and prior knowledge rather than just

memorizing information (Biggs, 1999) for their enhanced learning. Therefore, lecturers need to understand about student background knowledge in order to develop appropriate skills or strategies that will aid students in actively learning new information.

Another perspective of active learning is that students are engaged in doing activities and thinking about what they are doing (Bonwell & Eison, 1991). The key idea in this view embraces the higher order thinking levels of cognitive processes (analysis, synthesis and evaluation) highlighted by Bloom (1956). Coupled with critical thinking skills, improved student attitudes towards their learning may occur as a result of active learning (K. A. Smith, Sheppard, Johnson, & Johnson, 2005). Thus, these perspectives imply the responsibility of learning lies with students.

Active learning is related to behavioural, cognitive and social dimensions (Watkins, Carnell, & Lodge, 2007). Watkins and his colleagues argue that all learning is active (behavioural), that learning requires construction of knowledge (cognitive), and that learning entails interaction with others (social). All of these interpretations, as reflected in Bonwell and Eison (1991), provide lecturers with insights into the use of skills, strategies and tasks in their practice to promote effective student learning. However, these lines of reasoning are at the conceptual level only rather than being put into practical application in Vietnamese higher educational contexts.

Another view of active learning is that it "provides opportunities for students to talk and listen, read, write, and reflect as they approach course content through problem-solving exercises, information small groups, simulations, case studies, role playing, and other activities, all of which require students to apply what they are learning" (Meyers & Jones, 1993, p. xi). In this definition, active learning is particularly associated with the integration of skills mediated by the lecturer to help students to learn. Although students can be engaged in performing tasks in several ways with a strong emphasis on the role of the lecturer (Auster & Wylie, 2006; Keyser, 2000; Panitz, 1999), the student roles in their learning process cannot be ignored.

A more recent perspective of active learning suggests that students learn by doing things (Capel, Leask, & Turner, 2009). This view positions the lecturer as more of a stage

manager (Ciaccio, 2004). In this role, the lecturer can establish a closer rapport with the students, identify what they need to learn and observe how they learn in order to tailor the pace and instructional methods. In other words, reciprocal teaching and learning processes are addressed. Thus, if students are aware of their desired goals, they will be more likely to take responsibility for their own learning and become dynamic recipients of knowledge. An awareness of the value of the active participation of students and providing them with opportunities to reflect, analyse, synthesise, evaluate, and process information (Fink, 2003; Machemer & Crawford, 2007; C. V. Smith & Cardaciotto, 2011) is now seen as an important dimension of effective teaching.

In this study, the term active learning is used to refer to an interactive learning approach in which students construct and utilise knowledge in critical and meaningful ways.

The underlying features of active learning literature above, such as student involvement and skills integration, are relevant to the Vietnamese government goals for higher education. Thus, to align with the need for curriculum and instruction change prioritised by the university strategic plan of 2010-2020 (Vietnam University, 2010), lecturers are encouraged to change their thinking from traditional views towards a more active learning approach. In order to move students beyond passive learning, consideration of learner autonomy is now examined.

Learner autonomy

The notion of learner autonomy has been widely introduced for more than three decades within the context of language teaching and learning (Benson, 2001; Cotterall & Crabbe, 1999; Holec, 1981; Littlewood, 1996). There are a number of views on learner autonomy in the literature.

Learner autonomy is defined as "the ability to take charge of one's own learning" (Holec, 1981, p. 3). This implies that students take responsibility for the decisions in the learning process which includes choices of subjects, content papers, learning preferences, and future orientations. This view also suggests other pedagogical insights into the role shift of the lecturer and that of the student in relation to active learning. In the context of language learning and teaching methodology, the notion of autonomy has

given an emphasis to the student as the centre of teaching and learning process rather than being passive recipients of knowledge from the lecturer. In actively engaging students in an autonomous learning environment, the lecturer is assumed to take a facilitative role.

Another view of learner autonomy is that it involves "the capacity for the detachment from the teacher, critical reflection, decision-making and independent action" (D. Littlewood, 1991, p. 3). This concept suggests that students are thought to become independent from the lecturer in making decisions and choices of not only what they want to learn but also how they find their own ways to learn. Another line of reasoning for the importance of learner autonomy is confirmed within the context of teaching foreign languages (Cotterall & Crabbe, 1999; Nunan, Lai, & Keobke, 1999). This view allows students to think about their process of learning and to modify the learning process over time. The underlying ideas of reflection and independence also imply that students learn for the sake of their personal attainment and professional future and that their awareness of the roles (Inozu, 2011; Kohonen, 2003; Lamb & Reinders, 2008) is considered in the learning process.

However, learner autonomy depends mostly upon the relationship between the lecturer and the students (Ganza, 2008; Lamb & Reinders, 2008; Poskitt, 1994). It is worth noting that the autonomous learning in an Asian context such as Vietnam is largely rooted by the cultural view of interdependence rather than independence (Littlewood, 1996, 1999). In Vietnamese culture, learning is predominantly described within the context of collectivism that focuses upon the interdependence between personal attainment and value of social relationships.

Moreover, learning may be influenced by a "de facto acceptance of relationships based on power and authority" (Littlewood, 1999, p. 78). Influenced by Confucian traditional learning, there may be some distance between the lecturer and students in Vietnam as a result of saving face for both (Littlewood, 1999). Despite the influence of power and authority that may be imposed on students, Trinh (2005) found that in his empirical experiments of designing curriculum for the first-year students of teaching English as a Foreign Language, autonomous learning could be developed within the Vietnamese

context and students had positive attitudes towards this development. Thus, enabling students to be willing to interact with the lecturer and other students in the learning process (Littlewood, 1996; Scharle & Szabo, 2000) is of crucial importance. For these reasons, autonomy can occur if students are motivated to learn.

Drawing on these perspectives of learner autonomy, an awareness of how to help students to develop their autonomy through active learning is examined within the context of teaching ESP. Attention to lecturer beliefs that inform their encouragement of active learning in ESP classes is discussed in the next section.

2.4   Lecturer beliefs

This section begins by defining lecturer beliefs to provide insights into the nature of beliefs and how beliefs are conceptualised as crucial for lecturers. Lecturer beliefs are also examined in relation to their pedagogical knowledge and practice. Beliefs can influence how lecturers change their thinking about practice in order to plan their teaching and learning activities, make decisions about instructional approaches, and ultimately utilise their roles in actual practice contexts. Self-efficacy beliefs and the four sources of experience that reinforce lecturer beliefs in the change process are also addressed. The section concludes with discussion of the related concepts of identity, agency, and attribution and locus of control.

2.4.1   Defining lecturer beliefs

Lecturer beliefs, which literally refer to the ways that lecturers think about their actions (C. M. Clark & Peterson, 1986; Nespor, 1987; Pajares, 1992), have been discussed within educational contexts by many researchers (Fenstermacher, 1979; Nespor, 1987; Pajares, 1992). Both beliefs and knowledge influence the decisions of lecturer actions in specific classroom practices, which is likely to contribute to understanding of how Science lecturers may improve their teaching practice. In particular, beliefs may enable lecturers to shift their roles in ESP university settings to promote active learning. In general, there is increasing recognition of the importance of lecturer beliefs about change in teaching and learning (Borg & Al-busaidi, 2012; Prawat, 1992; Raths & McAninch, 2003). However, since beliefs are likely to be hard to change (Pajares,

1992), lecturers may need support in order to improve their instructional practice. Lecturer beliefs, in particular about the need for change, are examined in this study.

Core and peripheral beliefs are now explained to emphasise the importance of the complexities of a belief system that individual lecturers may have and how this functions in particular teaching contexts in relation to the need for change.

2.4.2   Core and peripheral beliefs

All lecturers have their own beliefs (Pajares, 1992). In an individual's belief system, it is essential to understand the central-peripheral dimension of beliefs, as indicated by Rokeach (1968). Rokeach defines centrality (core beliefs) as "connectedness: the more a given belief is functionally connected or in communication with other beliefs, the more central the belief" (p. 5). Central beliefs are more important than others and therefore are likely to be more resistant to change (Haney & McArthur, 2002; Pajares, 1992). The peripheral beliefs are the less important ones but are connected with the core beliefs to form an individual's belief system. Peripheral beliefs may however be more easily changed (Brownlee, Boulton-Lewis, & Purdie, 2002; Peterman, 1991). The connectedness among beliefs reflects an individual's identity, but beliefs may also be shared with or learned from others (Haney & McArthur, 2002; Pajares, 1992; Rokeach, 1968). Core educational beliefs are usually enacted in the classroom; whereas, peripheral beliefs may be stated but not enacted (Haney & McArthur, 2002). Connections between the central-peripheral dimensions of an individual's belief system allow the researcher to investigate how lecturer beliefs about the need for change relate to their knowledge and are implemented in their actual practices in ESP classes within the university context.

Once core beliefs are formed, they are likely to be difficult to change through time (Eisenhart, Shrum, Harding, & Cuthbert, 1988; Pajares, 1992). This conceptualisation is also supported in the research findings on the impact of lecturer beliefs upon their actions in language teaching and learning (see L. A. Hall, 2005; Haney & McArthur, 2002). Yet, during the implementation process such beliefs are not necessarily impossible to change (Nespor, 1987; Pajares, 1992; Richardson, 2003).

2.4.3 Beliefs in relation to knowledge and action

This section examines the importance of lecturer beliefs, the interplay and impact of beliefs and knowledge on lecturer decisions that contribute to the understanding of how lecturers act out their roles to improve their teaching practices.

Dewey (1933) describes a belief as an aspect of thought because "it covers all the matters of which we have no sure knowledge and yet which we are sufficiently confident of to act upon and also the matters that we now accept as certainly true, as knowledge, but which nevertheless may be questioned in the future" (p. 6) . His philosophy of beliefs leads to greater understanding of the process of reflection on practice in which the lecturers' knowledge and experience are involved. Beliefs are thus conceived of in Dewey's terms as a key determinant that informs or affects lecturer decision-making (Pajares, 1992).

Rokeach (1968) defines beliefs as "any simple proposition, conscious or unconscious, inferred from what a person says or does, capable of being preceded by the phrase, 'I believe that…' (p. 113). In this definition, it is essential to understand the nature and interplay between beliefs and knowledge. Rokeach (1968) argues that beliefs have three components: cognitive (knowledge), affective (emotions), and behavioural (action). In contrast to other cognitive researchers who contend that beliefs are a component of knowledge, Rokeach (1968) states that knowledge is a subset of beliefs. This view suggests that beliefs and knowledge may be intertwined (Beijaard & De Vries, 1997; Pajares, 1992). In particular, they are interrelated in the ways that lecturers hold beliefs about the teaching and learning process (Pajares, 1992) with regard to curriculum, pedagogical content knowledge (pedagogical subject matter knowledge) and student learning. Therefore, once lecturer beliefs change, lecturers may be prepared to try new teaching roles.

In this study, lecturer beliefs and the pedagogical content knowledge will be central to professional growth as part of their teaching. Pedagogical content knowledge was first introduced by Shulman (1986) who viewed this type of knowledge as a part of a lecturer's content knowledge "which goes beyond knowledge of a subject matter per se to the dimension of subject matter knowledge for teaching" (p. 9). This type of

knowledge involves the knowledge of a subject matter and that of how to teach that subject matter to help students learn. Thus, this view gives insights into the interplay between knowledge of a subject matter and the choice of instructional strategies that communicate that knowledge to practice.

Shulman (1987) further developed the idea of pedagogical content knowledge that it is associated with the knowledge base for teaching, including content knowledge and general pedagogical knowledge. Shulman (1987) noted that pedagogical content knowledge characterises a blend of content and teaching methods into an understanding of how particular components of knowledge may be modified and implemented to respond to the diverse needs and interests of students.

Another influential work on lecturer beliefs was developed by Nespor (1987) who argued that beliefs may be more inclined to have affective and evaluative components than knowledge and appear to function independently of the cognition related to knowledge. Her views of lecturer beliefs therefore support Rokeach's (1968) philosophy that knowledge is a subset of beliefs. Nespor (1987) further notes that knowledge of a field of study differs from beliefs about that field. This perspective leads to the understanding that lecturer knowledge of a subject matter and the ways to teach that subject matter do not depend upon whether one enjoys or dislikes that subject matter. Nonetheless, beliefs are more influential than knowledge of subject matter because they affect the ways in which knowledge is constructed and how that knowledge is utilised in real-life situations. In particular, affective aspects of beliefs may include attitudes, motivation, feelings or perceptions that lecturers have, and evaluative beliefs may influence views of student activities. Therefore, beliefs about change can affect the time lecturers expend on tasks and the endeavours they put forth in order to achieve their goals (Pajares, 1992).

To keep up with the ever-increasing progress of specialised knowledge required of the students, lecturers are constantly challenged to deal with up-to-date knowledge and initiatives, and therefore, it is important for them to be open to changing their practice beliefs. Nespor (1987) posits that beliefs exert a greater influence on actions than knowledge, and that beliefs are predominant predictors of actions (Gess-Newsome,

1999; Pajares, 1992; S. Pedersen & Liu, 2003). The present study examines how lecturer beliefs about the need for change may exert an impact on their instructional practice.

In highlighting the central role of lecturer beliefs in relation to knowledge during the change process, according to Pajares (1992), beliefs are "instrumental in defining tasks and selecting the cognitive tools with which to interpret, plan and make decisions regarding such tasks; hence, they play a critical role in defining behaviour and organizing knowledge and information" (p. 325).

Much research has shown that lecturer beliefs impact on teaching practices (Abell & Lederman, 2007; Bandura, 1986; Borg & Al-busaidi, 2012; Gabel, 1994; Mansour, 2009; Markic & Eilks, 2012; Pajares, 1992; Pintrich, 1990; Prawat, 1992). Pajares (1992), for instance, asserts that lecturer beliefs influence their perceptions, which in turn affects their behaviours in the classroom. Cronin-Jones (1991) also found that lecturers who believed that students learned through transmission of knowledge responded negatively to implementing constructivist instructional strategies. But not all researchers agree that belief change precedes practice change. Some argue that belief change is preceded by practice change (Cobb, Wood, & Yackel, 1990). For example, Guskey (1986, 2002) indicates that belief change takes place only if there is evidence of student's outcomes, support and challenge. Others hold that belief and practice change are mutually inclusive and that either can bring about change (e.g., Hargreaves, 1994; Richardson, 1990). This intersection between lecturer beliefs and practices was supported by Clark and Peterson (1986) who proposed that the teaching-learning process would be completely understood only if these two domains were complementary.

Previous studies noted in this chapter provide insights into the impact of lecturer beliefs on instructional practices. However, the findings do not discuss any external factors such as class size, provision of time, student English language proficiency, and class resources, all of which may influence lecturer beliefs as well as facilitate or hinder the change process over time. These factors may also contribute to the inconsistencies between lecturer beliefs and their teaching circumstances (Martin, 2008).

Although there are some differing perspectives about the causal relationship between beliefs and practices, most agree with Pajares (1992), Richardson (1996), and Richards et al (2001) who all suggest that beliefs are the catalyst for change. As beliefs and practices are reflected in the complexities of teaching context, it is essential in this study to consider lecturer beliefs about the implementation of their actions in science classrooms with their beliefs about how students learn (Abell & Lederman, 2007). Beliefs are described as static and episodic in nature (Nespor, 1987) although they also predispose individuals to action (Rokeach, 1968); therefore, there may be some inconsistencies between lecturer beliefs and practices, and beliefs are not always clearly expressed in practices (Leeham, 2006; Pajares, 1992; Rokeach, 1968). This may relate to earlier discussion on core and peripheral beliefs (see Section 2.4.2).

2.4.4 Self- efficacy beliefs

Self-efficacy plays an important part in understanding of the impact of lecturer beliefs and their instructional practices (Bandura, 1977; W. K. Hoy & Miskel, 2001; Pajares, 1992). Bandura (1977) defines self-efficacy as "beliefs in one's capacities to organize and execute the courses of action required to produce given attainments" (p. 3). In this definition, self-efficacy refers to a person's judgement of his or her potential success in performing a given task, as noted in Hansen (2004), Hoy and Miskel (2001), and Kazempour (2008). Self-efficacy beliefs are thus integral to teaching in relation to motivation and student learning. Such beliefs help lecturers to "determine how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences" (Bandura, 1977, p. 194). Other literature also supports the view that highlights the impact of self-efficacy beliefs on lecturer practice (W. K. Hoy & Miskel, 2001; Pajares, 1996; Usher & Pajares, 2008). If lecturers have strong beliefs in their capabilities, then they are motivated to accomplish their tasks by developing the instructional strategies or activities that are important and relevant to their student learning.

In examining different contexts of the teaching and learning process, there are four types of experience that help lecturers to develop their self-efficacy beliefs (Bandura, 1993, 1997; W. K. Hoy & Miskel, 2001). These types include mastery experience,

modelling and vicarious experience, verbal persuasion, and physiological or emotional arousal.

Firstly, mastery experience is the most important source of self-efficacy in relation to personal performances. Success brings a stronger sense of self-efficacy, whereas failure reduces self-efficacy. This type of experience involves the interpretation of the results of a task performance and beliefs about the expectation for success or failure in subsequent tasks and activities (W. K. Hoy & Miskel, 2001; Schunk & Pajares, 2011).

Secondly, vicarious experience refers to the way that individual lecturers develop their self-efficacy beliefs by observing others' actions. Seeing others' success in doing things enables lecturers to believe that they also can do similar things. This type of experience depends on the model that contributes to the beliefs regarding their abilities to perform a given task (Evans, 2010; Pajares, 2008; Tschannen-Moran & Johnson, 2011; Zimmerman, 2000). Therefore, the level of self-efficacy beliefs that lecturers may have is proportionate to the observed models. Or in other words, lecturers have higher levels of self-efficacy if they share similar capacities or desired outcomes from observed actions, and vice versa.

Thirdly, lecturers also build their self-efficacy beliefs by receiving persuasions from others. Verbal persuasions or feedback may motivate lecturers to succeed or weaken their self-efficacy beliefs (Schunk & Pajares, 2011). Bandura (1986) notes that negative persuasions or feedback have a greater influence on lowering self-efficacy beliefs than reinforcing such beliefs through positive feedback or appraisal. Although feedback is not as effective as mastery or vicarious experience, it influences not only lecturers' self-efficacy beliefs (Hansen, 2004; Pajares, 2008) but also their direction and future actions for success (Evans, 2010; Schunk & Pajares, 2011).

The fourth source of experience is physiological arousal, e.g. excitement and enthusiasm (positive responses), or emotional states, e.g. stress, anxiety and mood states (negative reactions). These affective reactions contribute to individuals' feelings about the success or potential risk of failure of the outcomes of their actions (Pajares, 1996; Schunk & Pajares, 2011; Tschannen-Moran & Johnson, 2011). Thus, lecturers who

have positive responses to challenges are likely to experience an increase in their self-efficacy beliefs. Conversely, those who experience negative feelings about their capacities may believe that things appear more difficult to be resolved, which in turn, weakens their self-efficacy beliefs, as noted by Pajares (1996) and Tschannen-Moran and Johnson (2011). For these reasons, consideration is given to the importance of optimising lecturers' emotional well-being and minimising their stress.

The four sources of experiences and self-efficacy are not only interrelated in relation to individuals' task performance (Gist & Mitchell, 1992; Hansen, 2004; W. K. Hoy & Miskel, 2001), but Gist and Mitchell (1992) highlight that these relationships are also mediated by situational and causal attributions. Therefore, the lecturers' self-efficacy beliefs may change or modify depending on the contextual factors or conditions where their teaching practice is embedded. Although self-efficacy can be learned through experiences, as highlighted by Hoy and Miskel (2001), little research has been conducted on the particular experiences that add to the complexities of its development (Mongillo, 2011; Tschannen-Moran & Hoy, 2007).

In searching the literature on lecturers' self-efficacy beliefs, pedagogical content knowledge, and the practice of ESP lecturers within the university context, none specifically discussed the relationship between these concepts. This question, however, leads to the need to investigate how lecturer beliefs may influence lecturer decision-making across different contexts of ESP teaching and learning process. As self-efficacy beliefs may be the key component of human agency (Bandura, 1982, 1986, 1997), their influence on lecturers' choices of teaching strategies that will be used in classroom practices is inevitable.

The following sections explore the notions of identity, agency, attribution and locus of control in order to deepen understanding of lecturers' decisions that result in enhanced student learning.

Identity

Lecturer identity is defined as "lived in and through activity and so must be conceptualized as they develop in social practice" (Holland, Lachicotte Jr., Skinner, &

Cain, 1998, p. 5). Holland and his colleagues believe that lecturer identity is a dynamic process through which lecturers construct themselves by interacting with others (Beauchamp & Thomas, 2009; Beijaard, Verloop, & Vermunt, 2000; Cook-Sather, 2006; Deters, 2009, 2011; Moore, 2008; Rose, 2008; E. Wilson & Deaney, 2010). It is likely that such interactions evolve and influence lecturer personal and professional identities that are reinforced or embedded in their teaching practice. In other words, how lecturers reflect their identities in a particular practice is interrelated with and influenced by trajectories of cultural, social, and political contexts.

Lecturer identities, shaped by the contexts in which they are involved, are widely documented in the literature (Beauchamp & Thomas, 2009; Saka, Southerland, Kittleson, & Hutner, 2013; E. Wilson & Deaney, 2010). Within the complexities of this connection, particularly regarding content-based instruction through English within a tertiary context in Vietnam, these Science lecturers are more likely to position themselves as being different from others. This difference results from face-saving, beliefs, traditional roles, and other aspects of teaching in order to provide students with an active learning environment. This positioning is underpinned by the widely known belief that the lecturer is seen as a role model for his or her students. There also appears to be a connection between lecturer identities and the potential of their agency (Beauchamp & Thomas, 2009; Day et al., 2006; Deters, 2009; Holland et al., 1998; Lasky, 2005); hence, discussion on how lecturer agency may mirror or feed into lecturer identities in the ESP teaching context follows.

Agency

The notion of agency refers to the exercise of control over one's behaviour (Bandura, 1997; Holland et al., 1998); the power to act purposefully and reflectively (Inden, 2000); the power to make decisions that bring positive change (Moore, 2008); or the capacity to understand personal goals towards actions (Edwards, 2009). Bandura (1997) and Holland and his colleagues (1998) further describe agency as a causative interaction of self-efficacy beliefs influencing change (Water & Gerson, 2007). Therefore, effective teaching is likely to depend upon or is driven by lecturer agency. Such beliefs are associated with lecturer commitment and their passion for teaching. Lecturers with a strong sense of agency can provide students with an effective learning environment,

which contributes to their personal and social growth (Tschannen-Moran & Hoy, 2007; Tschannen-Moran & Woolfolk Hoy, 2001). The present study will examine the ways in which lecturers' sense of agency can be modified over time.

Attribution theory and locus of control

Attribution is a further related cognitive process. Heider (1958) argues that attribution refers to explanations or interpretations of the causes of individuals' behaviours or actions. These causal attributions (or beliefs) allow individuals to enhance the understandings of their decision-making processes. Heider's (1958) theory implies that attributions are crucial for adaptive behaviours (Weiner, 2008). Heider (1958) further highlights that the attribution impacts on individuals' perceptions of their abilities and their efforts in performance.

According to Weiner (1972, 1986), if individuals attribute their achievement or failure to ability, effort, task difficulty, and luck, this may diminish individual responsibility for actions or outcomes (Furnham, 2009; H. H. Kelly & Michela, 1980; Sweeton & Deerrose, 2010; Weiner, 1986). Other literature (Alderman, 2008; Baxter & Braithwaite, 2008; Weiner, 1986, 2008) views attributions as individuals' beliefs about the causes of outcomes and how these beliefs influence their expectations and behaviours.

Weiner (1986) also notes that the ways in which people tend to interpret success or failure can be internal or external. If individuals' success or failure is because of their hard work, such cause is termed as internal. In contrast, if the cause is attributed to luck or task difficulty it is termed as external. Thus, the causal attributions have important implications for motivation (W. K. Hoy & Miskel, 2001; Weiner, 1972, 1986). According to Hoy and Miskel (2001), if the cause of an incident is ascribed to internal factors, then success can be linked with pride, whereas failure can lead to feeling of shame or demotivation in performing a given task. It is worth noting that attribution also shapes individuals' subsequent actions (Weiner & Edwards Craighead, 2010). From these perspectives, causal attributions for a particular behaviour or actions may also be related to an individual's locus of control.

Locus of control refers to the belief about the extent of personal control over events that can influence them (Rotter, 1966). She points out that the outcome of events that depend on one's behaviours is termed as internal control. In contrast, if the environment or other factors are beyond an individual's control, this belief is termed external locus of control. Both internal or external factors are likely to influence individuals' decisions (Lefcourt, 1976). The two dimensions of control also suggest lecturers' motivation for change (Weiner, 2010). Success or failure at a task depends upon the beliefs and perceptions about the causes of internal determinants such as abilities or efforts, or those of external determinants such as task difficulty (Ajzen, 2002; Weiner, 1972, 1986, 2008).

While attribution theory is focused on how and why individuals explain or interpret the causes for the successes or failures of their behaviours or actions, locus of control is more associated with individual differences. Thus, these two constructs are "closely related cognitive dispositions involving beliefs that are relatively stable over time but changeable" (Furnham, 2009, p. 274). Furnham (2009) further notes that attribution is concerned with the causes of past actions, whereas locus of control feeds into the expectancies of future performances. This distinction is important because both constructs provide insights into the lecturer beliefs that may shape or inform their actions.

However, there has been no research about the impact of attribution and locus of control with regard to lecturer beliefs about the need for change. There have also been no studies focusing on English for Specific Purposes classes at university level within a context such as Vietnam. This study therefore aims to fill these gaps in the literature.

2.5 Teacher change

Changes in instructional approaches and methods play an increasingly significant role in lecturers' lives and student learning. Thus, greater demands for providing students with active learning are put upon lecturers. If students learn better, then an instructional change is more likely to be acknowledged as effective teaching.

This section reviews the literature on the nature of teacher change and its salient features in relation to professional development. The process of teacher learning is seen as a critical part of a teacher change process. Teacher change is viewed as a process of learning and growth (Flores, 2003, 2005; Richards et al., 2001). Five models of teacher change are thus explored in order to identify which essential components of the change process can be applied to the present study (see Figure 2.1).
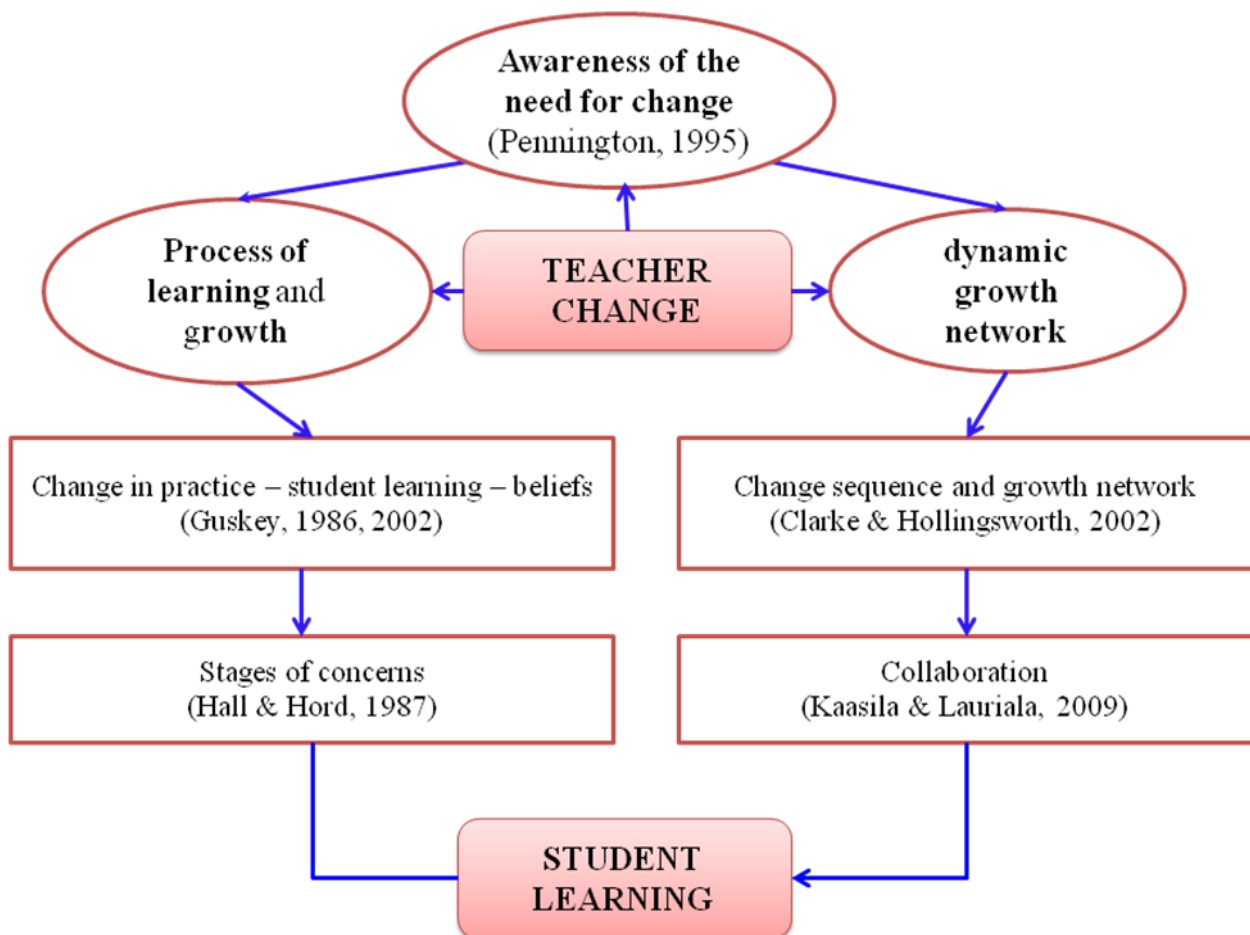
Figure 2.1 Key themes of teacher change

The five models are: The Model of Teacher Change (Guskey, 1986, 2002); The Concerns Based Adoption Model (Hall & Hord, 1987); The Teacher Change Cycle (Pennington, 1995); The Interconnected Model of Professional Growth (Clarke & Hollingsworth, 2002); and The Collaborative, Interactionist Model of Teacher Change (Kaasila & Lauriala, 2009). These models address three key themes: change as a process of learning and growth; awareness of the need for change; and dynamic growth networks.

These themes offer insights into the change process that lecturers will experience and learn with regard to curriculum and instruction innovation in ESP classes. In the section below, teacher learning is considered first, followed by change as a process of learning and growth, awareness of the need for change and dynamic growth networks.

Teacher learning

Teacher learning is defined as "an additive process based on the accumulation of new knowledge or strategies to an existing repertoire" (Hoban, 2002, p. 11). In this definition, learning occurs as lecturers exchange views, experiences and understanding of the practice contexts with colleagues within disciplines or with the researcher. Learning is also seen as participating when lecturers developed new ways of thinking and practice (Bourke & St.George, 2008; Tynjala, 2008). This perspective is further extended by the idea that learning is an active process that takes place when lecturers are involved in activities that result in a change in knowledge, beliefs and practices (Bakkenes, Vermunt, & Wubbels, 2010). Thus, if lecturers are encouraged to investigate their teaching contexts in situ, then they will be likely to learn more about the aspects of practices they perceive are important to plan and implement changes relevant to their teaching contexts. These innovative plans of action may include their instructional methods and skills as well as teaching roles. The more lecturers are engaged in changing their teaching strategies, the more knowledgeable about teaching they are likely to become, as noted by Borko (2004) .

Significantly, learning is viewed as empowering through a process of shared interest and tasks and allows lecturers to negotiate meaning as they interact with others, for example, in collaborative action research (Coles, 2008). In such interactive endeavours, lecturers develop new action plans that enrich their hands-on experience of subject matter, particularly their pedagogical content knowledge, which in turn facilitates student learning or promotes active learning. In a community of practice, knowledge is likely to be continually modified in response to new experiences (C. J. Craig & Deretchin, 2009). Learning therefore provides lecturers with an opportunity to reflect on their practice and as a result, to make decisions on the changes to their subsequent actions. Attention to change as a learning process and growth is now discussed.

2.5.1 Change as a process of learning and growth

This section considers the nature of change as a process of learning and growth. This process is identified in two models of teacher change: Guskey's Model of Teacher Change (1986, 2002) and The Concerns-Based Adoption Model (Hall & Hord, 1987).

Guskey's model describes teacher change in relation to professional development as a temporal sequence of events that progress through three stages of a change process (see Figure 2.2). Guskey notes that there is a move through the stages of change from classroom practices to student learning outcomes and finally to lecturer beliefs and attitudes.
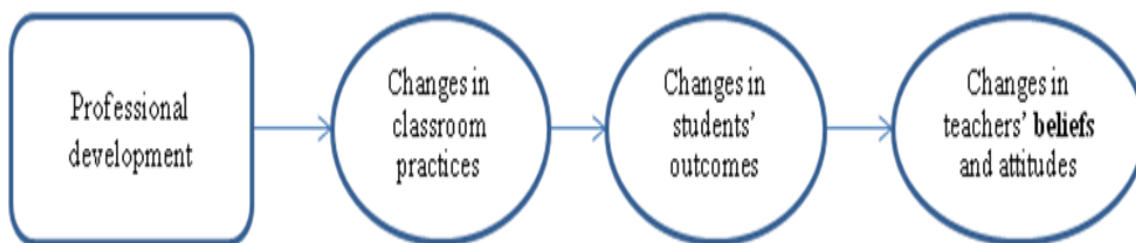
Figure 2.2 A Model of Teacher Change (Guskey, 2002, p. 383)

In other words, teacher change is experience-based, which leads to belief changes, according to Guskey, when they see successful implementation of change. He further claims that change is a gradual process, not a product. In that process, change takes place through continued support, follow-up, and challenges, and lecturers need regular feedback on student progress. For these reasons, lecturers are more likely to change their practices and beliefs, such as shift their roles from traditional lecturing to a more active learning approach, if they are given support pertinent to specific aspects of teaching, and at the right time. However, Guskey's model discounts the role of the teacher as being a passive recipient of external support (Tom, 1986). Tom (1986) contends that lecturers can play active roles in changing their practices. In the process of change, teaching happenings are not always as smooth as planned and consequently, potential concerns or burning issues are inevitable. Central to the implementation process of change is the discussion of lecturers' concerns in the next model.

Like Guskey's model, the Concerns-Based Adoption Model (Hall & Hord, 1987) examines the process of change through different stages of concerns in relation to curriculum, instruction and change facilitators (Hall & Hord, 1987; Hord, Rutherford, Huling-Austin, & Hall, 1987; Loucks-Horsley & Stiegelbauer, 1991).

Hall and Hord (1987) argue that change involves a shift from the *self* level (influence of change on personal level) to the *task* of teaching (practice with change), and finally to the *impact* of change (effect of change on student learning). In the self (or personal) level, individual lecturers may experience uncertainty about change although they are likely to be inclined to an awareness of that change. In the task level, lecturers may be more involved in teaching accomplishments in relation to time, lesson preparation or resources. Lecturers also tend to think of change and other components that may drive change towards student learning outcomes. At the final stage, lecturers are more concerned about the effects of the implementation of change, focusing on collaboration with others. In other words, lecturers at this level may respond to change in different ways, from showing little interest in the change to refinement, integration and renewal. Thus, lecturers play a vital role in a change process. Also, change is a developmental process of personal learning about new practices (S. E. Anderson, 1997). These three stages of lecturers' concerns were also highlighted by Haworth (2004) who described lecturers' experience and expertise as integral to their level of engagement in a change process and their professional development decisions.

The key strength of The Concerns-Based Adoption Model is that it allows for an in-depth understanding of lecturers' concerns about the change process. Such perception is based on the assumption that if lecturers are supported for change, then they will plan and implement changes in practice (S. E. Anderson, 1997; Gordon, 2008). However, this model does not take into account how teacher change responds to the initiatives and policies required of the lecturers in contemporary educational settings (S. E. Anderson, 1997). Moreover, the stages of concerns may progress in a dynamic way, rather than in a linear process (Fullan, 2007; Hoban, 2002).

Change may be more likely to take place if lecturer beliefs about the need for change are examined through collaborative action (for example, with an English language

teacher) and particularly if their awareness of the need for change is articulated and sustained over time. The awareness of the need for change that is reflected in the Teacher Change Cycle (Pennington, 1995) is discussed next.

2.5.2   Awareness of the need for change

The Teacher Change Cycle was developed by Pennington (1995) during a study of eight Hong Kong lecturers taking part in the progression of utilizing innovative practices of teaching process writing lessons in one of the English classes over a six-month project. She found that lecturers responded to a cycle of loops back around change through a temporal sequence involving three stages: procedural, interpersonal and conceptual. Like Guskey's (1986, 2002) model, the Teacher Change Cycle describes change as a process. Pennington (1995) argues that awareness of the need for change is the key feature that results in change and development. In particular, positive change is seen as essential to the teacher's life (Pennington, 1990; Richards et al., 2001).

This model entails two types of reflections: deliberating on experience and mirroring experience (Pennington, 1995). Thus, it supports Schön's (1991) *reflection-in-action* in that lecturers try new things, reflect on the consequences, and then modify their practice through a developmental process that involves continual innovation (Pennington, 1995). Such initiatives and reflective practice may serve as a useful tool for the lecturers to be aware of the need for change and notably to better understand the practice and the potential impact of change in that practice. However, there has been no discussion in the literature about the factors that may influence the change process which is dynamic and evolving, as well as arising issues, concerns or other dimensions of practice that are interrelated or need to be resolved during the implementation process. The next two models of teacher change and professional growth are examined below.

2.5.3   Dynamic growth networks

Change is an essential part of lecturers' professional lives; therefore, its connection with other components of teaching practice, particularly change facilitators and inhibitors should be considered to keep up with the process of change in which the specific teaching contexts are likely to occur. These are presented in more detail in the

Interconnected Model of Professional Growth (Clarke & Hollingsworth, 2002) and the Collaborative, Interactionist Model of Teacher Change (Kaasila & Lauriala, 2009).

Based on Guskey's ideas, Clarke and Hollingsworth (2002) propose the Interconnected Model of Professional Growth (see Figure 2.3). These authors highlight the importance of the intersection between change sequences and growth networks through four domains: the personal (teacher knowledge, beliefs and attitudes), the practice (experimentation), the consequence (salient outcomes), and the external (support or stimulus).
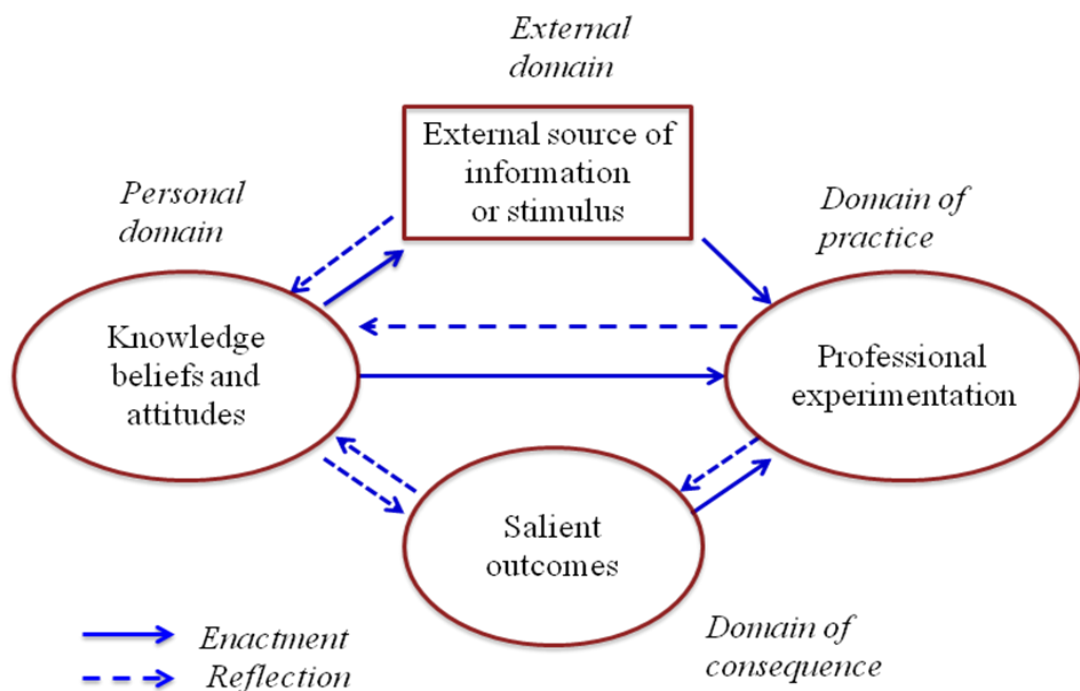
Figure 2.3 The Interconnected Model of Professional Growth (Clarke & Hollingsworth, 2002, p. 951)

In particular, change in one domain may influence change in another through processes of action (enactment) and reflection. For example, a new teaching approach in the domain of practice is likely to link to new knowledge and change perceptions of salient outcomes. Yet, it is worth noting that change which takes place in one domain may not lead to change in another (Opfer & Pedder, 2011). It may be the case that lecturers may change their beliefs about the need for change in their instructional approaches but not their practices and vice versa.

Two key strengths are identified in this model. First, in a cyclical process the impact on lecturer beliefs of positive student learning is acknowledged (McDonough, Clarkson, & Scott, 2010). Second, lecturers' professional growth is an on-going learning process that differentiates itself from other models shown in the literature (Clarke & Hollingsworth, 2002). Unlike Guskey's views on change as a linear process, the works of Clarke and Hollingsworth (2002) provide insights into action and reflection in relation to the interactively multidimensional process of teaching and learning, which plays a central part in this study. However, Clarke and Hollingsworth (2002) provide no discussion about how to bring about change in relation to collaboration in a teaching and learning process. The notion of collaboration is examined in the next model.

The views of Kaasila and Lauriala (2009) on teacher change are chiefly grounded in the work of Kurt Lewin's (1947) model of change which takes an interactionist view combining socio-cultural and constructivist perspectives. Drawing on Lewin's three phases: unfreezing (getting ready to change), moving (implementing a change process), and refreezing (sustaining change), Kaasila and Lauriala (Kaasila & Lauriala, 2009) stress the importance of collaboration throughout a process of change in which a blend of differing contexts has taken place to facilitate student learning and its interactions. The model therefore offers a relevant agenda for lecturers to understand the value of conditions that facilitate the change process in relation to curriculum and instructional initiatives, not only at the individual level but also at a group level (departmental level or collegial level). However, this model does not indicate the individual factors such as self-efficacy or external influences that may affect the practice change or its sustenance.

To summarise, the review of the literature on teacher change has presented a comprehensive picture of the nature of and the need for change. The key themes of the models of teacher change allow the researcher to gain insights into the change process experienced by participating lecturers. In particular, identifying or focusing on what aspects of English teaching methodologies are needed to design with the lecturers can contribute to their processes of action and reflection as well as their professional growth. These understandings also help lecturers to reflect on the decision-making processes and shift their teaching roles as time progresses, which, in turn, will meet the diverse needs of the students.

Although the literature on teacher change provides a useful conceptual framework for the present study, as yet there have not been any studies that investigate teacher change within the context where the subject lecturers lack English teaching methodologies. This present study fills these gaps in the literature on teacher change, with a particular focus on the Vietnamese context.

Teacher change overlaps with their beliefs because the change process is influenced by lecturers' perceptions which filter their decisions on classroom practices. In turn, this complexity intersects with lecturer reflection during the implementation process. These three aspects (beliefs, perceptions and reflection) intersect with and influence each other.

2.6   Lecturer reflection

Reflection is the key concept in John Dewey's (1938) theory of inquiry. He defines reflection as "an active, persistent and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it and the further conclusions toward which it tends" (p. 9). Thus, reflection can be a powerful way of thinking about experience and growth (Rodgers, 2002), the construction of knowledge, participation, purpose and growth in teaching practices (Dimitriadis & Kamberelis, 2006), or a process of retrospection on an event, making informed decisions and then assessing the consequences of those decisions (Harris, Bruster, Peterson, & Shutt, 2010).

In a change process, reflection is likely to engage lecturers in seeking potential solutions for specific problems in a given context. It not only helps provoke lecturers' perceptions of transforming themselves (Sowa, 2010, Swanson, 2010) but also places them as agents of change. The link between reflection and their roles as agents of change is noted in the literature on reflection on teaching through English (Burns, 1999; Darling-Hammond & Snyder, 2000; Sowa, 2010; Webb, 1990). Reflection is therefore a process of learning from shared experience and expertise that results in understanding of teaching practice and improves the quality of that practice.

Understanding of lecturer reflection was further developed by Donald Schön (1987, 1991) as he differentiates between reflection-in-action and reflection-on-action. Reflection-in-action involves the process of understanding the existing practices and making immediate decisions (Farrell, 2007; York-Barr, Sommers, Ghere, & Montie, 2001); whereas, reflection-on-action, which is closely related to Dewey's philosophy, refers to thinking about the action after the class. Thus, lecturers' changes in practice and their reflection on problem solving should be incorporated into the teaching and learning processes, highlighting teacher change as a moral response (Boody, 2008). Boody further notes that change is moral in that the lecturer does not reflect on change only in order to respond to the need for change per se. Similarly, in the current study lecturers reflect on changes because they believe are morally responsible for student learning.

Since action can lead to reflection (Elliott, 1991), this may provide ESP lecturers with insights into the constant awareness of how students learn on the spot and then take action to provide them with more active learning. The process of action and reflection therefore is likely to result in lecturers' personal and professional growth.

2.7 Summary

The literature review has presented the conceptual framework that guides my study in relation to teacher change in ESP classes in Vietnam. This chapter has portrayed the historical educational influences that have created the present higher education system in Vietnam. The shift from traditional lecturing to an active learning approach, giving an emphasis to the role of the students, is a key aspect of this evolution of Vietnamese higher education.

An in-depth examination of how lecturer beliefs in relation to pedagogical content knowledge may influence their instructional practice is the central focus of this study. In searching for the impact of lecturer beliefs on their practice as time progresses, the constructs of self-efficacy and its sources of experiences are also considered. A synthesis and critical evaluation of the literature on teacher change, based on the five

models of teacher change and professional growth, address three key themes central to the present study.

First, change is a process of learning and growth. Thus, lecturers' innovative teaching approaches or strategies need to be considered. Second, awareness of the need for change lays the foundation for the implementation process of change and future actions. Third, a dynamic growth network in terms of collaboration is an indispensable part in changing lecturer practice and sustaining their endeavours. These three themes as indicated in the literature have offered insights into the change process that will help lecturers to become reflective practitioners or agents of change, in order to promote active learning in ESP classes.

However, none of these models of teacher change has been instigated at a university in Vietnam, nor have the questions of change in ESP practice been answered. In particular, there have been no studies investigating the context for ESP lecturers' change. This study therefore fills these gaps in the literature on teacher change.

2.8 Research questions

In order to investigate the process of teacher change in Science classes at a Vietnamese university, the present study aims to answer the following three research questions:

1. What do ESP lecturers believe active learning is and how does that influence their roles?
2. How do ESP lecturers change their teaching strategies in line with their beliefs about active learning?
3. What are the factors that influence ESP lecturer beliefs about change to enhance active learning in Science classes at a Vietnamese university?

The following chapter focuses on participatory action research as the research methodology utilised in the present study.

CHAPTER THREE
RESEARCH METHODOLOGY AND DESIGN

3.1 Introduction

Action research was selected as the research methodology for the present study to allow the researcher to understand the change process experienced by ESP lecturers. This chapter begins by examining the nature of qualitative research, which is linked to the rationale of action research in this study. In the central sections, there is a discussion of participant selection, a description of the researcher role, data gathering tools, the research schedule, and data analysis. Finally, a description of ethical considerations is provided.

3.2 Qualitative research

This study employed a qualitative research approach to investigate teacher change in ESP classes. In particular, this approach was used to investigate ESP lecturer beliefs about active learning, their practices, and other factors that influenced their change process. In the process of collecting data, the researcher sought to understand the interplay of the complexities of a particular situation or teaching context (Creswell, 2012). During this process, the researcher utilised five main features associated with qualitative research, as identified by Bogdan and Biklen (2007). These features were a focus on naturalistic inquiry; consideration of thick description; involvement in a process; seeking inductive data; and capturing meanings from the participants' perspectives. Each of these features underpins the present study, as shown below.

Naturalistic inquiry

Qualitative research involves *naturalistic* inquiry (Berg, 2009; Berg & Lune, 2012; Bogdan & Biklen, 2007; Cohen, Manion, & Morrison, 2011). The study therefore aimed to provide the researcher with insights into lecturer practices within the natural teaching contexts of ESP Science classes. In the qualitative research process, the researcher was

the key instrument (Fraenkel & Wallen, 2009; Fraenkel, Wallen, & Hyun, 2012). He explored the participating lecturers' change process through observing, interviewing, and sharing experiences. From being part of this natural setting, the researcher could understand the contexts in which the lecturers were involved and how their interactions were expressed over an extended period.

Providing thick description of the change process

Another feature of qualitative research is that it creates *thick description* (Geertz, 1973). Thick description is related to uncovering an individual's intentions, reasons, contexts, and conditions of action (Denzin & Lincoln, 2005). The qualitative data in this study were gathered using words or quotes from the participants, as recommended by Bogdan & Biklen (2007), Fraenkel et al.(2009), and Litchman (2013). The data included interview transcripts, observation notes, stimulated recall, and planning meeting notes. These data sources provided in-depth insights into lecturer beliefs about active learning in relation to their ESP teaching practice within their context and revealed how these lecturers implemented and managed the change process in ways that aligned with their beliefs.

Involving a process

Qualitative research is also concerned with *process* (Cohen et al., 2011; Fraenkel & Wallen, 2009). This inquiry allowed the researcher to observe the extent to which the participating lecturers participated in the change process. In particular, the researcher wanted to know how these lecturers implemented their teaching strategies in their ESP classes and how they interacted with their students. Based on these observations about the lecturers' actual practices in relation to student learning, the researcher was able to identify the potential aspects of change in teaching practice on which lecturers needed to focus. In this process, the researcher discussed and shared experiences with the lecturers about how to develop and experiment with new teaching strategies, reflect on their changes, and then plan new actions that were likely to influence student learning in ESP classes.

Developing a teacher change model through inductive analysis

In addition, qualitative research is *inductive* (Bogdan & Biklen, 2007). Through an inductive approach, the researcher collected data from multiple sources and then used these data to "construct a picture that takes place" (Bogdan & Biklen, 2007, p. 6). From capturing a holistic view of different angles throughout the change process, the researcher could identify themes relevant to answering the research questions, and thus develop a theoretical model on teacher change within the ESP context.

Making sense of meanings

Finally, qualitative research aims at *meaning* (Bogdan & Biklen, 2007; Fraenkel & Wallen, 2009; Yin, 2011). Qualitative researchers are concerned with the meanings of the findings that participants bring to them (Denzin & Lincoln, 2005, 2011). The qualitative approach therefore fitted into this study because the researcher aimed to gain the perspectives of the participating lecturers about the change process. In the meaning-making process, lecturer reflections on their changed practice were a way to help the researcher to capture what aspects of practice and teaching strategies could enhance active learning in ESP. Moreover, lecturer beliefs about the change process were of interest because they could influence the ways in which the lecturers changed their teaching strategies. In order to capture different perspectives from the lecturers, the researcher used audiotaped interviews and videotaped observations to record their words and actions respectively while interacting with the researcher.

3.3 Action research

As the central focus was on teacher change, the action research methodology was selected as the most appropriate for this qualitative study. This section presents a brief introduction to action research and its major features, noting how this investigative approach assisted in exploring the change process experienced by ESP lecturers at a university.

Action research has gained increased attention and recognition in education since the 1980s with regard to improving teaching and student learning (Calhoun, 1993; Somekh, 2006). Action research in tertiary settings is emerging as a useful way to bring about

teacher change with regard to their own instructional practice, and to bridge the gap between theory and practice (Ary, Jacobs, & Sorensen, 2010; Zuber-Skerritt, 1992a). Action research was seen as a useful way to help lecturers to reflect on their own professional experiences and practice, construct new knowledge, and move beyond their usual zone of interest. In addition, as the literature indicates that there have been no studies on the impact of teacher change on ESP practice within non-western contexts such as Vietnam, action research provided the possibility of investigating teacher change in a Vietnamese university with regard to engaging students in active learning.

3.3.1 Defining the action research design for this study

With a view to establishing the relevance of action research to this study on teacher change in ESP practice, various definitions of action research are now examined.

Carr and Kemmis (1986) define action research in the following terms:

> Action research is simply a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out (p. 162).

In Carr and Kemmis' definition, action research implies the importance of reflection by research participants. In a process that is "fluid, open, and responsive" (Kemmis & McTaggart, 2000, p. 563), reflection by ESP lecturers in this study allowed the researcher to gain insight into the ways in which they experienced changes. This insight reinforced Dewey's conception of action research as critical reflection in educational practice, as confirmed by Holly, Arhar, and Kasten (2009) and Sowa (2009). Dewey's (1938) philosophy of reflection leads to increased understanding of a process of construction of new knowledge based on lecturers' prior experience (see Section 2.6). Reflection was therefore a way to involve these ESP lecturers in an action research process of developing an action plan, acting, observing change effects, reflecting on these effects, and then further developing new plans (Hendricks, 2009, 2013; Herr & Anderson, 2005; Kemmis & McTaggart, 1988, 2005; McNiff & Whitehead, 2006, 2010; Springer, 2010). In particular, this reflective practice focused on helping these

lecturers to seek effective strategies in order to enhance the active learning of students in ESP classes.

The action research selected for the present study aimed at investigating how ESP lecturers changed their practices. It was therefore important for the collaboration between the researcher and these lecturers, in developing active learning strategies, to improve their understandings and the teaching contexts in which they were practising. This collaboration reflects Lewin's (1947) view of action research as a process of making group decisions and commitment to improvement (Zuber-Skerritt, 1992a). In addition, Lewin's theory of "no action without research; no research without action" (Adelman, 1993, p. 8) confirms the dialectical interplay between theory and practice, thinking and action, planning and change, as noted by Poskitt (1994). Collaborative decision-making processes can therefore deepen understanding of the lecturers' abilities to bring about social change (Noffke & Somekh, 2009, 2013). This study adopts the vision in Lewin's theory on collaborative decisions, so it will be essential to involve the lecturers in creating more active learning opportunities for students in their Science classes.

This study also takes Schön's (1987, 1991) perspectives of reflection on practice, namely reflection-on-action and reflection-in-action (see Section 2.6). As action brings about reflection (Elliott, 1991), it was important for the ESP lecturers in the present study to become aware of how students in their classes learned, what they needed to learn, and how they modified their practice accordingly. Reflection on planned changes was supportive of these lecturers increasingly responding differently to classroom challenges and improving themselves professionally.

Action research has been described as a journey and an aspiration (Holly et al., 2009). This view is consistent with that of a process of action and involvement of teacher change in the present study. ESP lecturers were not alone during the journey. Rather, in the pursuit of quality education and with a passion for improvement in their profession, the journey inspired them to work with others (academic colleagues or the researcher) and discover new ways of effective teaching. For these reasons, understanding the

significance of *action* in research as well as the role change process of these lecturers was pivotal.

Action research is a process of teachers generating knowledge (Noffke & Somekh, 2009, 2013). In conceptualising the generation of knowledge, action research utilised in this study enabled the lecturers to grow, understand their practice better, and have confidence in their capability in order to drive changes while collaboratively working with the researcher.

As with the personal dimension, the strong link between lecturer beliefs about the teaching and learning process and their practice can be confirmed. As personal beliefs about change play a key role in influencing lecturers' decision-making, by taking an action research approach the lecturers in the present study could develop their praxis through practice (Carr & Kemmis, 1986). Carr and Kemmis argue that praxis is an "informed action which, by reflection on its character and consequences, reflexively changes the knowledge-base which informs it" (p. 33). Praxis therefore involves a process of developing new plans for action as a result of reflecting on practice. This way of thinking addresses the intertwined link between beliefs and practice. Also, it has been widely recognised in the literature of action research (Elliott, 1991; Kemmis & McTaggart, 1988; McNiff & Whitehead, 2010).

Action research means change; it is political in several aspects of the teaching profession. Any change in teaching is likely to stem from a particular social concern or pressure on innovation and quality of educational practice. Thus, action research has its value in resolving social problems, which in turn will contribute to social justice (Noffke & Somekh, 2009, 2013). From that perspective, action research adopted for this study was a dynamic process that helped to increase lecturers' awareness of the need to change their teaching strategies in ESP classes.

The researcher believed that by participating in action research, the lecturers could learn and grow through the processes of action, reflection, and change. These integrated processes point to the key features of action research, which linked to how this research methodology was used in the present study.

In particular, promoting the teacher change process in this study required mutually supportive roles, agency, and empowerment.

Mutually supportive roles

Corey (1953) proposed that action research is what lecturers endeavour to do in order to improve practice (Noffke, 1992). Although emphasis is given to the role of the lecturers in the change process, this study mainly focused on collaborative undertaking between the researcher and the ESP lecturers in order that the quality of change could be enhanced. More specifically, action research in this study aimed to explore the change process and it signified the roles that the ESP lecturers played as investigators in their own workplace (Altrichter, Feldman, Posch, & Somekh, 2008; Zuber-Skerritt, 1992b). In this collaboration, the researcher supported the ESP lecturers to change the teaching strategies to align with their beliefs about active learning.

Teacher agency

Action research was seen as useful for this study as it incorporated action and reflection. This process allowed the ESP lecturers to receive critical feedback and support, as well as share knowledge and understanding as they reflected on their own practice, thereby enabling them to become *agents of change* (Darling-Hammond & Snyder, 2000; Gore & Zeichner, 1991). The concept of agency is sharpened by Dewey's (1938) theory of reflective thinking as it is applied to effective teaching. Reflection in this context is an ongoing process of inquiry into the learning and thinking processes of the lecturers. This reflective process also provided the researcher with an opportunity to work with the participating lecturers to identify the aspects of practice that needed to improve within the context of Science teaching. In addition, this process was intended to help the lecturers in this study to develop professional learning communities, as suggested by Gordon (2008).

Teacher empowerment

An action process empowers all of the research participants (Carr & Kemmis, 1986; Hannay, 1987). While working alongside the researcher, empowerment could be enhanced, thereby influencing lecturer beliefs about the change process and their choices of teaching strategies in relation to active learning. The ultimate goal of

empowerment is to "create new knowledge, new abilities, and new capacities" (Gordon, 2008, p. 7). This construction of new knowledge can be shared and negotiated by those involved (Allison & Pomeroy, 2000). In all interactions with the ESP lecturers over an extended period of study, collaboration was an in-action process that enhanced their professionalism and raised their awareness of the need for change in their teaching approaches. In turn, interactional practice engaged these lecturers in not only learning new knowledge critically but also knowing how to use that knowledge pertinently in wider contexts. Empowerment thus allowed the lecturers to learn from each other's experiences and practices, moving them forward professionally.

3.3.2   The action research approach in this study

The study draws mainly on a qualitative research paradigm, which assisted in developing the nature of the action research approach. Drawing on the five key features of qualitative research mentioned above, this research explored the nature of changes by Science lecturers within a Vietnamese tertiary context. As action research aims at bringing about changes and improving practice (Burns, 2010; Elliott, 1991; McNiff & Whitehead, 2010), the present study qualitatively recorded ways that both the researcher and participating lecturers collaboratively planned, acted, observed, reflected, and made action plans for changes. These opportunities allowed the lecturers in this study to understand the benefits of change, increase their capacity for change, and enhance their learning and professional growth.

It needs to be noted that this study is not 'pure' action research because the focus of the study was limited to teacher change in Science teaching within the semester time points rather than a cyclical and iterative process of planning, acting, observing, and reflecting, as indicated in the literature (Burns, 2010; Kemmis & McTaggart, 1988; McNiff & Whitehead, 2006, 2010; Mills, 2014). However, it is argued that aspects of the action research approach were present in the design of the study in that it aimed to investigate the process of action and reflections by eight Science lecturers who experienced implementing new teaching strategies while endeavouring to improve their teaching practices through enhancing active learning of students in their classes.

The design of the study included semi-structured interviews, observations, and planning meetings. Stimulated recall was also used, assisted by video-recording and notes from class observations that recorded what was happening in the Science lecturers' practices. These tools assisted in answering the three research questions in relation to the four moments of action research. The lecturers were interviewed prior to and after participating in the change process and then observed while trying new teaching strategies. Following each observation, lecturers were invited to share views and reflections on their own actions or decision-makings in the planning meetings. Through semi-structured interviews, the researcher also examined lecturer insights into the change process, their concerns about implementing change, and their reflections on the change effects. Observations were used to assist and investigate how lecturers changed their roles and acted out the collaborative plans. As a result of taking part in the change process, planning meetings were conducted with each of participating lecturers to enhance their reflections on new teaching strategies and to discuss further action plans to be implemented in subsequent classes. Therefore, the action research approach utilised aspects of this research design fitted well with the goals of both the researcher and the lecturers who were involved.

Ultimately, a participatory action research approach was selected for the present study in order to investigate how eight Science lecturers experienced and managed their change process. Participatory action research is a type of action inquiry known variously as *participatory research, critical action research,* or *classroom action research* (Creswell, 2012; Kemmis & McTaggart, 2005). The participatory action research approach used in this study draws on a social and collaborative process (Harnett, 2007; Hendricks, 2013; Kemmis & McTaggart, 2005) undertaken between the researcher and Science lecturers. The research aimed at inquiring into the realities of social practice in order to effect change and improve the lives and understandings of all research participants involved (Fraenkel & Wallen, 2009; Fraenkel et al., 2012). Through collaboratively working with the researcher, these participating lecturers utilised and developed teaching strategies to enhance active learning in their science classes. The role of the researcher in this process is further elaborated in section 3.6.

The participatory action research approach is critical in this study because it allowed the Science lecturers to interact with the researcher and other colleagues, and gradually release themselves from power influences within the social context in which they are embedded (Hendricks, 2009, 2013; Kemmis & McTaggart, 2005). Thus, there was a focus on the collaborative process and considering the factors that influenced lecturer beliefs about change and the decision-making processes in order to make their practice more efficient. In doing so, the research approach involved both action by and participation with these lecturers as co-inquirers, rather than subjects (Heron & Reason, 2001; Wimpenny, 2010). Such involvement allowed the lecturers to understand more about the nature of change that influences the quality of instruction and the active learning of students in ESP classes. Ultimately, this research affirms the view that the lecturers can be co-constructors of knowledge, and the "reconstruction of knowledge and experience enables the learner to grow in exercising intelligent control of subsequent knowledge and experience" (Tanner & Tanner, 2007, p. 99).

The identification and selection of lecturers who participated in the present study is now examined.

3.4 Participant selection

The selection of participants in a qualitative inquiry involves a purposive sampling (Berg, 2009; Berg & Lune, 2012; Fraenkel & Wallen, 2009; Hendricks, 2013; Patton, 2002). In purposive sampling, the researcher selects the participants and a specific context in order to learn if they provide rich information to answer the research questions (Creswell, 2012; Patton, 2002) and to ensure they represent the specific context being researched (Gay, Mills, & Airasian, 2009). This guidance was used in selecting potential participants for this study.

As the qualitative research was concerned with smaller samples (Cohen et al., 2011), eight ESP Science lecturers who fitted the selection criteria were invited to participate in the study. In doing so, there was a change from the original research plan. Initially, the research aimed to investigate the change process experienced by only two lecturers during the three cycles of actions in sequential semesters for six months through two academic years. However, when the potential lecturers were approached, these two

lecturers revealed that no ESP classes were available in the semester that followed. Therefore, the researcher had to invite different lecturers who would teach this ESP paper in the following semesters. Although there were eight lecturers, two lecturers (Anh and Binh) participated in the action research process twice (Semester Two in the 2010-2011 academic year and Semester Two in the 2011-2012 academic year). Then, in Semester One of the 2011-2012 academic year, three lecturers (Mai, Hung, and Tin) were involved, and later in Semester Two of the same year, five lecturers (Anh, Binh, Cuc, Lan, and Truc) participated in the study. Of these, Anh and Binh also took part in the initial phase of the study.

Ultimately, eight ESP Science lecturers from five colleges of a university participated in the study. The criteria for participant selection entailed endeavouring to identify lecturers with a similar level of seniority, academic knowledge, English language proficiency, and research experience. These criteria are described below.

Seniority

Within the context of a credit-based system, lecturers were encouraged to design their own curricula in ESP at the university under study. Senior lecturers were therefore preferred because their voices would have more credibility in calling for change or decision-making on curricular issues in their departments, schools, or colleges.

Academic knowledge

Lecturers who held PhD or equivalent qualifications were also preferred for participation. Of the 1,969 academic staff (Vietnam University, 2012) only 212 have doctoral degrees. These staff were in a position to provide a greater understanding of the up-to-date knowledge of subject matter, as well as research understanding.

English proficiency

It was felt that lecturers who were proficient in using English to present their specialised subject content would be more likely to feel confident in implementing interactive activities in their classroom practices. In addition, these lecturers would be able to interact with students in English and thus help identify the extent to which students could competently perform specific tasks.

Research experience

Lecturers who have more experience in conducting scientific research were sought, as they would understand the connection between research and practice. In particular, their research experience and knowledge could influence the beliefs they held about improving practice and student learning. This understanding, in addition to the similar research experience the lecturers had with the researcher, could also involve them in promoting active learning of students in their ESP classes. Moreover, through *action* in research, the lecturers could increase the shared knowledge and understanding of the research at the operational level as well as the value of the collaboration and support. Ultimately, lecturers could improve their awareness of the benefits of change and effective teaching strategies.

Detailed information about the research participants is provided in Chapter 4 (see Table 4.1).

3.5   Data gathering tools

This section explains and justifies the investigative tools that the researcher used in exploring the change process experienced and managed by the eight Science lecturers who were required to teach ESP at a Vietnamese university. Multiple data sources were used to gather systematic information from the participants about their views, past experiences, and beliefs about a particular involvement, as recommended by Goodnough (2011) and Hendricks (2013). Table 3.1 shows the investigative tools in relation to answering each question in the present study.

Table 3.1 Investigative tools

Research questions	Investigative tools	Rationale
What do ESP lecturers believe active learning is and how does that influence their roles?	Semi-structured interviews	to examine lecturer insights into the change process; to reflect on the change effects; and to deepen insights into the continuation of action
How do ESP lecturers change their teaching strategies in line with their beliefs about active	Participant observations	to investigate lecturer roles and their decision-making processes

learning?

| What are the factors that influence ESP lecturer beliefs about change to enhance active learning in ESP classes at a Vietnamese university? | Planning meetings | to reflect on lecturer action and discuss further collaborative action plans for subsequent classes |

In this action research study, using different tools allowed the researcher to gather rich data on the participating lecturer beliefs and concerns, as well as their perspectives of change in their teaching practice. The investigative tools that the researcher utilised in this study included semi-structured interviews, participant observations, and planning meetings. Stimulated recall was an additional tool used in both semesters of the 2011-2012 academic year to assist the lecturers to reflect on actual happenings during their practice. This tool enhanced insights into the rationale for changes in their classroom practices. These multiple sources of data also provided triangulation that contributes to the trustworthiness or validity of the study (Glesne, 2011). The research questions guided the interview protocols which served as a frame of reference (Brenner, Brown, & Canter, 1985) to ensure valid data were obtained from lecturers' responses.

3.5.1 Semi-structured interviews

Interviews were the first investigative tool used in the study. Interviews have been referred to as purposeful conversations (Berg, 2007, 2009; Bogdan & Biklen, 2007). Interviewing provided not only information about lecturers' teaching contexts but also insights into their practices, experiences, and views of changes in curriculum and instruction.

Of the three types of interviews: structured, semi-structured, and unstructured (Fontana & Frey, 2000), the researcher selected semi-structured interviews because they allowed for flexibility and covering a wide range of topics, but at the same time they left room to control and maintain the conversations (Bernard, 2002). These interviews encouraged the lecturers to articulate their beliefs about how their practice influenced student learning. The research questions guided the interview protocols which served as an agenda or a frame of reference (Brenner et al., 1985) to ensure valid data were obtained from lecturers' responses. The interview protocols are detailed in Appendices 1 and 2.

A semi-structured interview begins with open-ended questions followed up by prompts and probes (Drever, 1997; Gillham, 2005). In this study, the semi-structured interviews utilised open-ended questions that were organised into eight categories. The categories particularly concentrated on the existing ESP curriculum, lecturer beliefs about active learning, their beliefs, and concerns about the change process, student preferences, lecturer roles, the need for change, and types of support.

Before the actual interview process, the questions were piloted with five international postgraduate students (Canada, Malaysia and Thailand) and two English lecturers (one in New Zealand and the other in Vietnam) in order to seek feedback on the content, the question sequence, comprehensibility, and the length of the interview.

The pilot interviews allowed valuable feedback to enhance the validity of the questions and their constructs, as noted by Lapan and Quartaroli (2009). The detailed comments provided the researcher with an opportunity to review and refine the questions in preparation for the actual interviews. For example, the researcher, after interviewing with pilot participants, realised that there was no wrong or right response because different perspectives and experiences could be shared and generated by the interviewees rather than being merely collected by the researcher himself. This type of seeking informal information resulted in the fact that the researcher should become the listener, as recommended by Mishler (1986) and Patton (2002). In addressing this point, the researcher strove to become an active listener throughout the interview process with each participating lecturer.

The pilot also helped the researcher to recognise that making use of probes in the interviews could allow for further clarification and additional information about interviewees' responses. For example, a pilot participant suggested that the interviewer could sometimes ask the interviewees if they could further think more deeply about initial response, such as *What do you think would happen if it was your case?, What do you think are the benefits of the need for change?, or Can you tell me more about that?* This participant further indicated that the interviewer should not be afraid to add his voice in getting participants thinking during the interview too because it would become more conversational. With these contributions in mind, the researcher found that the

quality of the actual interview responses was improved and he also learned more about how these small changes helped to build rapport when conducting interviews, as recommended by Bogdan and Biklen (2007) and Seidman (2006). The researcher also added sub-questions to the interviews with participating lecturers and followed the advice of frequently used probing questions in order to encourage more in-depth responses. As a result, the more focused the interviews provided a better chance of getting rich and thick data.

The notion of active listening (Gillham, 2005; Seidman, 2006) was viewed as an important skill to encourage the interviewees to stick to the focus. Good listening to the conversations could therefore motivate the respondents to talk more about the topic of interest and to share ideas and perspectives. Question such as '*Can you give me an example of that?*' was quite often used to ask interviewees if they could elaborate on some answers that the researcher wanted to know more about, e.g., some particular aspects of teaching practice. In the informal conversations, the researcher made use of these questions to encourage the participating lecturers to think or talk more deeply about their initial responses and keep the conversations going. Other questions such as '*What do you mean?', 'What do you think?', 'How did you do that?*' or '*How do you know that?' 'In what ways do you perceive your role?*' were included during the interviews in order to provoke the thinking and interest of the participating lecturers, thus ensuring appropriate responses were obtained. The original questions were also broken into sub-questions to allow the conversations to be more natural and flexible.

In the main study, interviews with each of the eight Science lecturers allowed the researcher to gain insights into their beliefs, concerns, and views about making changes in their practice. Interviews also enabled the researcher to understand how they experienced ESP teaching in relation to curriculum and instruction innovation. Another more important purpose was that the researcher was interested in looking at the lecturer beliefs about change and the factors that influenced their beliefs about the change process. Lecturers were not alone during the action research journey. Rather, as suggested by Fazio and Melville (2008), they were supported for change in practices and professional growth through collaboration.

An MP3 portable recorder was used to record interviews. This recorder was tested before the interview to ensure the quality of the recording. After confirming permission for recording from the lecturers, the researcher reviewed the purpose, schedule, and duration of the interview. The recordings allowed the researcher to maintain the conversations with the lecturers or keep up with their flow of thoughts without needing to take detailed notes. The lecturers were encouraged to feel comfortable by initially being asked a general question about their prior teaching experience, *Can you tell me about the class you are teaching now*?

Each interview, which took approximately an hour, was undertaken in non-working time. The total recording time was 20 hours from 20 interviews (10 initial and 10 follow-up interviews). The venue was in lecturers' offices and the meeting rooms within their departments, schools, or colleges. The tape-recorded interviews were later transcribed verbatim. Six of the eight lecturers answered in Vietnamese and the researcher later translated this data into English. The original transcript was given to each lecturer for verification in order to ensure correct and valid data were collected. A sample interview transcript was also included (see Appendix 3). Although transcribing the recording was time-consuming, the researcher chose to transcribe the interview responses in order to avoid missing any parts of data needed for later interpretation and analysis.

3.5.2   Classroom observations

Classroom observations were utilised in this study to gather data from a naturally existing specific situation of teaching and learning. In action research, observations can provide the most powerful information about reality (Hendricks, 2013). Observations were therefore used to investigate the participating lecturers' roles and their decision-making processes in actual practice. These observations also allowed the researcher to triangulate the information collected from the interviews.

The Science lecturers were each observed according to their willingness and set schedules. The researcher conducted a range of four to six observations in each lecturer's class instead of two as discussed in the original research plan before the study was begun. The extra observations were included because the lecturers allowed the

researcher to further explore actual happenings in their ESP classes and welcomed shared ideas, experiences, and English language skills. Each observation covered two 50-minute periods. In total, approximately 80 hours of observations (96 class periods) were conducted over three semesters.

As one focus of action research is to support lecturers for change, the researcher utilised participant observation to examine how they managed their classroom activities while implementing new teaching strategies. An advantage of being an *insider* observer (Creswell, 2012) was the opportunity to put the interviewees at ease. In addition, as an insider observer and participant who sought the thick description and rich data from the realities, the researcher could develop rapport with the participating lecturers (Best & Kahn, 2006; Fraenkel et al., 2012; Gay et al., 2009).

In reporting on the participant observations, the researcher completed eight open-ended items specifically centred on lesson introduction, teaching strategies, teaching aids, the role of the lecturers, their interactive decision-making, and the application of active learning activities in science (see Appendix 4). As a participant observer, the researcher co-taught with each of the lecturers by monitoring students' pronunciation of new words or facilitating a warm-up activity. In addition, the researcher assisted the lecturers to check the students' tasks (translation, writing summaries of previous topic), or to lead students' group discussions (see Appendix 6).

Triangulation assisted in verifying the data (Berg, 2009) by comparing the interpretations of the results from different sources of information. The observational data were therefore cross-checked against the tape-recorded interview responses and transcripts. The summaries of the observational notes on participating lecturers' classroom activities added further depth to interviews and also fed into the planning meetings (see Appendix 5).

Stimulated recall

Stimulated recall involved playback of the video recording of a lecturer's lesson in order to stimulate recall of his or her thought processes during the lesson in action (e.g., Calderhead, 1981; Marland, 1984). The use of stimulated recall of a science class could

provide the participating lecturer with an opportunity to be reflective and to provoke thinking by recalling the major aspects of their classroom experience (O' Brien, 1993).

Stimulated recall was selected in this present study because it was seen as the least intrusive in recalling the classroom practice context, as supported in Pirie (1996). This technique did not interrupt the participating lecturers' practice but rather allowed for recollection or revisiting of the actual happenings (Reitano, 2005).

Other benefits were that video recordings enabled the lecturers to focus on their performance (Marland, 1984; Rowe, 2009) and to identify why they chose one type of action over another in a particular classroom context (Stough, 2001). Stough further contends that stimulated recall is seen as 'a method of reviving memories' (p. 2). Thus, the participating lecturers could remember the concomitant scenario (Calderhead, 1981; Lyle, 2003); thereby planning necessary changes for the subsequent practice contexts.

The stimulated recall process was piloted in Semester Two of the 2010-2011 academic year (the first round of the research) at the lecturers' suggestion. In the following semesters, the researcher video-recorded the class activities during classroom observations so that stimulated recall acted as a way for the lecturers to review their own practice, an experience that could otherwise have been forgotten(Wear & Harris, 1994) . This recall session in the planning meetings was done the same day on which before observation was carried out because the ability to recall would be likely to decline considerably after 48 hours (Bloom, 1954 as cited in Gass & Mackey, 2000). This stimulated recall was an additional part of the class observations, which allowed the researcher to understand how the lecturers experienced the changes such as introducing a new lesson task, giving students time to discuss in groups, or receiving student feedback.

Three video recordings were made with each participating lecturer; each of these segments was about ten minutes. The first recording was specifically about the lecturers' roles in a pre-task (warm-up). The second was about leading their students' group discussion during an in-task activity (guided practice and free practice), and the third recording was made of a post-task (follow-up/ reflection). Times and duration of

videotaping are shown in the profile of a lesson tracking in Appendix 6. The recordings were first transferred onto the USB Flash Drive and then to the researcher's desktop. Later, these original recordings were given to the participating lecturers so that they could refer to them in their own time.

3.5.3   Planning meetings

After each of the classroom observations, meeting with each of the individual eight participating lecturers during their release time (after hours) was undertaken. These joint planning meetings (Hopkins, 2008) or post-observation conferences (Freeman & Richards, 1996) focused on problem solving.

Each meeting with an individual lecturer took between a half and one hour. At the meetings, the lecturers voluntarily shared reflections on their existing practice. Examining copies of observational data also allowed the researcher and participating lecturers to review their in-class practice, to reflect upon changed practice, and further discuss new action strategies for the subsequent lessons. All shared reflections and discussion notes of the lecturers' accounts of practice change were recorded in note form by the researcher and copies provided to the lecturers for their own reference and independent reflection on modifications. These recordings could be a question raised by the lecturer with regard to timing a particular task such as a warm-up activity or a student reflective writing after class hours.

These written records could include a question raised by a lecturer with regard to timing for a particular task such as a warm-up activity or a student reflective writing after class hours. Also included in planning meetings was reflective discussion; for example, Hung discussed how he tried out strategies to promote biology student speaking in English. At this time, Hung revealed that he had become aware of the importance of questioning in providing his students with an opportunity to speak more in English while interacting with other students. Similarly, Tin reflected on the benefit of using questions to encourage his students to construct new knowledge by involving them in thinking about what they were learning rather than prescribing the answers as he had done in the previous lessons. In addition to lecturer reflection on the positive impact of using

strategies on student speaking, Cuc shared her views on the benefit of engaging students in other interactive activities such as translation and pronunciation practice in groups. Truc also indicated that her role change benefited her teaching and student learning. All lecturers' reflections on their changed practices were encouraged by a list of questions, shared by the researcher. Examples of questions are: '*What do you think about the changes you utilised in your class today?*' *In what ways can you implement or make use of the strategies to encourage students to speak?*' *'How do you like to share your experiences with regard to brainstorming?*' *'What could you do to improve student writing?*'

Reflective practice was intended to lead the lecturers to establishing a community of practice with the researcher. Wenger (1998) defined community of practice as "mutual engagement" (p. 73). This involvement allowed the lecturers to reflect on planned activities for subsequent rounds of classroom observations. The reflection-on-action (Schön, 1987, 1991) aimed to engage the lecturers in making changes to their own actions in their classes that informed other practice changes and taking greater responsibility for this process over time.

3.6   The role of the researcher

The researcher and the eight participating lecturers work at the same institution but in different colleges or schools. The researcher is an English language teacher at a foreign language centre, while participants are Science lecturers at the university. Therefore, at the start of this research, the researcher's professional relationship with the participating lecturers would be considered to be that of an outsider researcher. However, over the course of the study, the researcher's role evolved into more of a co-collaborator with lecturers.

The role of the researcher has been documented in a spectrum of six roles ranging from insider to outsider researcher (Herr & Anderson, 2005). Herr and Anderson include variations such as insider studies self, insider in collaboration with other insiders, insider in collaboration with outsiders, reciprocal collaboration, outsider in collaboration with insider(s) and outsider studies insider(s). Of the six roles, the

researcher positioned himself as an outsider in collaboration with insiders. The insiders were well-qualified experts in the science field. The researcher with 25 years of experience in teaching English as a foreign language was in a more powerful position with regard to sharing expertise and supporting insiders (participating lecturers) to develop new strategies to teach ESP classes. Nonetheless, the ESP lecturers held more power in terms of science expertise. Therefore, in sharing professional experience through observations and planning meetings, the researcher took the role of both a facilitator and a collaborator over the period of the research process.

In the observations, the researcher moved from being an outsider or professional stranger (Agar, 1996) to being a participant observer or insider (Ary et al., 2010). This positioning depended on the researcher developing mutual rapport (Dewalt & Dewalt, 2002) with the lecturers. This rapport developed over time through exploring what was happening, listening to lecturers, and focusing on their views, interests, and concerns. In terms of commitment and continued involvement, the researcher role varied over the period of the change process from that of a collaborator to that of facilitator.

In the planning meetings, to balance the researcher's role in influencing the lecturers' change process, the concept of zoom lens of a camera (Wolcott, 1988) was taken into account. Taking this approach enabled the researcher to get close-up insights but also to take a wider view of a researcher in noting lecturers' reflections and perspectives about the action plan for change at different time points. The discussions led to the construction of new knowledge as seen in the formation of a community of practice (E. Wenger, 1998; E. C. Wenger & Snyder, 2000) or co-inquiry (Bray, Lee, Smith, & Yorks, 2000). In this communal inquiry, the lecturers brought their own beliefs about active learning, shared their experiences, and recognised the need to drive changes. Ultimately, while the researcher positioned himself as a collaborator of sharing experience and knowledge, the lecturers were considered as agents of change and owners of the action research process. For instance, one lecturer shared her concern with regard to time allotment for a discussion topic while having about forty biology students sit in pairs and the ways to check the quality of their speaking in English. As a result, the researcher suggested group discussion for the subsequent classes. Together

with the researcher, the lecturer came to believe that moving around the class and checking on student progress and their participation in speaking could involve students in active learning with regard to the assigned tasks.

The facilitative role, as noted by Poskitt (2005) and Harnett (2007), was of crucial importance because the success of an research approach mainly depends upon the researcher's range of pedagogical knowledge and experience of ESP teaching. The collaborative role evolved as both the researcher and the lecturers in this study played equal roles in sharing experience and expertise, discussing the different teaching tasks, and then collaboratively developing the interventions for the subsequent classes. For instance, when Cuc revealed her interest in using a warm-up activity that engaged her biology students in the lesson 'Biology and its characteristics', the researcher suggested that she grouped students first and then encouraged them to brainstorm ideas that related to the topic of her lesson.

In the interviews, the researcher's role shifted to a more objective stance. This is further explained in section 3.5.1.

3.7   Research schedule

The data gathered over three sequential semesters took a total of 24 weeks beginning in Semester Two in the 2010-2011 academic year and ending in Semester Two in the 2011-2012 academic year. Table 3.2 shows the research schedule of the research over three semester periods: Semester Two in the 2010-2011 academic year and both semesters in the 2011-2012 academic year.

The first round of data collection was conducted during eight weeks of Semester Two in the 2010-2011 academic year, which began on February 14, 2011 and was completed on April 2, 2011. The second round of data collection took place during ten weeks of Semester One in the 2011-2012 academic year, beginning on October 3, 2011 and ending on December 5, 2011. The third round of data collection was carried out during six weeks of Semester Two in the 2011-2012 academic year, starting on January 3, 2012 and being completed on February 21, 2012. The second semester period of data

collection was shorter because the researcher was allowed to conduct his home-located research for a maximum of six months over the duration of a scholarship, as entitled by New Zealand's International Aid and Development Agency (NZAID, 2008).

Table 3.2 Research schedule

SEMESTER 2 (Feb-April 2011)			SEMESTER 1 (Oct-Dec 2011)		
Week			Week		
1	Feb 14	Initial Interviews	1	Oct 3	Initial Interviews
2	Feb 21	Observations and stimulated recall discussion Planning meetings 1	2	Oct 10	Observations and stimulated recall discussion Planning meetings 1
3	Feb 28		3	Oct 17	
4	Mar 7	Observations and stimulated recall discussion Planning meetings 2	4	Oct 24	Observations and stimulated recall discussion Planning meetings 2
5	Mar 14	Observations and stimulated recall discussion Planning meetings 3	5	Nov 1	
6	Mar 21		6	Nov 8	Observations and stimulated recall discussion Planning meetings 3
7	Mar 28	Observations and stimulated recall discussion Planning meetings 4	7	Nov 15	Observations and stimulated recall discussion Planning meetings 4
8	Apr 2	Follow-up Interviews (Reflection on change)	8	Nov 22	Observations and stimulated recall discussion Planning meetings 5
			9	Nov 29	
			10	Dec 5	Follow-up Interviews (Reflection on change)
SEMESTER 2 (Jan -Feb 2012)					
Week					
1	Jan 3	Initial Interviews			
2	Jan 10	Observations and stimulated recall discussion Planning meetings 1			
	Jan 17-30	University break (Lunar New Year 2012)			
3	Jan 31	Observations and stimulated recall Planning meetings 2			
4	Feb 7	Observations and stimulated recall discussion Planning meetings 3			
5	Feb 14	Observations and stimulated recall discussion Planning meetings 4			
6	Feb 21	Observations and stimulated recall discussion Planning meetings 5 Follow-up Interviews (Reflection on change)			

Individual interviews were tape-recorded and transcribed verbatim and lecturers invited, later, to edit and verify the data. It took at least three hours to complete the transcript of each interview. The interview transcripts served as original sources of data for the researcher. These transcripts helped the researcher to go back to the source and check for accurate information provided by the lecturers, as recommended by Seidman (2006). The lecturer views, their experiences, and reflections also revealed the nature of teacher change in experimenting with new teaching strategies.

The initial interviews were conducted with individual lecturers in the first week of each of three semester time points of the study. They were intended to establish mutual rapport and then focused on identifying possible aspects of practice to support lecturers to change their teaching strategies. In the final week near the end of each semester of the study, the follow-up interviews were conducted with the lecturers.

Each classroom observation took a maximum of two 50-minute class periods (contact periods). Subsequent observations allowed the researcher and participating lecturers to reflect on the change effects of the implementation of new teaching strategies. The observations were used to seek further possible alternatives for on-the-spot classroom practices as well as to capture a more comprehensive picture of the change process. As a participant observer, the researcher helped the lecturers to facilitate students' group discussions, to check their written journal entries, and co-teach pronunciation practice of vocabulary. The researcher's role is discussed more fully in section 3.9.

Following the classroom observations, planning meetings were arranged between the researcher and individual lecturers. These meetings aimed at listening to reflections from the lecturers on the changed practice in the ESP classes. Through sharing experiences, both the researcher and the lecturers could discuss and decide how to take further actions relevant to the needs of students. In addition, the meetings allowed the researcher and the lecturers to examine observational notes, revisit the action, evaluate the change effects, and then develop new teaching strategies for subsequent classes.

3.8   Data analysis

According to Miles and Huberman (1994), qualitative data analysis involves a three-step process of data condensation, data display and conclusion making. These three steps enabled the researcher to begin the data analysis of the present study by organising the data, coding them, and searching for thematic patterns or categories (Bogdan & Biklen, 2007). In order to examine the effects of the teacher change process experienced by the participating lecturers, thematic analysis was used in the present study, as recommended by Boyatzis (1998) and Glesne (2011).

Organising the data

To begin the analysis process, the researcher transcribed all interviews and translated the data from Vietnamese into English. The data were then organised and coded using NVivo 10 software to support the thematic analysis. To ensure that information was accurate and appropriate, the interview transcripts, observational notes, and planning messages were checked, shared, and discussed with the participating lecturers. All transcripts were required to be validated, and signed by the participating lecturers. Then, these transcripts were entered into the researcher's computer files. The data were logged on a table noting date, venue, tool, participant, and focus of the research instrument for the researcher's own reference. This organisation of the data was done for management and analysis, as advocated by Marshall and Rossman (2011). To get a general sense of the data, the researcher read all transcriptions and took notes in the margins, as suggested by Creswell (2012).

Coding the data

Coding data requires analytical thinking (Marshall & Rossman, 1999, 2011). Therefore, the data were coded using words, phrases, and numbers to label the interview transcripts and the observation notes. This coding allowed for identification of emerging categories and themes (D. V. Craig, 2009) and reduced the data to a manageable form (Gay et al., 2009). Another benefit of coding is that it helps the researcher to see connections between the data and ideas about them (Goodnough, 2011). Therefore, the researcher coded the data several times as he reflected on these.

As noted above, the interview transcripts and observation data were hand coded using thematic analysis adapted from Boyatzis (1998). According to Boyatzis, a good code to develop a theme should consist of five components: a label for a theme, a definition of what makes the theme, a description of how to know the theme (indicator), exclusion to the identification of the theme, and differentiation from the theme. Table 3.3 below shows an example of the coding of the data with regard to the theme *active learning*.

Table 3.3 An example of NVivo coding

Label	Active learning
Definition	Active learning was reported as student-centred
Indicator	"Active learning is very important because students have their roles in class" (IT.Binh.S1)
Differentiation	None. All lecturers showed that they held this view.

The data were also coded by category using the NVivo 10 software. Both categories and subcategories were developed under the tree nodes. These coding categories helped the researcher to view, identify, and review the coded data at the nodes. Figure 3.1 presents an example of NVivo coding of interview responses.
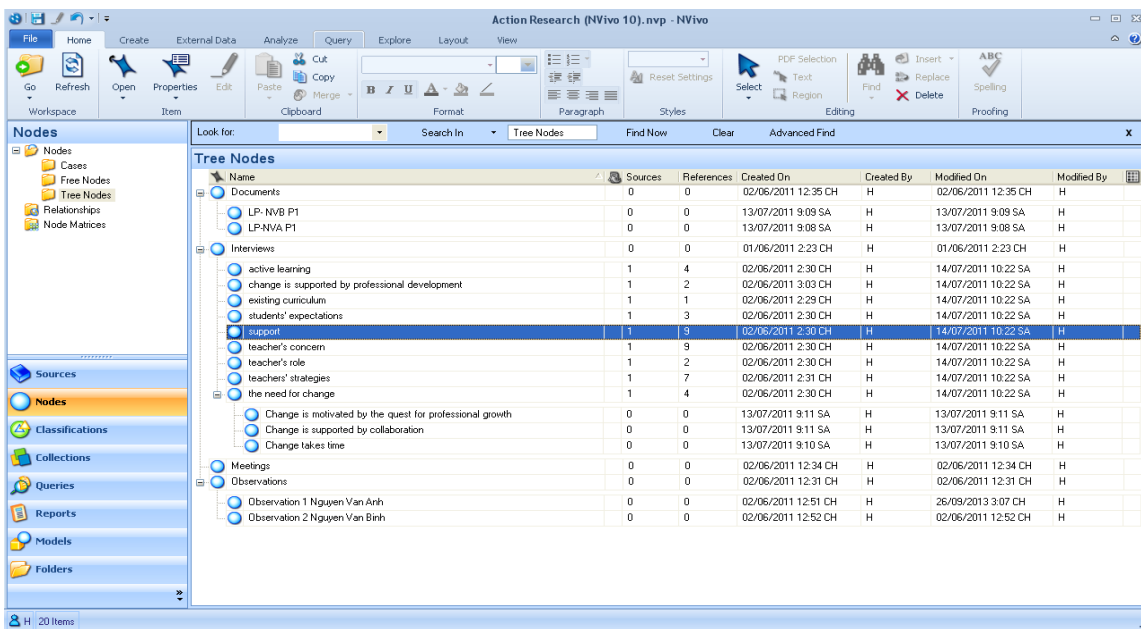
Figure 3.1 An example of NVivo coding

Identifying emergent themes

Four themes emerged from the data sources in answer to the research questions. This research was not about describing change as an end product. Rather, it was mainly about investigating change as an active and dynamic process of action, reflection, and growth, which belonged to the participating lecturers. The themes that emerged were:

- Beliefs about active learning and lecturer roles
- ESP lecturer beliefs about the change process (the need for change, sense of self-efficacy, and external support)
- ESP lecturers' concerns about the change process (time allotment, student English language proficiency levels, class size, and classroom resources)
- ESP lecturers' implementation of the change process

These themes will be discussed in more detail in Chapter Four.

3.9   Ethical considerations

This action research involved human life and teacher change so it is necessary for the researcher to take ethical considerations into account in order to protect and respect the participants. Participants should be treated as "ends in themselves and not merely as a means to the researcher's ends (J. Clark, 1997, p. 160). A full application was made to Massey University Human Ethics Committee (MUHEC) for the approval procedure in the first round of the research. Then, the amended Information Sheet and Consent Form were also submitted to gain permission from the participating lecturers for additional classroom observations and videotaping in the last two rounds. The action research in the present study met the requirements as determined by MUHEC Screening Questionnaire. The research proposal was reviewed and approved by MUHEC (PN900 No: 10/77) in December 2010. Thus, the research procedures adhered to the Massey University Code of Ethical Conduct for Research, Teaching and Evaluations Involving Human Participants guidelines. These guidelines included informed consent, privacy, confidentiality, and anonymity. Trustworthiness also played an important part in the research because it enhances the validity of the research. These ethical considerations are discussed next.

Informed consent

The first ethical consideration in this study was gaining informed consent. This principle is related to the rights and agreement of research participants (Harnett, 2007; Holly et al., 2009; Sewell, 2006). Although there was no Ethics Committee requirement at the university where the research was carried out, this qualitative study needed to comply with that university's regulations. Before conducting the research, the researcher therefore first approached the President of the university to gain his permission to allow the Science lecturers to participate in the study (see Appendices 7 and 8).

The lecturers' participation was voluntary. Initially, the researcher sent each participating lecturer an official invitation letter on Massey University letterhead following the MUHEC format for Information Sheets and Consent Forms (see Appendices 9 and 10). Then, the researcher met interested individual lecturers in person. In the Information Sheet, they were informed in detail of the research aims and procedures, the use of audio and video recording (Semester Two in the 2010 – 2011 academic year; and Semester One in the 2011–2012 academic year), and the right to withdraw from the study. Verbal and written permission was provided by the lecturers who agreed to participate in the study. They were also encouraged to fully participate in design and decision-making (McNiff & Whitehead, 2006, 2010; Poskitt, 1994; Sewell, 2006). This full involvement was necessary because the action research involved the collaborative process of planning, implementing, reflecting, and further initiating changes that evolved over time. The Authority to release interview transcripts was also sent to and signed by each participating lecturer (see Appendix 11).

Privacy, confidentiality, and anonymity

Ensuring *privacy* refers to the researcher's responsibility to protect the freedom of participating lecturers from public attention. Their names were thus kept confidential. The lecturers' identities were known to the researcher; however, *pseudonyms* were used in interview transcripts, observational protocols, planning meeting messages, and in reporting of the study in order to protect the lecturers' identities from public disclosure.

Data obtained from the lecturers were stored securely throughout the research process and kept separate from consent forms. Interview transcripts were kept on the researcher's computer hard drive, and protected by a password. The backup of data was also saved in a flash drive on which only code names appear on data. The records of planning meetings were kept in a securely locked filing cabinet at the researcher's workplace while in Vietnam and in the postgraduate room, Manawatu campus, Massey University, New Zealand. All data including audiotaped data, interview transcripts, observational notes, and videotaped data will be deleted five years after completion of the doctoral study in accordance with MUHEC regulations.

Trustworthiness of the study

In ensuring the quality and validity of action research, a prime consideration is trustworthiness (Lincoln & Guba, 1985). According to Lincoln and Guba, the trustworthiness of the inquiry involves credibility, transferability, dependability, and confirmability. An example for the trustworthiness of the study could be the use of multiple data sources (interviews, observations, and planning meetings). Both the researcher and lecturers in this study planned, developed, implemented changes, reflected on their practices over the semester, and designed new actions for change. In particular, observation notes were recorded and memos in planning meetings shared thereafter.

Credibility

Credibility is concerned with whether the findings of the study are believable (Goodnough, 2011; Lincoln & Guba, 1985). In this regard, the researcher used triangulation of multiple data sources such as interviews, observations, and planning meetings in order to cross check the accuracy of findings. Another way that the researcher established the credibility of the data was by spending periods of time working alongside the participating lecturers. This prolonged engagement and continual observation (Gay et al., 2009; Lincoln & Guba, 1985) allowed the lecturers and the researcher to share experiences. In addition, they voiced their beliefs about change, reflected on their practice, and then developed new teaching strategies in order to enhance the active learning of students in their ESP classes.

Transferability

Transferability refers to the applicability of the findings of the study to other contexts. Lincoln and Guba (1985) claim that "If there is to be transferability, the burden of proof lies less with the original investigator than with the person seeking to make an application elsewhere. The original inquirer cannot know the sites to which transferability might be sought, but the appliers can and do" (p. 298). From this perspective, although the findings of action research cannot be generalisable, the readers or other researchers can determine whether the findings can be transferred or applied to other contexts and other individuals (Hendricks, 2009, 2013). However, this qualitative action research provides rich and thick descriptions of the research contexts, participants, and procedure. Therefore, it would be possible for the findings to be transferred to similar cases of ESP teaching in other universities.

Dependability

Dependability refers to the need for the stability of the data (Gay et al., 2009; Goodnough, 2011). In this action process, detailed explanation of the multiple data sources was used enabling triangulation of the data. For example, interview data related to lecturer beliefs about active learning added further depth to observed changes in their classroom practice over time.

Confirmability

Confirmability refers to the degree to which the findings could be confirmed by others (Gay et al., 2009; Goodnough, 2011). In order to ensure the confirmability of the findings, the researcher used thematic analysis to establish the consistency of the themes that emerged from the data. This analysis provides evidence that the researcher's interpretations of the findings are rooted in "the perspective of the research participants" and that the findings can "be reflective of and grounded in the participants' perceptions" (Jensen, 2008, p. 112). Although the findings of action research are subject to the researcher's views, confirmability can be achieved by examining the role of the researcher and his relationship with participating lecturers.

3.10 Summary

This chapter has described the research methodology of the present study. A description and justification of qualitative participatory action research was presented. The process and criteria for selection of the participating lecturers was also included. The investigative tools utilised to answer the research questions, stated in Chapter Two, were outlined. The data gathering conducted with the eight Science lecturers in this study included semi-structured interviews, participant observations, and planning meetings. The data was collected over three semester periods. Ethical considerations were addressed to protect the lecturers' rights and enhance the quality of the study. Finally, the researcher also considered his roles in balancing the weight of power and expertise while working with the lecturers over time.

Chapter Four presents the findings of how eight participating lecturers experienced their change process in Science classes.

CHAPTER FOUR

FINDINGS

> Positive school change is built on common dreams, common concern, common aspirations, common trust, and common sense (M. Hoy, 2003, p. 76)

4.1 Introduction

This chapter presents the findings of eight Science lecturers who experienced the change process in a Vietnamese university. Four key themes emerged from the findings: the lecturer beliefs about active learning and the impact on their roles, their beliefs about change, their concerns, and the implementation process of active learning strategies. Each of these themes is examined in the individual cases below.

The coding of IT, OB, PM at the beginning of the reference quotes stand for the interview script, observation note, and planning meeting messages in which the data are specified. Next, the participating lecturer's pseudonym is provided. The letter 'S2' indicates Semester Two of the academic year at the time of the study. The letter 'I' shows the initial interview of the study and 'F', the follow-up interview. For example, IT.Anh.S2.I would indicate the quote is from the interview with Anh, which was conducted in Semester Two (the initial interview meeting).

For observation notes, the sequence numbers are used to indicate the time reference within a particular procedure of a lesson plan that the participating lecturer implemented. For example, OB.Anh.S2.7.15-7.40 would refer to the observation of Anh, which was recorded in Semester Two from 7.15 to 7.40 a.m. With regard to planning meetings, PM1.Anh.S2 would indicate the first planning meeting in Semester Two in which Anh shared his experience and reflected on his practice with the researcher.

Eight Science lecturers were invited to participate in the study. The range of their teaching experience was 14 to 32 years. Two of the lecturers were very experienced (Anh and Hung, with 32 and 30 years experience respectively), two had moderate experience (Binh and Tin, with 26 and 21 years experience respectively), and four were less experienced (Mai, Cuc, Lan, and Truc with 14 and 17 years experience respectively). All were senior lecturers and had taught ESP classes from one to ten years. All of the participating lecturers worked in different areas such as microbiology, chemistry, biology, aquaculture, and environmental sciences. The lecturers had overseas experiences in relation to professional development and their expertise. Table 4.1 presents a summary of the professional experiences and qualifications of the eight participating lecturers in this study.

Table 4.1 Participating lecturer experiences and qualifications

Lecturers	Years of experience	Years of ESP teaching	Qualifications/ College	Professional Development/ Overseas experience
Anh	32	10	PhD, Science	mixed program (Vietnam-the Netherlands)
Binh	26	10	PhD, Science	the Netherlands
Cuc	17	8	Senior Lecturer, Science	teaching methods (the Netherlands, Australia)
Hung	30	4	Senior Lecturer, Science	curriculum development (the Netherlands)
Mai	14	1	PhD, Science	Belgium
Tin	21	10	PhD, Science	UK
Lan	17	3	PhD, Science	Belgium
Truc	21	1	PhD, Science	USA

In this chapter, each account of participating lecturers' practice change is chronologically presented in five sections. In the first section, insights into lecturer beliefs about active learning and the impact of beliefs on their roles in Science teaching are provided. The lecturer beliefs about the change process are then examined, with particular reference to the need for change, sense of self-efficacy, and external support. Next, lecturer concerns about the change process are provided, followed by a discussion of the ways in which the lecturers implemented their change process in line with their

beliefs about active learning and roles. Finally, the chapter concludes with a summary of all cases with an emphasis on their positive beliefs about the change process as well as increased awareness of the need to change their teaching strategies to promote active learning of students in ESP classes within a university context in Vietnam.

4.2   Account of Anh's practice change

I want to learn new things and new experiences. In particular, these are my passion and personal growth. I want to get students to learn, to challenge them to think and focus on the lesson. (PM3.Anh.S2)

Anh's change process was the focus of the current study over two semester periods: Semester Two in the 2010-2011 academic year, and Semester Two in the 2011-2012 academic year. At the time of the study, as a senior lecturer with a PhD degree, Anh had 32 years of teaching experience in microbiology. He had taught ESP for more than 10 of those years, so he felt confident and fluent in teaching English in ESP classes. Anh taught 59 second-year students who had a range of different backgrounds in English language learning. He attributed his expertise to refresher courses and international conferences. Anh taught two 50-minute periods of ESP per week over a 15-week semester. The ESP paper that he taught was designed to assist students in thesis writing which they had to undertake by their fourth academic year, to help them in comprehending the basics of literature reviews, and to assist with building reading skills sufficient for their science-related subjects in English (IT.Anh.S2.I).

4.2.1   Beliefs about active learning and lecturer roles

This section presents Anh's beliefs about active learning as a student-centred approach to teaching, the positive effect of using active learning, his reflections on the change process, and his role as a lecturer.

Beliefs about active learning

Anh's beliefs about active learning were related to student-centredness and these were found to grow stronger over time. Initially, Anh believed that active learning was related to what students were doing in his class. He said,

> *Active learning is very important because students can freely contribute to discussion in class. They do not need to wait for others or me to tell them what to do. (IT.Anh.S2.I)*

From Anh's comment, it appears that greater emphasis was placed on students gaining procedural rather than declarative knowledge.

In the follow-up interview at the end of the study, Anh reaffirmed his beliefs about active learning in relation to the role of the students. He said,

> *I just tell students to access the internet or discuss in group. Or I only present basic knowledge to students and require them to find information, exchange with friends or consult with me via email at any time. (IT.Anh.S2.F)*

He was more aware of his role shift from a knowledge provider to a facilitator of active learning, and of students who were independent of him in constructing new knowledge by accessing resources. His instructional change was thus linked to his motivation to encourage learner autonomy.

Anh was asked about the effect of implementing active learning in his class. He reported that active learning had fitted positively into his teaching although his initiatives demanded more time and effort:

> *I think active learning has been useful although I had to do many things and spent hours preparing new lesson plans and problem solving. In previous classes, I had not considered the answers to questions raised by students because they were passive. (IT.Anh.S2.F)*

The above quote indicated the increased involvement of both Anh and his students in co-constructing new knowledge.

In a planning meeting, Anh said that he valued collaborative planning for the active learning strategies that he had experienced in the study:

> *I believe active learning is good when students actually like to study and ask questions. Students learn better, feel more confident, and gain more knowledge*

for the subject via seminars, discussions, and articles. They also feel more relaxed. (PM1.Anh.S2)

The changes Anh had made in his class seemed to have motivated students to learn and provided them with an active learning space that moved them beyond the walls of the lecture rooms or their usual zone of knowledge.

Anh further noted the benefits that students could get from his interventions:

Students talked more in pairs or small groups. More students liked to tell what they knew about the topic, not waiting until being called to do so because they had not been engaged in these new activities. (PM2.Anh.S2)

The addition of speaking activities demonstrated a major change in his teaching strategies. Anh believed that pair and group work enabled students to internalise new knowledge for their future use.

Beliefs about lecturer roles

In moving students beyond traditional ways of learning assigned tasks, Anh noted that his role shifted between being a controller, a knowledge provider, and a facilitator at different stages of his lessons:

I think now I act as a facilitator rather than a controller. Otherwise, students are still passive. I try to help them with ideas and key words, and make them think about what they want to study and to discuss. (IT.Anh.S2.I)

Anh's comments suggest that students were engaged in learning and thinking about the tasks that they chose rather than being asked to do. He viewed himself as a facilitator while providing students with opportunities to learn as dynamic owners of knowledge.

At the end of the change process, Anh positively reflected on his role change:

I kept asking what students know and want, such as 'What else can you say about this?' rather than having them listen to me all the time as I did. In pairs or groups, they actually learned from interacting with others. (IT.Anh.S2.F)

These comments suggest that Anh had changed his views on the lecturer-student relationship, which allowed students to take more active roles. By taking a facilitative role, he engaged students in a dialogue that entailed thought-provoking and shared ideas.

Discussion now turns to Anh's beliefs about the change process.

4.2.2   Personal beliefs about change

Anh's beliefs about his change process were related to the need for change, his sense of self-efficacy, and external support.

The need for change

Anh believed that there was a need to develop interactive tasks. He said, *"I think change is very important because students have to comprehend and analyse articles that prepare them for the fourth year study"* (IT.Anh.S2.I). He also noted that reading and vocabulary were two major aspects students wanted to learn: *"I think what students expect to learn is comprehending and analysing articles to apply these skills in their thesis writing rather than just learning new words"* (IT.Anh.S2.I). His beliefs about how to incorporate critical thinking skills were therefore taken into consideration to enhance the active learning of students.

Sense of self-efficacy

Initially, Anh was asked how he would change if there was no support. He revealed that lacking support could challenge his self-efficacy: *"If we do not have support from colleagues or the university, it will be very difficult"* (IT.Anh.S2.I). Anh thus believed that the external support, as described below, might influence his change process and that effective change depended on institutional support rather than his personal level of expertise. However, at the end of the study, Anh believed himself to be an agent of change because he could motivate students to learn (IT.Anh.S2.F).

In a planning meeting at the end of the study, Anh shared his *passion* for making student learning more interesting: *"I really want to learn new things and new experiences. I want my students to learn and challenge them to think about the lesson"*

(PM3.Anh.S2). These statements may indicate Anh's strong belief about the desire to learn new teaching strategies that could engage students in active learning.

External support

Anh's beliefs about external support and his reflection on the value of support provided by the researcher emerged from the interview data.

Initially, Anh believed that support for change should come from the administrative level. He identified that institutional policies should support the use of his teaching initiatives. He said, *"I think the most important thing is the university should provide more time, more budgets for more books or more databases"* (IT.Anh.S2.I). Anh believed that such support was particularly related to provision of time, funding, and classroom resources. Anh also thought academic colleagues played a role in providing professional support to enhance his teaching practice:

> *During semester, we discuss with colleagues how to deliver lectures to students of the same class. They can assist me with some ways in presenting the lessons and I can help to provide them with more information and new knowledge. (IT.Anh.S2.I)*

It appears that besides financial and material support, Anh also believed shared experiences and expertise, particularly pedagogical knowledge in ESP teaching, could nurture his teaching practice and professional growth.

At the end of his participation in the study, Anh indicated that he valued the support from collaboratively working with the researcher, which had encouraged him to plan and make use of active learning strategies in his class:

> *At the classroom level, I mean the support from the English language teacher, like you over the past semester. I think it will be useful to share experiences, just like what we did at the post-observation meetings, writing lesson plans that include the language skills, steps of the lesson such as warm-up, brainstorming, and discussion tips. (IT.Anh.S2.F)*

It appears that Anh not only considered the integration of English language teaching strategies into the lessons to be helpful, but also noted that collaborative planning for

new interactive activities allowed him an opportunity to make more effective changes and to learn new ways of teaching English as a language teacher. This teacher learning could lead him to continue his professional growth: "*I feel more confident after we discussed and shared teaching experience. I will continue applying strategies you have shown me*" (IT.Anh.S2.F). This suggests that Anh recognised the importance of the pedagogical knowledge which allowed him to implement new teaching strategies in his future practice, and that he felt collaboration was a way of motivating him to take responsibility for his own change process and to sustain it in the future. The belief about his personal responsibility and future sustainability of the change process was experiential, as described in his comment on the usefulness of collaborating on planning strategies for incorporating English language skills into different stages of ESP classes. However, Anh also revealed his concerns about how some teaching conditions might influence the endeavour to change his current practice, as discussed next.

4.2.3   Concerns about the change process

Anh's concerns about the change process were associated with time allotment, student English language proficiency levels, class size, and resources.

Time allotment

As students were assigned only two periods per week to learn English for microbiology, time constraint was therefore the first issue raised by Anh. He claimed that change was important but 50 per cent more time would be needed to cater for active learning. He said:

> *I start a new way to deliver lectures but we do not have enough time. Nowadays we only teach students 30 periods for one paper, but it will be better to have 45 periods. (IT.Anh.S2.I)*

Student English language proficiency

Anh expressed his concerns about the mixed levels of English language proficiency that students had in his class and the influence on their ability to meet curriculum demands. He stated:

> *My biggest concern about the ESP curriculum here is that we have to teach students to comprehend through reading, and later on, they need to use their own knowledge to write theses by the fourth year. (IT.Anh.S2.I)*

In particular, Anh mentioned the impact of the range in English proficiency among students and the effect this may have on the implementation of active learning strategies. He said, *"Some students were at advanced English and others at elementary level, so it is difficult to get them to discuss a given topic"* (IT.Anh.S2.I). He added that students with a low English proficiency level were perceived to be shy and quiet, although this was often to save face in speaking. In contrast, students with higher levels of English proficiency were more confident. Therefore, Anh felt that mixed-level students might be problematic, and that affected his decisions about changing practice. The problems could be a delay in keeping students on task, in maintaining their conversation, or completing the lesson within time constraints.

Class size

Anh noted that class size was another major difficulty that prevented him from enacting changes in his class: *"Now, I have 59 students. It would be better if I had 15 to 20 students. In fact, I have a very big class"* (IT.Anh.S2.I). Class size appeared to be a barrier to more interactive practice during his change process. Anh was perhaps aware of greater opportunities that could expose students to active learning in a small class.

Classroom resources

When asked what he could change in his current practice, Anh revealed that accessing resources such as articles and technological devices was a further aspect preventing change in his practice: *"Every group of students should have more articles for literature reviews. We do not have enough databases or data projectors"* (IT.Anh.S2.I).
The lack of resources identified by Anh was linked to the role of financial support. These aspects were perceived to ease the teaching and learning process in close connection with student English language proficiency, time, and class management.

Discussion now turns to how Anh experienced the change process.

4.2.4   Change process

Additional evidence of the changes that Anh had implemented in his class is provided by examples from the observational notes. Reading and speaking activities were two integral parts of Anh's teaching approaches. Students were seated randomly in small groups of five and engaged in the reading task for ten minutes. Anh and the researcher encouraged students to interact by giving them prompts and checked if they needed support (OB.Anh.S2.7.10-7.20am). In a planning meeting, Anh also revealed that he now understood reading for main ideas was essential because students needed an exact content knowledge (PM4.Anh.S2).

Another strategy that Anh had used to construct knowledge of the lesson was getting students involved in reflective writing. The episode below shows how Anh played the role of a facilitator rather than a lecturer.

> *Anh had students write a reflective journal on what they learned. Anh and the researcher moved around the class and checked student work. Students presented ideas to the class and received feedback. (OB.Anh.S2.8.25-8.40am)*

Anh also found that speaking activities allowed students to understand their specialised knowledge with regard to critical thinking (PM5.Anh.S2).

The following example provides further evidence of the development of interactive decisions in Anh's practice observed later in Semester Two of the 2011-2012 academic year. In giving students opportunities to take more active roles in the learning process, Anh utilised three different techniques: panel discussion, brainstorming, and concept mapping.

> *Each student in a panel group presented a task on 'Sewage Treatment' while the rest listened and raised questions. Anh had students brainstorm the topic, and then provided them with clues to guess new words and express their ideas. Later, he had students expand that topic by connecting these ideas. (OB.Anh.S2.7.00-7.40am)*

These extracts seem to reflect Anh's role change as a facilitator of a student-centred active learning approach because he involved his students in speaking activities. Anh

explained that panel discussion encouraged by the researcher enabled students to relate to prior knowledge and changed the class atmosphere. Anh further indicated that brainstorming and concept mapping techniques allowed students to speak more English in class. Moreover, he was exposing students to in-depth thinking about the lesson (PM6.Anh.S2). Therefore, his new teaching strategies seemed to increase interactions among students, their interests and attention, which stresses the active role of students.

At the end of the study, Anh indicated that students responded to his new teaching strategies as a positive learning experience: *"Students have fun by saying what they know and presenting that knowledge to others. They bring questions to class now, while they had not been told to before"* (IT.Anh.S2.F). This belief suggests that the changes in student attitudes towards learning in this paper related to the initiatives he had taken in encouraging greater involvement among students. Once students were engaged in the learning process, they could decide what they wanted to learn and would be more inclined to interact and collaborate with others (both teacher and students) to push back the boundaries of content and English language knowledge.

After experiencing change over two semester periods, Anh reflected his positive view: *"I like to group students randomly, making them active in discussions and group activities."* Anh further revealed his intention to enhance student learning: *"I felt more confident after we discussed and shared experiences. I will continue applying the skills."* (IT.Anh.S2.F) Anh expressed his greater confidence in his capability to change practice and conceptualised the importance of the need to implement new teaching strategies in his future practice. He felt that such a collaborative undertaking was a way of motivating him to take responsibility for his own change process and to sustain this potential for change in the future.

4.2.5   Summary of Anh's change process

This case shows Anh's positive beliefs about the change process and his growing awareness of the need to change his practice. Anh's sense of self-efficacy can be seen when he conceptualised change as *passion.* This helped him to resolve the concerns he identified regarding time, student English language proficiency levels, class size, and classroom resources. Despite a low sense of self-efficacy at the start of his participation,

Anh believed he was committed to change through working with the researcher to develop and implement new teaching strategies. This commitment reflected his personal learning, professional growth, and sense of self-efficacy. He believed that to be an agent of change could provide students with better opportunities to learn in critical and meaningful ways.

In facilitating his teaching of content knowledge, Anh believed that financial support for learning resources would allow him to effect change. He also believed that support for change must be generated from institutional policies, and that the collaboration with the researcher was valuable for him to learn and integrate new teaching strategies into the lessons. In addition, his beliefs about active learning and teaching roles were described. Anh expressed dedication to teaching by enabling students to become active learners in the learning process. His reflections on experiencing the change process provided a positive view on teacher change that influenced his choice of teaching strategies in the ESP class.

4.3   Account of Binh's practice change

Lecturers have to find their own ways to teach their own papers. As a teacher, academic advisor, or supervisor, I know what I can do for my students. In other words, I have a strong sense of responsibility to make changes. (IT.Binh.S2.I)

Binh participated in the study throughout two semester periods: Semester Two in the 2010-2011 academic year, and Semester Two in the 2011-2012 academic year. At the time of the study, as a senior lecturer, Binh had 23 years of teaching experience. With a PhD degree from overseas in chemistry, Binh had taught ESP for seven years and was the only one in the College to teach this paper. During the study, he had a senior position in the College. The ESP paper was designed for 41 chemistry second-year students who took two 50-minute periods per week over a 15-week semester. Students were expected to use ESP knowledge in presentations, seminars, and reading and vocabulary use, in the context of chemistry. This paper needed to provide students with sufficient English to be ready to communicate with foreign interviewers for future job opportunities and to translate their knowledge of the field into practice.

4.3.1 Beliefs about active learning and lecturer roles

This section examines Binh's beliefs about active learning as a student-centred approach, the value of collaborative planning, his positive reflection on changes, and his role as a lecturer.

Beliefs about active learning

At the onset of the study, Binh associated active learning with the role of the students in their learning process. He said, *"It's a difficult question. I think active learning depends upon student involvement and their responsibility or accountability for their studies"* (IT.Binh.S2.I).

As Binh was involved in the change process, in the interview at the end of the study, he acknowledged that active learning had fitted into his teaching and had been a positive experience up to this time:

> *Active learning is very useful because it has fitted with my role. Previously, I lectured and my students listened. They only knew the literal interpretation through Vietnamese translation of texts and were passive. They forgot many things. Now I get students to do many activities; therefore, they can use words with various meanings to fit in the context of their major. (IT.Binh.S2.F)*

Binh's comments demonstrated his role shift from a traditional lecturer to a facilitator of active learning. His teaching of vocabulary in context was considered as a means of relating prior to new knowledge. Such changes indicated that the higher order thinking he utilised helped students to learn more actively. Thus, students could learn, internalise their learning, and apply new knowledge.

Binh further extended his beliefs about active learning in relation to interacting with students and highlighting the role of students in the learning process. He said,

> *Active learning is related to lecturer-student interactions. I have to prepare the material well and students are interested in the learning process. Students prefer to learn, not having learning imposed on them. (IT.Binh.S2.F)*

In a planning meeting, Binh indicated he had seen the positive impact of active learning on students:

> *Changes have had a positive impact upon student learning. As stated earlier, I used four English language skills while teaching. Students felt excited, confident, and liked to share their ideas about different parts of chemistry. (PM1.Binh.S2)*

Binh's changes in his practice were likely to motivate students to learn in a friendly and active learning environment that could expose them to discover other knowledge domains. He could see how the changes he had made to his practices affected his students, and thus he had an experiential basis for changing beliefs.

Beliefs about lecturer roles

In line with Binh's beliefs about active learning, Binh indicated a shift between his roles as a knowledge provider, a lecturer, and a facilitator at different stages of his lessons:

> *The teacher has to master vocabulary. Therefore, in the first lesson, I play the role of a guide. When students present ideas or opinions, I provide them with translation of new terms. While students work in groups, I facilitate their tasks. (IT.Binh.S2.I)*

This reflects how Binh conceptualised active ESP teaching as engaging his students in an interactive learning process.

Binh's beliefs about the change process are now examined.

4.3.2 Personal beliefs about change

Binh's beliefs about the change process indicated the need for change, his sense of self-efficacy, and various forms of external support.

The need for change

Binh stated a belief that change was needed and, he also noted the lack of resources. He said, "*I think change is needed [but] no curriculum guideline has been available.*" However, he also asserted that learning was most likely to occur as a result of the

contribution of the lecturer expertise, saying: "*Student learning completely depends on teachers' experience and knowledge*" (IT.Binh.S2.I).

When asked about what students preferred to learn in the ESP paper, Binh believed that his students' positive learning attitudes encouraged him to drive change in his practice:

> *Students like to study this paper because of interactions. They can find references for tasks and prepare for vocabulary. They understand that this paper is a part of their interest rather than a required one (IT.Binh.S2.I).*

The quote illustrates that classroom interaction motivated Binh to play a facilitative role in student learning. This new role could help students to find their own ways to construct new knowledge.

Sense of self-efficacy

Nonetheless, Binh also demonstrated his strong sense of self-efficacy when asked how he would manage if there was no support. He said,

> *Lecturers have to find their own ways to teach their own papers. As a teacher, an academic advisor, or even a supervisor, I know what to do for my students in learning this paper (IT.Binh.S2.I).*

 It is evident in his comment that he believed he was an agent of change because providing students with opportunities to learn was related to his commitment to his teaching career as a Science lecturer and meeting the needs of the students. However, in making changes in his classroom practice, Binh also believed that support from the institution, college and colleagues was needed.

External support

Binh recognised the importance of the need for additional support from the institution: "*I think the University should provide conditions for lecturers to design the program of study*" (IT.Binh.S2.I). He believed that institutional policies played a central place in the change process, particularly in relation to ESP curriculum and teacher working conditions.

One particular point Binh noted was that creating networks of teachers or establishing rapport with academic colleagues from other disciplines was needed in teaching this ESP paper: *"Since the teacher must be knowledgeable about ESP, connections with lecturers of different subjects especially in specific subjects are important to share experiences or discuss professional matters"* (IT.Binh.S2.I). This quote suggests that Binh believed change in his classroom practice was related to his perceptions of himself as part of the wider institution in interaction with his academic colleagues. In addition, it is likely that change was driven by the institutional rather than the personal level. In particular, Binh identified that support from colleagues with other ESP lecturers would enhance and broaden his professional learning:

> *If two or more lecturers are involved in teaching the same ESP paper within the department, it will be much better because it avoids subjectivity in teaching practice. In addition, more lecturers will certainly share updated and appropriate information and ensure professional knowledge (IT.Binh.S2.I).*

When asked about curriculum and instructional change, Binh further asserted the importance of leadership roles that the college and department could take in facilitating the curriculum policies and delivery, and particularly through collaborative involvement:

> *The College must set the guidelines. In addition, the department and colleagues have to support professional development. Thus, lecturers should have on-the-job training, improve themselves, and know how to use their knowledge appropriately and creatively to engage students in active learning (IT.Binh.S2.I).*

At the end of his participation in the study, Binh noted that he valued the support for the pedagogical knowledge he gained through working with the researcher. This type of support allowed him to initiate changes in his classroom practice. He said, *"As with the teaching methodology, while working with you as a teacher of English, I learned how to use the language skills or to conduct classroom discussions"* (IT.Binh.S2.F). It can be seen from Binh's words that he recognised how the researcher supported change at the experiential level, particularly through English language teaching skills that played a role in making the relevant content knowledge communicable to students in his class.

However, Binh noted the concerns that might influence the ways in which he planned to make changes to his practices, as examined next.

4.3.3 Concerns about the change process

Binh considered how change affected student learning with respect to time allotment, student English language proficiency levels, and class size. Each aspect of his concerns is described below.

Time allotment

Binh indicated that the time was insufficient for involving his students in interactive tasks initiated by the institution, *"Well, 30 periods gives us limited time. As the university now promotes a credit-based system, this paper is optional"* (IT.Binh.S2.I). He said, *"I think we need 45 periods."* (IT.Binh.S2.I). He went on to note that, *"This paper requires students to spend much time learning in order to meet the course requirement"* (IT.Binh.S2.I). In fact, his suggestion is that it requires 50 per cent more time to plan for teaching an ESP paper than the university policy makers can offer.

Student English language proficiency

Binh was also concerned about students' Basic English skills (reading and vocabulary) and critical thinking skills: *"My biggest concern is to teach students how to read a scientific text well and how to use the right vocabulary in the context of chemistry"* (IT.Binh.S2.I). Binh further noted that students' mixed levels of English in his class could challenge him to plan interactive activities in relation to task performance and curriculum demands:

> *Students enter the university from different provinces. Those who have seven full years of English study at high school outperformed those who had three years of English instruction. Specifically, students from more remote rural areas are challenged by the differences in English and must spend more time catching up with others. (IT.Binh.S2.I)*

Class size

English proficiency differences were perceived to be even greater in large classes:

I used to have 30 students and this was very good to organise activities. However, in a class of more than 40 students, there often exists a big difference of English literacy, causing difficulty managing the class. (IT.Binh.S2.I)

The next section looks at how Binh experienced the change process that aligned with his beliefs about active learning in his classroom practices.

4.3.4 Change process

Initially, Binh focused on reading and translation to teach his ESP class. However, while participating in the change process, he was observed including interactive activities in this. Binh explained that correct English for chemistry must be used, so correct translation allowed students to understand the technical terms (PM2.Binh.S2). The following observation notes revealed his new instructional practices:

Binh had students read online the chunks of English text on organic chemistry and required them to translate sentences into Vietnamese spontaneously. In groups, students had to find the key ideas of the reading topics and each group leader summarised the main points. Students took turns to read aloud the text segments. (OB.Binh.S2.13.30-13.50pm)

Pronunciation practice was included, as Binh believed correct pronunciation of vocabulary improved students' understanding of the lesson. Before the class ended, Binh had students write a summary of one of the ten categories of chemistry to check whether students understood the lesson and their writing skills improved. Observation data showed that Binh not only used translation strategies, but he also used interactive group work. The topic-based tasks suggest that Binh believed that changes in his practice influenced the ways in which students learned. His role changes suggest he now described himself as a facilitator rather than a traditional lecturer. Binh also used the four language skills to engage student in active learning tasks.

Another strategy Binh used in his class was video clips. For example, students viewed a video clip of Massachusetts Information Technology (MIT) lecture notes (open courseware) about chemistry before interacting:

Students were asked to watch a video clip for a minute, listen, and tell the key concepts from the clip. Binh encouraged students working in pairs to explain or

guess the meanings of the concepts before interpreting and translating the terms into Vietnamese. Students read and verbally translated the segments online. These segments were analytical, inorganic, and agrochemicals. (OB.Binh.S2.14.50-15.10pm)

Class observations identified Binh's implementation of active learning strategies in relation to critical thinking. For instance, the data showed that students had to conceptualise and then interpret the information or meanings of technical terms in order to find an answer to his question. Binh later became aware of the importance of providing students with opportunities to connect new knowledge through integrated skills and encourage speaking activities in English. He elaborated on his changed practice: *"As a student-centred approach is my aim, I want to help them learn, find their own ways, and search for references"* (IT.Binh.S2.F). This suggests that Binh encouraged student autonomy and creativeness to inquire into their specialised area.

At the end of his participation in the study, Binh viewed his required role change as a positive experience:

> *Since we discussed the teaching methods for this paper, I understand that all four English skills should be integrated in my lessons. Students are seen as central to the learning process and the teacher is a facilitator. (IT.Binh.S2.F)*

4.3.5 Summary of Binh's change process

Binh's case shows he believed the need for change was important in his classroom practice although there was a slight variation in his beliefs about active learning at the initial stage. However, Binh's beliefs about active learning were related to the role of the students in their learning process and the inclusion of classroom interactions. Binh also indicated that change was influenced by provision of time, student English language proficiency, and external support. After participating in the study, Binh believed in students being the centre of the learning process. This belief was likely to reflect his sense of self-efficacy likely based on his competence rather than external influences. Binh's belief changes in relation to student learning enabled him to become an agent of change and to shift his roles in developing active learning strategies. Binh contended that as a committed teacher and as a facilitator of active learning, change was

inevitable, and that students should be responsible for their own learning. He valued support in collaboration with the researcher over the time of the study.

4.4   Account of Cuc's practice change

> *I am always thinking of more effective ways to teach vocabulary to students when they learn this paper. We cannot force the students to do what we want, but we need to make them interested in their study and know why they learn. (IT.Cuc.S2.I)*

This section presents the case of Cuc who participated in the research in Semester Two during the 2011-2012 academic year. At the time of the study, Cuc was a senior lecturer who had 17 years of teaching experience in biology. Although she had taught ESP (or English for Biology) for the last eight years, there was no teaching guide on this paper and the only reference book was written by another biology lecturer. Therefore, she had to adapt her teaching materials to reach the university targets for students in the teacher education programme. The ESP paper that she taught was focused on the high school students' needs for real-life applications of the knowledge (IT.Cuc.S2.I). Cuc taught 50 second-year students two 50-minute periods per week over a 15-week semester. The ESP paper was also designed to provide students with reading and vocabulary skills needed to understand and translate the biology articles so that students could develop their own ways of learning.

4.4.1   Beliefs about active learning and lecturer roles

This section examines Cuc's beliefs about active learning as a student-centred approach, the value of using active learning, her reflections on the change process and her role as a lecturer.

Beliefs about active learning

At the beginning of the study, Cuc believed that promoting active learning meant being student-centred. She said, *"Active learning is focused on the role of students, particularly how to help them build up new knowledge from previous experience and how to connect that knowledge"* (IT.Cuc.S2.I). The data related to Cuc's practice

highlighted high order thinking that required students to synthesise what they learned and build on prior knowledge to construct new knowledge.

At the end of her participation in the study, Cuc asserted that active learning had fitted into her teaching. She said, *"Through student attitudes, I realise that they like this paper. They express more ideas, speak more in English, and participate in more activities in a friendly and collaborative way"* (IT.Cuc.S2.F). She went on to describe her beliefs about active learning in relation to classroom interactions:

> *Students were previously not told to make presentations in class. However, through my work with you and encouraging students to make presentations, they now do the job very well and perfect performance styles. (IT.Cuc.S2.F)*

Cuc became aware that these presentations encouraged students to contribute more ideas and discussion with their peers for in-depth understanding of the lesson.

Beliefs about lecturer roles

Initially, Cuc believed that by changing her roles, she was able to help move students beyond the passive learning they were used to. She said:

> *I am a controller in class activities. In the role of an instructor I assign them exercises and then correct their mistakes to help them know where they are. In addition, I act as a facilitator in leading group discussions. (IT.Cuc.S2.I)*

Cuc recognised the need for a role shift from a controller to a facilitator at different stages of the lesson. She added that she helped *"less able students in practising English skills"* (IT.Cuc.S2.I). Thus, by taking a facilitative role, Cuc got students involved in speaking activities since they were seen as owners of new knowledge in their learning process.

At the completion of her participation in the study, she revealed an increased awareness of her role change:

> *I provide students with knowledge and the way to approach that knowledge. However, I focus more upon teaching them how to learn, depending upon the stages of the lesson. I have different roles such as being an observer, a*

facilitator, or an assessor. I think the role of a facilitator or a guide dominates. (IT.Cuc.S2.F)

These comments suggest that Cuc recognised the importance of the interwoven roles that she had taken in promoting her student learning. She now believed that by taking a facilitative role, she could provide students with opportunities to become more responsible for constructing their own knowledge as active learners. Further role changes were shown by the strategies that Cuc implemented in the change process, as detailed in section 4.4.4.

4.4.2   Personal beliefs about change

Cuc's beliefs about the change process included her perceptions of the need for change, her sense of self-efficacy, and various forms of external support, as described below.

The need for change

Cuc believed that there was a need for change in her teaching practice aligned with the university's policies, and that the willingness to change was more inclined to foster her professional efficiency. She said,

> *I think changes help me improve my practice. It is very important to change the objectives, purposes, assessment, and teaching methods. Change takes place as it responds to the needs of students and of social development. (IT.Cuc.S2.I)*

Her words suggest that she realised the importance of linking students' academic goals and the need for national advancement through changes to practices.

Cuc further noted that her students preferred to learn vocabulary and expressed their views on what makes good teaching. Cuc said, *"Students want to learn vocabulary and understand the word meanings used in biology contexts."* She continued that students also wanted to pronounce the terms exactly (IT.Cuc.S2.I). As pronunciation was seen as integral to ESP learning in relation to listening and speaking tasks, vocabulary learning appears to be not restricted to the word meanings themselves, but rather includes the productive use of words.

Sense of self-efficacy

Cuc associated change with her sense of self-efficacy by noting the commitment she had to teaching, and as a result, she learned from the collaborative undertaking, *"I improve myself because I need to understand how to use correct grammar and words in context"* (IT.Cuc.S2.F). This statement suggests the endeavours Cuc made for her professional growth, and the role she played in her teaching career.

When asked how she would manage if there was no support, Cuc believed she was an agent of change. She said, *"If I do not make any changes in teaching, I will be left behind and cannot improve my teaching"* (IT.Cuc.S2.F). Thus, she viewed herself as a person who had been ready to change and became aware of the need to consider new teaching strategies that allowed the students far better learning opportunities. Cuc's perceived sense of self-efficacy also addressed the link between her responsibility as a Science lecturer and student learning outcomes in the ESP class.

External support

At the beginning of the study, Cuc considered how change needed support from the institution and mainly from the English language teachers. She said,

> *The University annually organised conferences and workshops on teaching methods that benefited me a lot. I also need the support from English language teachers like you to integrate the English skills into lessons. (IT.Cuc.S2.I)*

At the institutional level, Cuc asserted the need to learn more pedagogical content knowledge or teaching strategies in close connection with professional growth in order to align with the university direction for change. At the operational (classroom) level, she believed she could make changes if provided with opportunities to learn and apply new teaching strategies in actual practice contexts.

Cuc elaborated on the benefits of support particularly from the researcher who had encouraged her to implement active learning strategies in her class:

> *I learn a lot from this study. For example, I know how to lead a lesson by a warm-up activity. I narrow content knowledge to increase group work and*

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discussion, so students learn more skills and improve grammar and pronunciation. (IT.Cuc.S2.F)

After experiencing collaborative planning, Cuc mentioned how much she valued the support she had received:

> *I myself gained more experiences, particularly many interactive strategies, which help my students learn more actively. I also learned from the challenges faced by students and now help them to use correct grammar in their writing and pronunciation. (IT.Cuc.S2.F)*

Cuc was referring to the relevance of the integrative use of both productive and receptive skills. Cuc believed that change was seen as a way for her to learn more about many aspects of language teaching practice through which her students could learn better. However, Cuc identified the concerns about other teaching conditions that might prevent her from implementing active learning strategies in her classroom practices, which is discussed next.

4.4.3   Concerns about the change process

Time allotment, student English language proficiency levels, and the focus on pedagogical content knowledge were identified as Cuc's concerns about the change process.

Time allotment

In the initial interview, Cuc was concerned about the limited time to teach the ESP paper. She claimed that although change was important, there was now 50% less time allocated by the university to cater for her lesson planning:

> *In the past, this paper was three periods per week. Since the credit-based system was set, I have had only two periods per week. Thus, I have to make the lectures short and concise. (IT.Cuc.S2.I)*

She went on to explain that more time was necessary to deal with the new interactive practice:

> *If I have more time, I will get students to practise more. In the past, I taught reading and translation only. Now I do not have enough time to do so. Therefore, students must prepare the lessons at home. (IT.Cuc.S2.I)*

Student English language proficiency

Cuc showed she was aware of the student attitudes towards learning ESP by expressing her concern about their English language proficiency:

> *I do expect students to have a positive attitude towards the paper instead of learning this paper only for passing the exams. Most of the biology students are likely to have limited English language proficiency. (IT.Cuc.S2.I)*

Cuc explained the variations in English language proficiency among students in her class: *"While some students studied the seven-year English language programme, others learned English for only three years or did not learn English at all due to the shortage of English language teachers"* (IT.Cuc.S2.I). Thus, the range of student English language proficiency might prevent Cuc from making changes.

The focus on pedagogical content knowledge

Another challenging aspect in relation to the change process that struck Cuc was how to balance teaching focus on pedagogical content knowledge with the English language needs:

> *What concerns me most is how to teach this ESP paper efficiently so that students can not only master the content knowledge but also practise reading skills and translate texts into Vietnamese. (IT.Cuc.S2.I)*

Cuc considered that teaching methods were pivotal in her teaching. Her priority was to help students in her class to learn rather than the process of learning itself.

The section below examines Cuc's change process.

4.4.4   Change process

Before participating in the study, Cuc used reading and translation strategies which were the typical modes of current teaching approaches. Observational data provided further evidence of the changes Cuc implemented in her class.

> *At the beginning of the lesson on 'Biology and classifications of organisms', Cuc had students number off, one to five around the class and required them to sit in groups, discussing what they expected to learn. Students read aloud and translated posters into Vietnamese. (OB.Cuc.S2.7.00-7.35am)*

The way in which Cuc arranged student seating in her biology class engaged students in practising not only reading and translation strategies, but she also involved them in interactive group work activities. Her grouping of students allowed them opportunities to interact with her and with other students and to relate to new knowledge of the lesson she had presented to them, previously.

Following the steps in presenting the lesson, Cuc indicated that brainstorming and concept mapping techniques were two major contemporary teaching strategies that provoked student thinking (PM1.Cuc.S2). Her new teaching strategies, described below as the second example of classroom observations, also allowed students opportunities to improve their speaking as that was predominantly used in her practice:

> *Students were asked to brainstorm what factors influence the development and growth of trees. Then, they were required to make a concept map on biology and its characteristics. Cuc asked students to spot mistakes from their friends' answers. (OB.Cuc.S2.7.00-7.15am)*

During the planning meeting, Cuc shared what she found worthwhile about brainstorming and concept mapping. She claimed that these skills got students to think about the lesson. Thus, students became more active through interaction (PM2.Cuc.S2). These strategies reflected Cuc's role changes consistent with her views about integrated skills stated in the follow-up interview.

Cuc also acknowledged the benefits of collaborative undertaking during the follow-up interview:

> *This participatory research is useful because it allows me to change a lot and forward my professional growth. Action means improvement and commitment to inquiring into classroom practice. (IT.Cuc.S2.F)*

Her emphasis on the effectiveness of changes in practice was likely to be in close connection with professional growth.

4.4.5   Summary of Cuc's change process

The data shows that Cuc held positive beliefs about the change process and integrated new teaching strategies into her classroom practice in order to enhance active learning in her ESP class. Cuc's beliefs about active learning were related to her seeing it as being student-centred. This was the result of the changes she made to her practice and her strong sense of self-efficacy. She believed herself to be an agent of change in dealing with the concerns such as time, student English language proficiency, and the focus on ESP pedagogical knowledge. Cuc's beliefs about active learning were consistent with the changes she made in her classroom practice, particularly using speaking activities such as grouping students, questioning, brainstorming, and other group tasks to improve student learning. She also believed that external support needed to be considered to sustain the change process. Therefore, Cuc valued the support she received through collaborative planning and the benefits of change, which promoted active learning in her ESP class.

4.5   Account of Hung's practice change

> *Change is like 'food for the soul' and provides impetus for me to learn and upgrade my professional knowledge in order to help students learn. (IT.Hung.S1.I)*

Hung's change process took place in Semester One during the 2011-2012 academic year. At the time of the study, Hung was a senior lecturer who had 30 years of teaching experience in biology and had taught ESP for more than four of those years. He had further training on curriculum development from several workshops and conferences overseas and used English while teaching an ESP paper. 50 second-year students in Hung's class pursuing the bachelor's degree in biology education studied two 50-minute

periods of ESP per week over a 15-week semester. This paper was designed to provide students with reading skills and to familiarise them with biological terms and the academic writing style of a scientific article (IT.Hung.S1.I). In addition, students needed to know how to summarise and synthesise information from their subject matter.

4.5.1 Beliefs about active learning and lecturer roles

This section looks at Hung's beliefs about active learning and the impact of his beliefs upon his teaching roles.

Beliefs about active learning

At the beginning of the study, Hung believed the key feature of active learning was associated with student attitudes towards this paper and their learning conditions. He stated,

> *Active learning first depends on student attitudes, followed by learning conditions. Some students with no laptops could not make use of the compact discs I provided. If students were not motivated, it would challenge a teacher to make them learn technical terms. (IT.Hung.S1.I)*

Hung believed that students' increased interest in learning of science concepts in English could influence his motivation to make changes to his current teaching practices. Students' interest was also likely to result from their greater responsibility for their learning process. Hung's words therefore suggest that student autonomy played a decisive part in the process of making active learning possible.

While participating in the change process, Hung's beliefs about the role of the students had grown stronger. He said,

> *Now, I only provide students with the very basic knowledge of the field and they have to find more information from books, internet search, and exchanges with friends or consultations with the lecturer via email at any time. (IT.Hung.S1.F)*

Hung also believed that active learning had fitted effectively into his teaching because of his student participation in activities planned as part of the research:

> *Active learning has fitted into my teaching now and would be sustained if more time was provided. Biological terms are the most complicated ones in this paper; therefore, through discussions, students are expected to learn more.(IT.Hung.S1.F)*

Beliefs about lecturer roles

In moving students beyond the traditional way of learning, at the beginning of the study, Hung noted that his role shifted between being a knowledge provider, guide, controller and a facilitator at different stages of his lessons:

> *First, I take the role of a knowledge provider. Second, [I am] a guide who shows students how to find references, and a controller throughout activities. When students take advanced papers, they will be more autonomous and I will act as a facilitator. (IT.Hung.S1.I)*

During the planning meeting towards the end of his participation in the study, Hung continued to emphasise the weaving of three roles in delivering his lesson:

> *As a facilitator, I use open-ended questions to lead a topic. My role is a knowledge provider in presenting new knowledge and a guide who helps students write good sentences or speak English. (PM1.Hung.S1)*

Hung went on to say about his role shifts that provided a platform for students to voice their ideas and play active roles as owners of new knowledge:

> *As a knowledge provider, I select what to teach, not lecture. As a facilitator, I get students to participate in activities and discussions. Of course, I use PowerPoint animations to help students learn by discovering. (IT.Hung.S1.F)*

In the next section, the beliefs that Hung had about making changes are examined.

4.5.2   Personal beliefs about change

Hung's beliefs about the change process were associated with the need for change, his sense of self-efficacy, and various forms of external support. Each of these aspects is explored in detail.

The need for change

At the beginning of his participation in the research, Hung believed that there was a need for change in curriculum matters. In the initial interview, he said, *"As this paper mainly provides students with vocabulary, I think it is unnecessary to make many changes. But after a couple of years, we will evaluate the lecture notes or syllabi"* (IT.Hung.S1.I). His comments seem to suggest that the content knowledge of biology played an important role in his teaching agenda and that, before any additional changes could be made to improve instruction, assessment of teaching materials was needed to meet the paper requirements within the science teaching contexts.

In particular, he highlighted the importance of pedagogical change in ESP, which could assist him in enhancing student learning in his class: *"The need to change teaching methods is important"* (IT.Hung.S1.I). He further explained that students enrolled in this paper because of their future job opportunities and search for higher qualifications overseas:

> *After graduation, to work in foreign companies such as cosmetic chemistry or product marketing, students have to present their knowledge of a specific matter and write a brief statement of purpose in English. (IT.Hung.S1.I)*

Hung therefore believed that student decisions to learn this paper were related to their vision of future selves. He further said,

> *In the cosmetics chemistry company, students are required to write a brief report on skin characteristics and care, which was only found in English articles. These issues will be of practical use for students. (IT.Hung.S1.I)*

Therefore, he believed that awareness of his students' future selves drove him to change his practices.

Sense of self-efficacy

When asked how he would sustain change if there was no support, Hung noted that change was not only important because it has been part of his teaching process but it also reflected his sense of efficacy as a Science lecturer:

> *I teach this paper because I really enjoy doing it. Change is like 'food for the soul' and provides impetus for me to learn and upgrade my professional knowledge. If the University does not provide any support, I will still make changes. (IT.Hung.S1.I).*

Hung's metaphor indicates a link between self-efficacy and the passion he had in being willing to do something different for students and also the responsibility he felt in teaching. In particular, he believed change stemmed from the personal rather than institutional level. In other words, he viewed himself as an agent of change.

Reflecting in the follow-up interview, Hung's belief about agency in relation to student learning was also consistent with his initial view. He said, *"Change is expected to perfect my desired goals – bringing students to a higher level. Moreover, seeing students enjoy working with their businesses is an intellectual capital for me"* (IT.Hung.S1.F). Likewise, in a planning meeting, Hung expressed his desire to make student learning more interesting: *"Student learning attitudes inspire me to teach differently"* (PM2.Hung.S1). Thus, his strong belief about the connection between changed practice and student learning may also reflect his internal feeling of confidence as a lecturer.

External support

Hung's beliefs about external support and his reflection on the value of support provided by the researcher emerged from the interview data. Initially, Hung believed that support from the university, and from colleagues was important. He stated:

> *First, change depends on teacher's competence because I am now the only teacher to design the paper. However, when my colleagues complete their studies overseas, they will support me. Second, databases provided by the Learning Resource Centre are also valuable (IT.Hung.S1.I).*

His words also suggest that change was primarily generated by the individual lecturer himself rather than at institutional or departmental levels.

In particular, Hung identified that change needed support from the researcher:

While language teachers are capable of pedagogical principles, subject teachers even trained overseas lack the English skills. If you teach grammar and pronunciation and I present subject knowledge and terminology, this collaboration will work well. (IT.Hung.S1.I)

At the end of his participation in the research, Hung valued the support that had engaged him in modifying changes in his class:

Collaborative work is very useful. I like to learn new methods to upgrade myself and student learning. If not, it is a waste of time. Through sharing ideas and experiences, after individual classes, with you, I learned several useful tips for my future actions and modifications. (IT. Hung.S1.F)

This suggests that Hung believed that the collaborative undertaking offered him an opportunity to learn from the researcher about the teaching methods and to recognise the importance of incorporating English skills into the lesson. However, Hung also indicated some concerns that might influence his change process, as noted in the following section.

4.5.3   Concerns about the change process

Hung's concerns about the curriculum change for ESP students included: time allotment, student English language proficiency levels, student attitudes towards learning ESP, and classroom resources. Each of these is elaborated below.

Time allotment

Hung thought the class time was insufficient for him to teach the ESP paper. He said, *"I found it difficult to address all of the content knowledge of biology to students in thirty periods. Thus, students only learn at a superficial level"* (IT.Hung.S1.I). At the follow-up interview, Hung also claimed that time also influenced his ability to evaluate the effects of changes: *"First, I think about time for my lesson preparation and student feedback. It is difficult to evaluate these issues"* (IT.Hung.S1.F).

Student English language proficiency

Hung pointed out a link between student English language proficiency and the class structure: *"As this paper is compulsory, there are three to four levels of English*

proficiency among students in class" (IT.Hung.S1.I). He also noted that this gap could challenge him to engage students in constructing new knowledge across biology areas.

Student attitudes towards learning ESP

A further issue emerged from Hung's interview response on active learning was associated with student attitudes towards learning of the ESP paper. He said, *"Some like this paper owing to its long-term benefits. Others might be not interested in learning this paper partly because it is an optional paper"* (IT.Hung.S1.I). It is possible that student attitudes towards learning ESP, both positive and negative, might influence his choice of teaching strategies in the change process. He said, *"I have different ways to teach a lesson, depending on student attitude and behaviour. I have to be flexible and regularly change my way of teaching throughout the semester"* (IT.Hung.S1.I).

Classroom resources

Hung mentioned that a lack of biology dictionaries for students to translate Latin terminology into English and Vietnamese was a major difficulty. He said,

> *Most anatomy or physiology terms are derived from Latin; however, no single bilingual dictionary has been available. In addition, words related to molecular biology that are not added in dictionaries can be problematic. (IT.Hung.S1.I)*

Hung further indicated that vocabulary was also a barrier as different names were used in different regions:

> *Dictionaries are necessary. However, students may be confused if the words are defined by authors in the North and those in the South. For example, snake-headed fish is called cá quả (North) or cá lóc (South). (IT.Hung.S1.I)*

However, Hung's concerns did not deter him from considering his change process, as examined below.

4.5.4 Change process

In this section, observation data demonstrated the changes in teaching strategies that Hung had utilised in his class.

Over the time of his participation in the study, speaking activities became a major part of Hung's teaching approaches, as shown in the following scenario.

> *Students were asked to watch a video clip, observe it, and tell how adenosine triphosphate is produced. Hung prompted student participation with some questions related to the previous lesson on 'The carbon cycle' presented the week before. (OB.Hung.S1.9.50-10am)*

The extract above shows the ways in which Hung involved students in his lesson through video clips. This strategy was to draw students' attention to using critical thinking in the lesson tasks. Not only did students have to relate pre-learned ideas to new knowledge, but this way of provoking thought appeared to motivate students to interact with the teacher.

Hung also recognised the importance of the reflective journal writing from students. As a result, he could make further changes to his classes or justify his instruction. The following extract presents his strategy.

> *Hung had students write a short passage regarding what they could learn from the lesson within ten minutes. Both Hung and the researcher moved around the class to check student word choice and language use (OB.Hung.S1.10-10.30am)*

Hung's further development of interactive decision-making in his practice was observed later in Semester 1, 2011. As part of implementing active learning, Hung used a questioning technique, matching, and reflective writing. These activities aimed to provide students with more opportunities to take more active roles in their learning (PM2.Hung.S1). Observation notes below illustrated how Hung employed the changes.

> *Students were asked to tell what they knew about the cell (definition, functions and history) before watching slides of 'Parts of the cell'. In pairs, students were asked to observe the diagram, answer true-false questions, read the passage, and translate these segments into Vietnamese. Pronunciation of new words was included. (OB.Hung.S1.9.50-10.20am)*

Hung believed that the use of questioning accompanying video clips helped students to learn. It appears that Hung integrated all English language skills into the lesson to

enhance students' speaking opportunities and to familiarise them with critical thinking. He went on to explain that when students worked in pairs, they tended to feel more relaxed and to interact with other students (PM3.Hung.S1).

Hung further engaged students in a matching exercise on two cell categories (prokaryotic and eukaryotic). Three students were required to write answers that Hung checked and then to explain cell parts illustrated by a picture (OB.Hung.S1.10.48-11.10am). The episode suggests that Hung was aware of the usefulness of the role of the students as active learners while positioning himself as a facilitator.

The observed changes in Hung's strategies indicated that he considered students to be the centre of the learning process. In particular, Hung indicated he would continue to use journal writing as a lesson closure. This task, although brief, helped students to recap the lesson focus, think about what they learned, and improve writing skills. It also allowed Hung to gain insights into the effects of his new actions on student learning (PM4.Hung.S1).

The changes Hung had made motivated students to learn, so he wanted to continue in his future teaching practice.

Hung expressed his positive views on the change process in relation to active learning:

> *It is a good opportunity for me not only to learn more about the methods to teach this paper but also to gain other perspectives about teaching. After sharing experiences with you, I learned to make the syllabus available to students from the very beginning of the class because I can save time for other class activities; and the syllabus offers students a whole picture of what is going on within the whole year. (IT.Hung.S1.F)*

Throughout the interactions, Hung learned more about other aspects of teaching practice, thereby nurturing his personal and professional growth. The process of action and reflection enhanced Hung's professionalism and allowed him to learn and utilise new pedagogical knowledge in a wider context of ESP teaching. The strategies he used seem to have helped students to become more active learners rather than merely receiving knowledge.

4.5.5 Summary of Hung's change process

Hung's beliefs about active learning and his heightened awareness of the need to change his practice enabled him to implement more active learning strategies in the ESP class. In particular, He believed that active learning was needed in his teaching strategies. However, his concerns about the change process and the need for receiving support from English language teacher did not stop him considering how to involve students in active learning. Hung believed that active learning was related to student autonomy and to the inclusion of interaction between him and his students in constructing new knowledge. This belief appeared to increase his understanding of the practice context, thereby leading to changes in his views about improving that practice. These changes influenced his decision-making process and his ability to evaluate the effects of changes.

Various forms of external support and his self-efficacy were also needed to engage him in modifying changes in practices during the change process. In addition, Hung's perceptions of student preferences to enrol in his paper were likely to influence his roles and skills development in presenting knowledge to students. Furthermore, Hung believed in his students' capacity to learn new knowledge in several ways. He had not previously considered students in his class as active owners of knowledge in the learning process. As a committed lecturer and as a facilitator of active learning, Hung seemed to value the collaboration with and support from the researcher while planning and implementing changes. He viewed himself as an agent of change through implementing more of these active learning strategies in his practice that his science class was taught through English. This belief may have also been a contributing factor in his willingness to change.

4.6 Account of Mai's practice change

> *I like to apply new methods in practice. I also have a passion and conviction that my students will learn something new for their subject and future jobs. I like my students to make their own decisions. (IT.Mai.S1.I)*

Mai participated in the research in Semester One during the 2011-2012 academic year. At the time of the study, Mai was a senior lecturer who had 14 years of teaching experience in environmental sciences. However, she had taught ESP for just a little over one year.

In Mai's class of 24 second-year students, she taught three 50-minute periods of ESP over a 15-week semester. In this paper, students were expected to improve some skills such as speaking, pronunciation of correct English, and understanding of technical terms for in-depth knowledge of their discipline. In addition to theory, reading, and translation, students were also required to undertake self-study and search for further information through group study, discussions, case studies, and home assignments (IT.Mai.S1.I).

4.6.1   Beliefs about active learning and lecturer roles

In this section, Mai's beliefs about active learning and her roles as a lecturer are examined.

Beliefs about active learning

At the beginning of her participation in the study, Mai's beliefs about active learning were associated with students being the centre of the learning process. These beliefs may be related to her experience during her time working with foreign experts. She stated,

> *I learned this concept through the tenure-track examination to become a full-time lecturer and through co-teaching as well as working with an Australian expert in environmental projects. I think active learning engages students in group discussions and problem solving activities. (IT.Mai.S1.I)*

This comment suggests that students played a central role in taking responsibility for their own learning rather than receiving knowledge from her teaching.

While participating in the change process, Mai realised that active learning fitted very well into her teaching philosophy. Her views of active learning were consistent with what she stated in the initial interview in reference to student participation. She said,

> *Compared to my old way of teaching in previous semesters, I think active learning is more effective. Students participate more in the lesson and respond to questions rather than waiting to be called. (IT.Mai.S1.F)*

This quote suggests that Mai believed active learning had a positive effect on student learning outcomes.

Mai later indicated the activities that she used to engage students in her teaching practice: *"Before introducing a new lesson, I have my students observe a figure or a picture and then ask them to tell what the picture is about or what roles nitrogen plays"* (IT.Mai.S1.F). She believed this brainstorming activity would provoke students to come up with ideas or to think of what they were going to study.

Beliefs about lecturer roles

In moving students beyond the translation approach, Mai initially noted the shift of focus in her roles between being a facilitator, a guide, and a knowledge provider at different stages of her lessons:

> *I am a facilitator while students present their task. I am a guide when they need additional information in discussions, and then a knowledge provider in explaining to them science concepts or introducing a new lesson (IT.Mai.S1.I).*

In the planning meeting towards the end of the semester of her participation in the study, Mai reaffirmed the importance of three interwoven roles that she had played in promoting student learning. In addition, she now believed that a facilitative role would allow students more opportunities to practise speaking activities: *"There is an overlap or flexibility in my roles. Perhaps the dominant role I take is a facilitator who gives hints to students while they present their group ideas to the class"* (PM5.Mai.S1). This appears to be a more supportive role than was mentioned in the initial interview. Mai now offered students more opportunities to take responsibility for their own learning of new knowledge. It may be that in reflections on her two interwoven roles, Mai focused upon the active role of the students instead of seeing them as passive recipients of knowledge. She also saw that the lecturer-student relationships were established to contribute to more active learning of students in her class over time.

The next section looks at Mai's beliefs about the change process.

4.6.2   Personal beliefs about change

Mai's beliefs about change in her classroom practice are associated with the need for change, her sense of self-efficacy, and various forms of external support.

The need for change

At the beginning of the study, Mai believed that it was important for her to learn pedagogical knowledge of English to facilitate student learning. In the initial interview, she said,

> *Lecturers have to update their knowledge of English for Environmental Science (or ESP) constantly. This lays the foundations for other environment subjects; hence, students need to know what they want to learn and what is presented to them. (IT.Mai.S1.I)*

This comment suggests that the need for change not only emanated from the teacher herself but also arose from an emphasis on the student awareness of the importance of the ESP paper in their discipline.

In particular, Mai indicated that vocabulary was the main component that students wanted to learn. She said, *"Students expect to learn vocabulary and subject-related knowledge"* (IT.Mai.S1.I). She added that students requested her to teach more hours of English because they thought *"Good teaching occurs when the teacher allows students time to read the passage, pronounce words correctly, do many exercises and discuss in groups"* (IT.Mai.S1.I). Such student interest and responsibility for learning in this ESP paper perhaps helped encourage Mai to consider the possibility of her role change in making decisions about her own actions in specific classroom practice.

Sense of self-efficacy

Mai expressed her sense of self-efficacy in the initial interview when she was asked how she would manage if there was no support from colleagues. She confirmed that, *"I will change my ways of teaching without any support because I am keen on new ways of teaching in relation to active learning and material development"* (IT.Mai.S1.I). It

appears that Mai held strong beliefs on making changes and had a strong desire to be open to change. Such beliefs were related to her motivation for change. She said,

> *I like to apply new methods in practice. I have passion and conviction that students will learn something new for their subject and future jobs. I like my students to make their own decisions. (IT.Mai.S1.I)*

These comments suggest that Mai perceived a strong sense of self-efficacy. Due to her passion, she was ready to change her teaching strategies and she had confidence to involve students in taking responsibility for their own learning and future orientations. Therefore, Mai believed change was related to the personal rather than institutional level. She viewed herself as an agent of change. As a result of her belief about the benefits of change to active learning, her sense of self-efficacy was likely to grow stronger over time. She said, *"I expect to make more changes in order to reach the university goal"* (IT.Mai.S1.F). This may also indicate that Mai considered change as part of her responsibility to align with university directives and to promote student learning.

Likewise, in a planning meeting, Mai expressed a passion for change in her practice to enhance active learning. She said, *"Passion is the first prerequisite for me to make changes whenever I can, followed by the professional standards I set for myself. I am interested in learning about innovative teaching strategies"* (PM1.Mai.S1). Thus, the beliefs Mai held in the change process were likely to link both personal and professional growth. These connections seem to reflect an internal feeling of confidence in how Mai saw herself as a lecturer.

External support

Mai's beliefs about support and her reflection on its value emerged from the interview data. Initially, Mai felt that external support for change was needed. She said, *"No official curriculum guide is available now. I had to find information on the internet. Books are also needed"* (IT.Mai.S1.I). She further reported that support from colleagues was important: *"I need to discuss, share experiences and expertise with my colleagues"* (IT.Mai.S1.I).

Mai further pointed out the need for institutional support that contributes to her decision-making process. She said, "*As with classroom arrangements, teaching aids, learning resources and budget for references, we [lecturers] have to depend on the university*" (IT.Mai.S1.F).

In the follow-up interview at the end of her participation in the study, Mai recognised the importance of the support by the researcher. She said, *"I am proficient in subject knowledge but have insufficient English skills to integrate the knowledge. I need teaching experiences and strategies from a language teacher like you"* (IT.Mai.S1.F). Her words seem to suggest that the collaboration with the researcher as a language teacher would allow her to learn how to make pedagogical knowledge accessible to students. However, Mai also indicated the concerns that might influence the change process, as discussed next.

4.6.3   Concerns about the change process

Mai's concerns about the change process included time allotment and student English language proficiency levels.

Time allotment

Mai thought class time was insufficient for her to provide students with content knowledge of ESP. She noted: *"I think 45 periods over 15 weeks is not enough time for me to complete all teaching content or activities"* (IT.Mai.S1.I). In the follow-up interview, she confirmed that time was a major difficulty in preparing her lesson plans and class activities to engage students in active learning:

> *This is my first syllabus; therefore, applying new ways of teaching is challenging. Particularly, I have to spend too much time preparing different tasks, exercises, quizzes, pictures or animated slides to make the class interesting. (IT.Mai.S1.F)*

Student English language proficiency

The second issue noted by Mai was the range of levels of English that students had in the ESP class. At the start of the study, Mai said, *"If I use more English and speak fast, students cannot follow me or learn what I present to them"* (IT.Mai.S1.I). In the follow-

up interview at the end of the study, Mai still asserted that student English language proficiency levels could be a challenge that prevented her from integrating students' translation skills into the content knowledge. She said, "*When students were given exercises, not all students could speak in English. I must use Vietnamese to explain the lesson or interpret the concepts*" (IT.Mai.S1.F).

Discussion on how Mai experienced the change process follows.

4.6.4   Change process

In this section, two examples of in-class observation are provided as evidence of the changes that Mai implemented in her class. In particular, speaking activities became a major part of Mai's teaching approaches, as observed below.

> *The five-student group presenting 'Wetland for wastewater treatment' was seated at the front right-hand corner of the class while the rest were arranged in modular seating. Time for this task and questions was 20 minutes. Mai stood on the left corner at the back of the class observing how each student presented and checking on student progress. (OB.Mai.S1.8.40-8.50am)*

In this extract, seating arrangements would allow students to interact with or to question the teacher and other students. Such interactions provided students with equal opportunities to share ideas and understandings of the lessons in English with one another after they had been told to read and translate the texts (PM2.Mai.S1).

Mai realised that the use of questioning could provoke student thinking and allow them to take more responsibility for their learning. Students were encouraged to question the panel group regarding a nitrification process (OB.Mai.S1.8:40-8:50a.m). She indicated that questions would bring students together and relate new information to prior knowledge. She believed students, if placed in a relaxed and dynamic environment, could find their own ways to learn although her lessons might be behind the schedule (PM3.Mai.S1).

Although students could become more active, Mai still viewed translation strategies and pronunciation practice as crucial to evaluate or to check on student progress, as seen in the following scenario.

> *Students were randomly asked to translate others' answers. The researcher assisted Mai in teaching pronunciation. In pairs, students discussed two presentations for ten minutes. Mai and the researcher moved around the class to check how students did this task. Two students reported to the class and received feedback on their writing. (OB. Mai.S1.10.10-11.10am)*

These observed changes suggest that Mai had engaged students in speaking activities through group presentations, questioning, translation, pronunciation, and pair work. Such active learning strategies helped students to play more active roles, to feel more confident, and to develop their own ways of learning rather than being under the control of the teacher herself. Mai also stressed the importance of speaking activities: *"Now, I realise that students pay more attention to my teaching. They present more questions, though simple, to others than before"* (PM4.Mai.S1).

Another example that provides evidence of the development of interactive decision-making in Mai's classroom was observed later in Semester One of the 2011-2012 academic year. As part of implementing the change process, Mai used cue cards and reflective journal entries to introduce new activities. Students were asked to sit in pairs and play the cue cards Mai prepared. Cards A consist of questions and Cards B provide answers to the questions. Students swapped their cards. The time given for this task was 10 minutes (OB.Mai.S1.8.40-8.50am). These strategies aimed to engage students in an active learning environment. The use of cue cards seemed to benefit students in several ways. Mai believed that students could speak more English, practise pronunciation and listening skills, and feel relaxed during the two learning periods (PM5.Mai.S1).

In addition, Mai's beliefs about active learning could be improved by receiving feedback from student reflective journals. In a ten-minute follow-up, Mai had students write a short paragraph on what they learned from the lesson. The researcher assisted Mai in checking if students needed any additional help for language use. Mai commented on student samples (OB.Mai.S1.10.46-11.10am). This strategy engaged students in learning how to learn writing skills and language use. Mai said she would

continue to use reflective journal entries to stimulate her students to learn. This strategy helped her understand how students learned, reflect on her practice, and more importantly redefine her roles in order to improve the lessons (PM5.Mai.S1).

After participating in the change process, Mai valued the changes she had made during her practice. In particular, she noted the changes in practice increased not only her personal learning in relation to professional growth but also in monitoring student learning.

> *I learned a lot from you, namely, how to teach this paper. For example, I learned how to monitor the class, check student work during group presentations as well as to make seating arrangements. I try to apply them in a flexible way (IT.Mai.S1.F).*

Mai believed that the changes she had made in her practice were a positive learning experience. It appeared to have a link between her pedagogical knowledge and the dynamic use of collaborative actions.

When asked how students responded to her new teaching strategies, Mai said,

> *Students contributed more ideas through group exercises and presentations, and requested more activities. They also tried to speak English, although not much, whereas they did not speak in English before. (IT.Mai.S1.F)*

Mai not only indicated how students learned through speaking activities in English but also stated that her choice of teaching strategies and endeavour were worthwhile since these could foster student engagement.

Reflecting on participating in the study and its potential effect in terms of a dynamic network, Mai said, *"Collaborative efforts are positive and effective. I will collaborate with you or other English teachers in developing materials to expand experiences, mainly the practice skills"* (IT.Mai.S1.F). She added that she would continue to learn how to improve her pedagogical knowledge to promote student learning. Her reflection on the change process therefore suggests a link between her sense of agency and a dynamic process of learning and growth.

4.6.5 Summary of Mai's change process

Mai shows that she held strong beliefs about the need for change and implemented new strategies throughout the research process. Although Mai was the least experienced lecturer of the participants in the present study in teaching this ESP paper, she appeared to have had a strong sense of self-efficacy and a passion for teaching. Mai believed she was an agent of change and was willing to be open to changes in her practice.

Her beliefs about the change process were supported by not only the changes observed in class but also the topics she addressed in the planning meetings over time. Mai considered the external support driven by the researcher was important for her to change her teaching strategies and to learn new ways of teaching English as a language teacher. This teacher learning could lead her to sustain the change process. Despite the concerns that were identified such as time constraints, student English language proficiency levels, Mai's teaching strategies, designed to engage students in active learning also reflected that she was a dedicated lecturer. In addition, her reflection on the change process revealed increased personal learning and professional growth.

4.7   Account of Tin's practice change

> *I always bear in mind how I can do better to arouse student interest in learning English for this paper. The only thing I do is learn and apply new teaching methods into my lectures. (IT.Tin.S1.F)*

Tin participated in the research in Semester One during the 2011-2012 academic year. At the time of the study, Tin was a senior lecturer who had a PhD degree in aquaculture from the United Kingdom. Tin had 21 years of teaching experience and had taught English for Specific Purposes (ESP) (or English for Aquaculture and Marine Biology) for ten of those years. Tin also held a senior position in his college during the study. In Tin's class, 50 second-year students studied two 50-minute periods of ESP per week over a 15-week semester. The students were expected to be able to read and comprehend study materials and articles in English needed throughout their thesis writing. This paper also aimed to provide students with pronunciation practice,

vocabulary learning, and comprehension of aquaculture texts. In particular, students were taught how to learn on their own, translate texts and work in groups (IT.Tin.S1.I).

4.7.1 Beliefs about active learning and lecturer roles

The following section explores Tin's beliefs about active learning and lecturer roles.

Beliefs about active learning

Initially, Tin believed that active learning was related to the role of the students. He stated, *"I think active learning is student-centred. I want to make it happen in order to help students to be active and independent in their studies"* (IT.Tin.S1). Yet, he expressed his feeling of anxiety about his lack of pedagogical knowledge. He noted,

> *I am not an English teacher. Therefore, to engage them in active learning is a challenge because I cannot integrate English skills into the content knowledge of the subject (IT.Tin.S1)*

However, at the end of his participation in the study, Tin reported that active learning had fitted into his teaching. He stated:

> *In principle, active learning enables students to take responsibility for their learning instead of being dependent too much upon my instruction or control. However, active learning has not been implemented as expected either in this paper or other disciplines. (IT.Tin.S1.F)*

Beliefs about lecturer roles

Tin reported an anomaly between his roles as a controller and a facilitator in his lessons. At the start of the study, he said:

> *I am a controller because students are still very passive. For example, when they discuss in groups or make questions, only one or two in one group can speak English and others cannot speak a single word of English. Therefore, I have to take a facilitative role in assisting them in discussion. (IT.Tin.S1.I)*

Tin's reference to two roles (controller and facilitator) suggests that although he wanted to implement speaking activities, these two roles were in conflict. In the follow-up interview, however, Tin remarked, *"Formerly, I was a knowledge provider; but now I*

act as a facilitator in different situations. Thus, I can help students to know what (and how) to do it" (IT.Tin.S1.F).

Tin further explained that, "*I had students make sentences, discuss, and share answers with others. Then I came up with many optional answers for the task*" (IT.Tin.S1.F). These comments revealed that speaking activities helped to involve students more in the learning process than was previously done in traditional classes.

Discussion now turns to Tin's beliefs about the change process.

4.7.2 Personal beliefs about change

Tin's beliefs about the change process were associated with the need for change, his sense of self-efficacy, and various forms of external support.

The need for change

At the start of his participation in the study, Tin believed that the need to develop teaching materials for ESP students was crucial. In the initial interview, he said:

> *I think change is very important. I would like to see my students know how to use English, namely to understand what I present to them and to communicate with foreigners in English at its most basic level of communication. (IT.Tin.S1.I)*

In his statements, it appears that comprehension of study materials and speaking activities were prioritised in his teaching and that these skills served as the practical knowledge in the student lives in relation to job opportunities.

Tin reported that his students had positive learning attitudes, particularly towards learning vocabulary:

> *Students want to learn as many technical terms as possible. For example, 'reproduction', means 'the process of producing something again' in the subject area, but it means 'the process of producing offspring, babies, plants or animals' in fish reproduction of aquaculture. (IT.Tin.S1.I)*

Apparent in the quote is the emphasis of the importance of vocabulary in student learning of new content knowledge. This emphasis can be found in the planning meeting when Tin noted: *"Students need to learn the subject content knowledge in relation to other aspects of their discipline"* (PM1.Tin.S1).

Sense of self-efficacy

When asked how he would continue changes to his teaching strategies if there was no form of support, Tin responded: "*I am confident about my professional experience and knowledge in teaching this ESP paper as a teacher*" (IT.Tin.S1.I). This statement suggests a link between Tin's sense of self-efficacy and the content knowledge, which allows students in his class better opportunities to learn. Reflecting in the follow-up interview, Tin viewed himself as an agent of change (IT.Tin.S1.F).

He went on to explain his passion for making changes in his practice:

> *I want to implement changes to help students learn best. I always bear in mind that I can do better to arouse their interest in learning English for this subject. The only thing I will do is to learn and apply new teaching methods into my lectures. (IT.Tin.S1.F)*

His comments suggest that he was a committed and progressive lecturer who believed that change is a process of personal learning. In addition, Tin believed that change not only played an indispensable part in his career but it also reflected the link between his passion for professional growth and his willingness to change his practice. Tin's beliefs about the change process and the importance of pedagogical content knowledge seem to shape his decisions on what constitutes effective teaching. Tin's sense of self-efficacy also appears to derive from his endeavours to facilitate student learning rather than knowledge being imposed upon them by institutional policies.

External support

Tin considered the role of the English language teacher as crucial in relation to curriculum change. In particular, he believed that ESP pedagogical knowledge was needed to develop lesson plans:

I need support from English language teachers because I am not trained as a language teacher for methods. As the university encourages students to learn English for their discipline, it is important to help them to learn English in the best way. (IT.Tin.S1.I)

Tin's comments seem to indicate that the support he received from the English language teacher allowed him to feel more confident in teaching practice and to respond to the call for effective teaching. By the end of the research, Tin also confirmed the importance of having this type of support to sustain on-going change in his teaching practice. He noted, *"I need to know more about English teaching methods, to learn and to share experiences, and strategies with you with regard to how to teach reading, listening, and translation"* (IT.Tin.S1.F). It may indicate that his beliefs about the support for change related to a process of learning how to integrate English skills into his lectures.

Support for change provided by English language teacher, particularly pedagogical knowledge in English teaching also appeared to nurture Tin's teaching practice and professional growth. It can be argued that Tin's words indicate that he also recognised how the researcher supported change through English language teaching skills. This seemed to play a role in communicating relevant content knowledge more effectively to students in his class. However, Tin also expressed concerns about making change to his teaching practices. This is presented in the next section.

4.7.3   Concerns about the change process

Tin identified the factors that influenced his beliefs about change were time allotment, student English language proficiency levels, and their attitudes towards learning ESP.

Time allotment

Tin identified lack of time as a concern in relation to interactive tasks practised by students. He said, *"Two periods per week is a limited time to cover all topics, let alone additional exercises. Students need more time to translate a text, and compare and contrast others' answers"* (IT.Tin.S1.I). He went on to comment that three class periods per week would be sufficient. This suggests that change might influence how students

learn if 50 per cent more time was allocated for them to learn English for marine biology.

Student English language proficiency

Tin was also concerned about student English language proficiency in relation to the existing teaching material. He said, "*Nowadays, student level of English is very low. Most of the students fail to recognise the importance of English and are also timid and not confident in learning English for their paper*" (IT.Tin.S1.I). It seems that students' low level of English language proficiency was somehow related to their face-saving status, and that students had a negative attitude towards learning the ESP paper.

Student attitudes towards learning ESP

Tin initially indicated that student attitudes towards learning the ESP paper might influence the change process. He said, "*Perhaps my biggest concern is the student awareness of the importance of English. Therefore, at the first class, I stressed the importance of this paper, particularly the use of English*" (IT.Tin.S1.I). In explaining this possible affect, Tin said, "*Students are neither good at English nor did they expect to learn much from this paper*" (IT.Tin.S1.I). Thus, Tin linked students' low levels of English language proficiency in his class to their neglect of learning the ESP paper which could be a challenge for him in planning interactive tasks.

The ways in which Tin implemented his new teaching strategies in line with his beliefs about active learning are now explored.

4.7.4   Change process

In explaining the changes Tin had made during the implementation process, he contended that the precise meaning of the technical vocabulary of marine biology in English is necessary. Therefore, translation of these words into the mother tongue was the most important part of the ESP paper for Tin (PM2.Tin.S1). Reading comprehension and translation represented Tin's teaching approaches, as illustrated in the following extracts.

Tin posed questions to students 'How many types of marine organism are there? and 'What factors affect the distribution of marine organism? Students had to answer the questions in their own words in English. Tin had students read aloud text chunks and translate them into Vietnamese. Tin and the researcher provided feedback on student work. Pronunciation practice was included. (OB.Tin.S1.15.20-16.10pm)

The extract above indicates that Tin not only used translation strategies but he also made use of questioning to get students to think about what they were going to learn.

Further role changes were shown by Tin when he presented a new lesson during the second observation. Brainstorming and student reflective journal strategies discussed with the researcher in the planning meeting were then observed as the changes that Tin implemented to involve students in the lesson. As shown in the observation extracts below, the two identified strategies demonstrated more student involvement and greater interactions between them and the lecturer.

Tin had students brainstorm the lesson 'Abiotic features of marine biology.' Students had five minutes to do this task. Tin provided feedback to students on the task and indicated the link to the new lesson. Students in small groups of four discussed questions regarding chemical factors that influence the quality of water. (OB.Tin.S1.15.20-15.35pm)

The notes above indicate the reduced lecturer talking time as Tin repositioned himself in his new role. He encouraged students to spend more time exchanging ideas in English so that he could elicit different responses from students to get the lesson across. In a planning meeting, Tin also argued that using brainstorming helped students to think more about the lesson. Moreover, group discussion might put students at ease (PM3.Tin.S1). Student reflective writing represented another active learning strategy Tin had developed as time progressed. Students were asked to write reflective journal entries to summarise the key ideas of the lesson (OB.Tin.S1.16.45-17.00pm).

The changes observed above illustrate the strategies that Tin developed during the change process. In addition to translation strategies and pair-work, brainstorming and reflective writing approaches reflected the predominant skills Tin added to increase student engagement and interaction. Tin recognised the benefits of using brainstorming

and reflective writing strategies, which encouraged timid and shy students to speak or to learn better. In addition, he indicated that he had to continue to invest time in thinking how to help students to learn (PM4.Tin.S1).

In experiencing the process of action and reflection, Tin valued the collaborative actions that have led to changes in his teaching practice. This increased understanding about his teaching and learning process was confirmed in the follow-up interview. He said:

> *This research is very useful because it helps me understand the practice context, identify strengths and weaknesses of teaching aspects, reflect on my experiences and student performance. The research is practically significant because it helps teachers upgrade themselves for enhanced quality of teaching and learning English for Specific Purposes (IT.Tin.S1.F).*

The quotes indicate that Tin appreciated the change process in several ways. Firstly, he was aware that changes were integral to his teaching practice, which led him to reflect on and tailor his current practice. Secondly, Tin viewed himself as an agent of change because he believed shared learning experiences were worthwhile. Thirdly, his belief about active learning seems to raise his awareness of the need for change to improve his practice, and in turn, enhance his personal learning and professional growth. Fourthly, his understanding of the effectiveness of changes in practice appears to have a link between his self-efficacy and passion for change.

Further reflecting on the potential effect of sustaining the change process, Tin noted:

> *I keep positive changes going by providing students with more opportunities to practice so that they can learn on their own. I will spend more time focusing on applying English skills into my lessons. (IT.Tin.S1.F)*

It appears that Tin's willingness to be open to change in his practice or to experiment with new teaching approaches reinforced his beliefs about giving students greater opportunities to investigate their own learning. His reflection on the change process therefore suggests a link between his personal agency and his desire to make changes that motivate student learning. Tin was progressing with agency in the ways that he would dedicate more time to the pedagogical knowledge and initiatives to influence student learning. Tin went on to express his self-efficacy beliefs in relation to the

change process: *"I think we can collaborate with each other"* (IT.Tin.S1.F). His words suggest that change took place as a process of learning from, participating, and sharing with others. He valued the collaboration with the researcher as a language teacher.

4.7.5   Summary of Tin's change process

Of the eight cases, Tin was one of the three senior lecturers who had experienced the longest time teaching ESP. His beliefs about active learning were related to student feeling of confidence. This insight shows his awareness of the need to encourage students in actively participate in their learning, particularly speaking activities. Tin's sense of self-efficacy can be seen when he conceptualised change as a process of personal learning. He believed himself to be an agent of change and was ready to change in his teaching approaches. Although the changes Tin had made in his practice might seem to some extent modest, his beliefs about the change process were considered essential and firmly established from the first day of his participation in the study. In translating the English skills into his lectures, Tin also believed that the support he received from the English language teachers was important.

As a progressive and dedicated lecturer, Tin showed his willingness to be open to change although time constraints and student English language proficiency levels might challenge him when making decisions about changes to his practice. His beliefs about how students learn shifted his teaching roles from a lecturer to facilitator of student learning, thereby allowing students to take active roles in learning the ESP class.

4.8   Account of Lan's practice change

> *Although preparing for in-class activities is time-consuming, I feel happy to see my students participating in all activities in an exciting learning atmosphere, particularly through group tasks. (IT.Lan.S2.F)*

Lan participated in the research in Semester Two during the 2011-2012 academic year. At the time of the study, as a senior lecturer, Lan entered her 17th year of teaching biology. She had taught an ESP paper (or *English for Biology II*) for three of those years. She had a PhD degree in biology from overseas and taught this paper in English. Over a 15-week semester, Lan taught two 50-minute periods of *English for Biology II* to

45 second-year students in biology education. Only students who have completed the *English for Biology I* paper can enrol for *English for Biology II*. This paper was designed to provide students with reading and translation skills so that they can search for literature reviews of articles, which is useful for their graduation theses or for master's study (IT.Lan.S2.I).

4.8.1 Beliefs about active learning and lecturer roles

In the section that follows, Lan's beliefs about active learning and her role as a lecturer are examined in detail.

Beliefs about active learning

Lan believed active learning was associated with the role of students and their content knowledge. She stated,

> *I think active learning is what students learn by themselves and the teacher is a facilitator. I also think of how to get students to understand the lesson and remember vocabulary as much as possible. Students are thus required to work hard. (IT.Lan.S2.I)*

Lan's reference to the role of students as taking responsibility for their own learning indicated awareness of her role shift and of the importance of vocabulary in her teaching agenda.

Lan further indicated her belief about active learning was related to the interaction she had with her students. She said, "*Now, the teacher is not a knowledge provider because students have to search for knowledge and interact with the teacher. The teacher and students have to work together and build on new knowledge*" (IT.Lan.S1.F). These comments suggest that active learning allowed students to become autonomous learners, and that it was related to the collaboration between Lan and her students in classroom practice.

Beliefs about lecturer roles

In engaging students in an active learning environment, Lan noted that she was more of a facilitator during her teaching practice: *"I think of the role of a facilitator as the key to*

my teaching" (IT.Lan.S2.I). This role was also confirmed in the follow-up interview. Lan further indicated that: *"I now act as a facilitator. I am not a sort of a provider of knowledge to my students as I get them to think learning is their work and tell them to do things on their own"* (IT.Lan.S2.F). Lan thought a facilitative role would allow students to become more autonomous and independent in choosing what they want to learn or investigating what knowledge is worthwhile for their subject matter.

In the planning meeting at the end of her participation in the study, Lan elaborated on her role as a facilitator in presenting the knowledge to students:

> *I use matching exercises to help students understand the lesson. I have them scan a paragraph, identify main ideas, define a word, or encourage them to do group activities. If they cannot answer questions, I will give them some clues. (PM1.Lan.S2)*

The quote above indicates that Lan provided students with a variety of critical reading skills in order to involve students in the learning process.

In the following section, Lan's beliefs about the change process are examined.

4.8.2   Personal beliefs about change

Lan's beliefs about change in her classroom practice were associated with her awareness of the need for change, her sense of self-efficacy, and various forms of external support.

The need for change

At the start of the study, during the initial interview, Lan spoke of the importance of the need for change in curriculum and instruction in relation to how to communicate the content knowledge she was teaching to her students. She said, *"I think change is important because I want students to learn and to understand what I present to them. It is also important to engage them with the lesson without boredom"* (IT.Lan.S2.I). From a methodological perspective, Lan felt responsible for creating a more dynamic learning environment for her students.

Lan believed that reading and translation were two major components that her students wanted to learn from the ESP paper:

> *Students like to study this paper because they can learn reading, translation, and vocabulary. It is necessary for them to access articles in English and read abstracts or search for references needed for their writing theses or master's study. (IT.Lan.S2.I)*

These statements seem to reflect Lan's beliefs about student preferences to learn the content knowledge useful for their subject and graduate studies, which may indicate that she viewed herself as a resource lecturer.

During the initial interview, Lan was asked what students see as a good teacher. She responded, *"Students expect their teacher to be knowledgeable about the subject and to teach the lessons well"* (IT.Lan.S2.I). Lan's reference to students' views of what makes a good teacher was likely to influence her own role in presenting knowledge to them.

Sense of self-efficacy

At the start of her participation in the study, Lan expressed her sense of self-efficacy in relation to the potential for personal and professional shame. Such a feeling perhaps came from Lan's expectations for her student learning. She said, *"I want my students to get what I present to them. It would be my shame if my students did not understand my lesson"* (IT.Lan.S2.I). It is possible that Lan's professional shame stemmed from the interaction with her students, and this challenged her professional identity.

Reflecting in a planning meeting, Lan was asked how she would manage if there was no support. She responded that she would continue to apply new ways of teaching to help students learn because she had borne that idea in mind since she first entered the teaching career (PM2.Lan.S2). This insight suggests that her desire for change and self-efficacy were interconnected and portrayed the commitment she had to teaching. As she participated in the change process, she became more aware of being an agent of change. Lan's strong belief about changes in practice seems to reflect her willingness to change and that may have allowed students to become more active in the learning process.

She went on to elaborate on her plan for making continual changes, noting that: *"I will conduct a survey of student feedback on my new teaching ways to improve my instruction. I always change my way to teach students"* (IT.Lan.S2.F). In this narrative, Lan's sense of agency in relation to student learning was likely to be proportionate to her desire to foster effective teaching.

Lan's concern about her own English proficiency also appeared to reflect her sense of self-efficacy in relation to translating ESP pedagogical knowledge to students. She said, *"I have to improve my English to teach this paper and update the subject knowledge frequently. If not, I will not be able to use English to present knowledge to students"* (IT.Lan.S2.I). Her need to learn how to make use of English suggests that she was aware of the link between her responsibility as a Science lecturer and the endeavour to promote active learning in her ESP class.

External support

Lan believed that change needed support from the university and from the department. She said:

> *I think change should come from institutional support regarding data projectors and other technological devices. There is a need to exchange with colleagues for updated information, new ways of teaching, or internet access for databases from the Learning Resource Centre. (IT.Lan.S2.I)*

It appears that Lan believed change depends largely on institutional policies and availability of resources. This change could be seen as a process of learning and sharing experiences and professional knowledge with others.

Lan also identified that change needed support, mainly from the researcher as a language teacher:

> *I think you will be supportive to me because I am neither an English teacher nor capable of speaking in English. I like to learn new teaching methods so that I will feel more confident and my lessons will be more interesting. (IT.Lan.S2.I)*

The need to learn from the researcher for pedagogical knowledge seems to play an important role in encouraging Lan in making more changes in relation to her professional growth. She believed new teaching strategies gave an impetus to her confidence in making decisions, and that these changes could provide an active learning environment for students in her class. Lan went on to indicate her awareness of the importance of the support for change in her practice. She said, *"Thanks to your support, change is less complicated and time-consuming"* (IT.Lan.S2.I).

At the end of her participation in the study, during the follow-up interview Lan acknowledged the benefits of the collaboration that had improved her practices:

> *I learned a lot from employing different steps of a lesson to presenting lesson content. I feel more confident now in class management and group discussion. Without your support, I cannot do it by myself. (IT.Lan.S2.F)*

Lan's beliefs about how she experienced teaching strategies facilitated by the researcher sharpened her confidence in practice and enhanced her professional growth. However, Lan also identified concerns that might influence her change pathways, as explored in the next section.

4.8.3   Concerns about the change process

Lan's concerns about the change process were student English language proficiency levels, and classroom resources, as examined in the following sections.

Student English language proficiency

Lan found students' mixed levels of English language proficiency to be her concern. She noted a link between this difference and English programmes at high school in different regions:

> *Students' levels of English vary between country and city students. While students in the countryside do not have conditions to study English programmes at high school, city students can study English at school and in evening classes. (IT.Lan.S2.I)*

The variations of student English language proficiency could be a challenge that prevented Lan from making changes in her lessons. Lan also reported such challenges during the follow-up interview. She said, *"Depending upon different learning conditions that students may have, some cannot even afford to learn English"* (IT.Lan.S2.F).

Classroom resources

Lan also noted the lack of classroom resources, particularly internet access through which students could find articles they need, to learn this ESP paper. She said, *"Access to the internet to retrieve articles is still limited; therefore, this prevents students from reading online and preparing well for seminars"* (IT.Lan.S2.I) In this comment, Lan's beliefs about inaccessibility of the internet for learning resources or databases influenced not only how students learned but also how she could facilitate their learning.

The following section demonstrates the teaching strategies that Lan had implemented in her class.

4.8.4 Change process

In this section, two observations (one at the start and the other at the end of the research) were provided as evidence of the changes that Lan had employed in her class.

The following examples show how Lan used productive skills in her classroom practice. First, Lan employed concept mapping to engage students in speaking English. An extract of observation data below demonstrates the variations in her teaching approach.

> *Lan had each four-student group read and then map the first paragraph of the text on viruses using vocabulary in the text (see Figure 5.3). During student practice, she moved around the class to check student progress and gave hints. (OB.Lan.S2.15.20-15.50pm)*
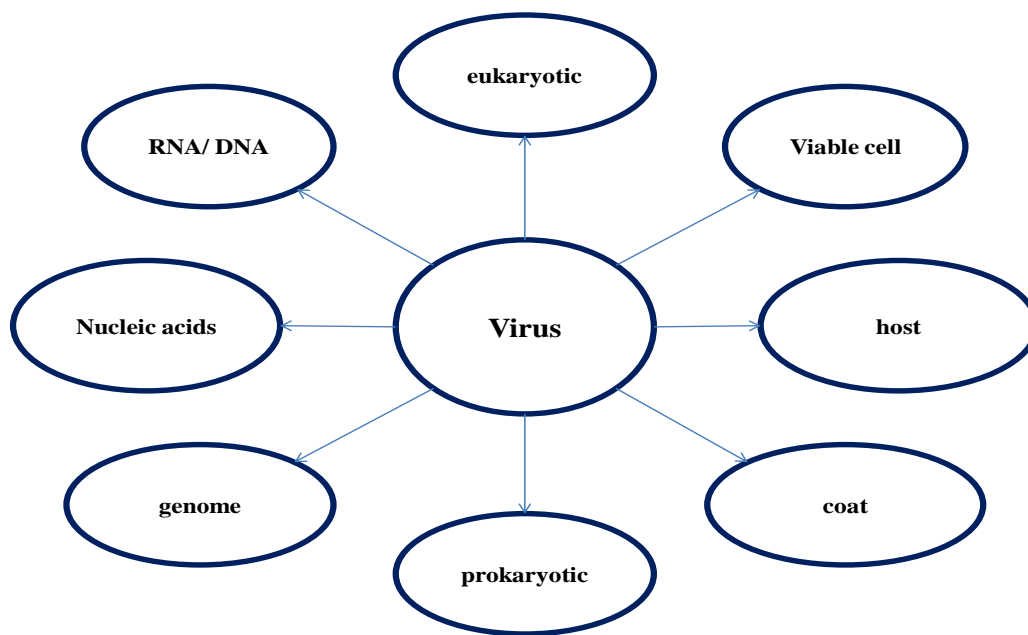
Figure 4.1 Concept mapping for 'virus' text

It seems that Lan first positioned herself more of an evaluator than a facilitator. However, she shifted her role to a facilitator encouraging students to develop and link ideas through a concept mapping technique. She was aware that this strategy could provide students with greater involvement in voicing and relating their understanding to the topic and create for them a relaxed and interesting atmosphere (PM3.Lan.S2). Using concept mapping to elicit ideas from students enabled them to become more active and dynamic. As a result of doing group tasks, students could share ideas with others and build on subject knowledge.

A second speaking activity that Lan implemented in her class was the use of video clips when questioning students. She was observed asking students to talk about 'bacterial viruses', and requiring them to summarise the main points within ten minutes (OB.Lan.S2.16.40-16.50pm). Reflecting in the follow-up interview, Lan revealed that using video clips allowed students to recall prior knowledge and encouraged shy or weak students to feel confident in speaking English (IT.Lan.S2.F).

In addition to questioning techniques, the use of matching, cue cards, and the student reflective journals were further changes indicating how Lan changed her teaching

strategies. These strategies allowed students greater opportunities to take more active roles in their learning process. Students were required to brainstorm ideas regarding nucleic acid and functions of proteins (OB.Lan.S2.15.20-37p.m). Lan recognised that students found this technique a natural way to learn English rather than being told to do so. The following episode further highlights the different roles of students that Lan thought to be crucial.

> *Lan passed reading handouts to nine groups of five and required them to skim for main ideas and complete a matching exercise in 20 minutes. Students played three roles: group leader, secretary, and timekeeper. The researcher assisted Lan to monitor student work. (OB.Lan.S2.15.37-16.10pm)*

The group work used by Lan supported her beliefs about active learning as being student-centred. Lan's metaphor, *playground* indicated the learning environment that provided students with more space and autonomy to speak in English (PM3.Lan.S2).

Another activity Lan believed optimised student speaking was the use of cue cards. This speaking activity indicates that she viewed students as active learners and as more involved in the process of learning and progress, as noted in the following extract.

> *Lan had students work in pairs. Each was provided with a set of eight-question cards and a set of eight- answer cards. The topic was nucleic acid by viruses. In 20 minutes, 22 pairs acted out and swapped roles. Lan and the researcher moved around the class and checked their practice. (OB.Lan.S2.16.10-16.40pm)*

As Lan now became aware that change could influence active learning of students over time, she also felt the need to receive their feedback through journal writing. As shown below, this strategy was likely to help students to refine their writing skills, thereby allowing her to evaluate student learning.

> *Lan had students write reflective journals regarding what they had learned from the lesson. The time given for this task was ten minutes. The researcher assisted her in checking students' word choice and language use. (OB.Lan.S2.16.40-17.00pm)*

It appears that this activity helped Lan view students as being more active and responsible for their learning process. Through receiving student feedback on the

lesson, Lan also knew the extent to which students had learned in her class. She noted that she would continue to use reflective journals in her future practice so that students could relate their prior understanding to new knowledge, reflect on, and improve their skills (PM4.Lan.S2).

The two observations mentioned above highlighted the changes that Lan had made in her teaching practice. These interactive activities seem to indicate her awareness of the need to define her role as a facilitator of active learning and consider students as the centre of the learning process.

Lan further believed that active learning had fitted very well into her teaching as a result of her student learning of new knowledge. She said, *"Active learning has fitted into my teaching in ways that students gain relevant knowledge"* because *"they knew how to pronounce words, learned more new words, and remembered key terms. Their answers made me happy"* (IT.Lan.S2.F). These statements suggest that students had positive attitudes towards learning the ESP paper. Lan also revealed how students were now more involved in the learning process as a result of changes she had made in her practice, which was illustrated in the following quote:

> *Students formerly shy and passive have changed their attitudes towards learning. They are now more active and confident, working in pairs or small groups, speaking English. Students are also involved in cue cards and reflective writing. (IT.Lan.S2.F)*

Students seem to become more active rather than just passive learners. Active learning was therefore related to the transfer of role and responsibility from the lecturer to students, thereby allowing them to learn better through speaking activities. In addition, the changes in student attitudes towards learning in this ESP paper were related to new teaching strategies that Lan initiated. These strategies aimed to encourage greater involvement and interactions among students in the classroom.

4.8.5 Summary of Lan's change process

The data show that Lan's beliefs about active learning were related to student autonomy and to the interaction she had with her students in the ESP class. Such beliefs reflected

her awareness of the need to make more change in her practice. As a facilitator of student learning, Lan acknowledged the value of the support that she received from collaboratively working with the researcher during the implementation process of change. This support, in turn, provided students with more space in their learning experience. Lan's understanding about the change process influenced the ways in which she implemented active learning strategies in her class.

Lan's concerns about the change process appear to have increased understanding of the practice which she had been experiencing. In particular, her concerns about her own English language proficiency seem to reflect her sense of self-efficacy in relation to the endeavours she had to promote student learning. Lan's perceptions of student preferences to learn the ESP paper were likely to influence her roles and skills development in presenting knowledge to students. Lan also believed in the student capability to learn new knowledge in several ways that she had not previously considered. Students in her class can be seen as active owners of knowledge in the learning process.

4.9   Account of Truc's practice change

> *If I do not change my own ways of teaching, students will not learn much. I always want to help them to learn better and to be a role model. (IT.Truc.S2.F)*

Truc participated in the research in Semester Two during the 2011-2012 academic year. At the time of the study, as a senior lecturer, she had 21 years of teaching experience in aquaculture and taught English for Specific Purposes (ESP), namely *English for Aquaculture* for just a little more than one year. She had a PhD degree in aquaculture from the United States and used English in teaching the ESP paper. 17 second-year students in Truc's class studied two 50-minute periods of *English for Aquaculture* per week over a 15-week semester. Due to the complexities of technical knowledge of aquaculture, Truc was one of the two lecturers in charge of this paper. According to the paper objectives, students were expected to become skilled at reading and vocabulary so

that they could comprehend and acquire the content knowledge of their subject matter (IT.Truc.S2.I).

4.9.1 Beliefs about active learning and lecturer roles

Truc's beliefs about active learning and her role as a lecturer are examined in detail below.

Beliefs about active learning

At the beginning of the study, Truc believed that active learning was related to seminar teaching. She stated,

> *I like to work with my students in a seminar in which adjunct lecturers, from English-speaking countries, who teach in the department, participate. I consider this type of instruction as a long-term project for students to discuss and solve a particular problem. (IT.Truc.S2.I)*

Truc believed the role of students was important in the learning process facilitated by foreign lecturers. She felt the need to engage the students in thinking about a particular learning activity so that this may build on their subject matter. This strategy is associated with critical thinking and interactive discourse.

In the follow-up interview at the end of the study, Truc revealed that her beliefs about active learning were consistent with her initial responses in relation to the role of the students: *"As brainstorming, free practice, or questioning refers to active learning, students now show strong interest and enthusiasm in the activities they choose"* (IT.Truc.S2.F). Truc's accounts therefore seem to indicate the interaction and collaboration between herself and her students.

Beliefs about lecturer roles

In engaging students in an active learning environment, Truc initially indicated the weaving of three roles that she employed at different stages of her lesson. These roles include a knowledge provider, a facilitator, and a guide:

> *I am a provider of knowledge because I want them to learn vocabulary and content knowledge. During the group discussion and exercises, I position myself as a facilitator. When students do not know what to do next for a given task, I play the role of a guide. (IT.Truc.S2.I)*

In the follow-up interview at the end of her participation in the study, Truc viewed her role change as a positive experience: *"I play the role of less than a lecturer in comparison with that in the previous semester. I am a facilitator during the class discussions" (*IT.Truc.S2.F). In the planning meeting near the end of the study, she elaborated on her role as a facilitator during her instruction:

> *I think a facilitator is the most effective role over time. Students become more proactive and confident. They participate more in discussions compared to what they did in previous classes. Well, I talk less but students talk more during the lesson. (PM4.Truc.S2).*

Truc believed her role change provided students with a learning space so that they could become more autonomous in their learning.

Truc also believed that active learning had fitted effectively into her teaching as a result of the learning opportunities that cater for students. She said, *"I think active learning has fitted into my teaching because of the small class size and the students' relatively similar level of English language proficiency"* (IT.Truc.S2.F). It appears that there was an interplay of class size, student English language proficiency, and their learning outcomes that influenced her beliefs.

Truc highlighted the benefits of the changes in her practice. She said,

> *First, the changes in my practice will change the way students learn. Specifically, students now know how to make presentations, identify main ideas, participate in discussions, and work in pairs. (IT.Truc.S2.F)*

It appears that these activities may have positively influenced her beliefs about active learning. She also recognised that students were more aware of the importance of internalising new knowledge.

Furthermore, Truc confirmed that students gained a positive learning experience in response to her teaching strategies: *"At first students cannot answer my questions.*

However, after given prompts, they understand and answer the questions. They were very interested and engaged with activities and discussions" (IT.Truc.S2.F). Truc's assertions about student engagement and her role shift during her instruction were interrelated. This interrelationship illustrates Truc's beliefs that students, once given a forum to voice themselves, could investigate how to learn, rather than just reproducing knowledge.

Moreover, Truc expressed her optimistic views on the change process in relation to active learning:

> *The active learning strategies that I try to engage students in make me feel more confident and motivated since I can do something for my students, and ultimately, I love my job more than ever. (IT.Truc.S2.F)*

The quote presents how Truc acknowledged the changes in her practice were worthwhile because they seemed to enhance her confidence, motivation for change, and the passion she had for her career path and professional growth. In this regard, Truc recognised the benefits of collaboration and support in relation to her professional development and noted students' perceptions about her changes. She said:

> *Despite more time preparing lessons and discussions, I feel very happy to work with you to refine my paper objectives. Your observations are sufficient and very useful. Students like this paper because they can use English. This research is worth participating in and continuing with. (IT.Truc.S2.F)*

Truc's reflections on the effects of the change process provided further evidence of her commitment to being an agent of change.

The next section will discuss Truc's beliefs about the change process.

4.9.2   Personal beliefs about change

Truc's beliefs about the change process were associated with the need for change, her self-efficacy, and external support.

The need for change

At the start of her participation in the study, Truc believed that change required collaboration with other ESP lecturers. She said, *"I need to work with other lecturers to develop curricular activities"* (IT.Truc.S2.I). It appears that Truc recognised the importance of learning and sharing experience with her colleagues in creating teaching materials. She further noted, *"I do not have a sense of humour and the ability to tell stories to make the classroom atmosphere interesting"* (IT.Truc.S2.I). These comments suggest her beliefs about how classroom dynamics may motivate students to learn.

Truc believed that students wanted to learn vocabulary because *"they cannot understand when I deliver the lesson in English"* (IT.Truc.S2.I). Here, Truc was aware of the student preferences to learn in relation to the content knowledge and their needs in learning English. Truc also noted what students saw as good teaching as she said, *"A good teacher must be proficient in English skills, knowledgeable about the subject, and engage students in an active and friendly environment"* (IT.Truc.S2.I). Thus, students' perceptions of effective teaching seem likely to influence Truc's roles in integrating new teaching strategies into the subject knowledge.

Sense of self-efficacy

At the start of participating in the study, Truc expressed her sense of self-efficacy in the initial interview. She said,

> *I found learning ESP was difficult and expected my lecturer to teach me well. With this in mind, now I strive to engage students in practising as many exercises as possible so that they acquire sufficient English to learn on their own. (IT.Truc.S2.I)*

Truc's sense of self-efficacy seemed to have driven her choice and planning of new teaching strategies and reflected her dedication to changes as she viewed students as being responsible for their learning.

When asked what she would do to continue the changes, Truc revealed her strong sense of self-efficacy in relation to student learning. She said, *"If I do not make any changes in my own ways, students will not learn much. I always want to help them to learn better*

and to be a role model" (IT.Truc.S2.F). Truc believed that changes in practice influenced student learning and reflected her identity in relation to the expected roles in her lessons. She went on to describe herself as "*an agent of change"* (IT.Truc.S2.F).

External support

At the beginning of the study, Truc believed that change needed support from institutional policies. She said, "*I think the university should recognise the contribution of lecturers for their effective teaching. I want to observe classes taught by other academic colleagues to gain more experience"* (IT.Truc.S2.I). Her words suggest that recognition of the lecturers' professional initiatives by policymakers could be a great encouragement to the lecturers in further enacting changes in their practices. As change is a process of learning and sharing experiences, Truc believed vicarious experience could be a source of support that contributed to enhancing her sense of self-efficacy, as discussed above.

Truc also identified that change needed support, mainly from the English language teachers: "*I think I need to share information and experience, and learn how to teach this paper from an English language teacher"* (IT.Truc.S2.I). Truc's beliefs about the pedagogical knowledge facilitated by a language teacher could influence the ways she taught the ESP paper. At the end of the study, Truc revealed that the collaboration and support from the research had allowed her to learn and that, this professional learning influenced students in her class. She said, "*I think with your support over time, I feel more confident and know more about new interactive skills to help my students learn and improve my practice"* (IT.Truc.S2.F). However, she indicated the concerns that might influence her change agenda, as noted in the following section.

4.9.3 Concerns about the change process

Truc's concerns about the change process include time allotment, student English language proficiency levels, and staff unavailability.

Time allotment

Truc noted that the class time was insufficient for her to provide students with skills and feedback when they took the ESP paper. She said,

> *Class time is always my concern because if I only focus on teaching vocabulary, the students will become bored. I do not have enough time to give them feedback on other tasks. (IT.Truc.S2.I)*

It therefore appeared that time constraints might influence her motivation for implementing other skills.

Student English language proficiency

The student English language proficiency levels were identified as another concern that Truc felt influenced the change process. She said,

> *I am concerned about the student level of English language proficiency. If there is a big difference in the English proficiency among the students, I will find it difficult to apply new methods. If there are more than 30 students in class, I will have to find other ways to fit the situation. (IT.Truc.S2.I)*

The variation in student English language proficiency in her class may be related to class size, and thus change was likely to be easier with the 17 students she had, rather than with 30 students. Small class sizes allowed students greater opportunities to learn.

Staff unavailability

Truc identified staff unavailability in relation to teaching the ESP paper. She said, *"I will not be notified to teach this paper until the semester begins. Other lecturers also share this challenge. We do not have time to sit together and share experiences"* (IT.Truc.S2.I). It appears that unscheduled teaching of the ESP paper could challenge her to learn from other colleagues to make her teaching more effective.

Discussion on Truc's change process follows.

4.9.4   Change process

In this section, observation data provided evidence of the changes that Truc had employed in her class. Speaking and reading activities were major parts of Truc's teaching approaches when she gave students an opportunity to present a group task.

Each student in a group presented a section on plant and animal protein. Time for presentation and questions was twenty minutes. Other students questioned the presenting group and were encouraged to use the structure 'I think' during discussion. (OB.Truc.S2.7.00-7.31am)

The extract above illustrates that through group presentation, students had opportunities to interact with Truc and other peers. She explained that group presentation could provoke students to brainstorm, present questions, and summarise key points of the lesson (PM1.Truc.S2).

Another strategy that Truc had utilised was to engage students in learning through video clips, namely an online broadcast and pictures as can be seen in the following excerpt.

Truc had students watch an online broadcast on tiger shrimp and fish base. Students observed, took notes, and identified key concepts. The listening task was three minutes. Truc had students observe the picture of a fish and required them to name thirteen parts of a fish. Students practised pronunciation of the terms before turning to the reading section. (OB.Truc.S2.7.50-7.54am)

Although the activity only took a short time, students were able to learn the concepts in a different way, and different English skills were integrated by Truc. During the planning meeting, Truc explained that the use of video clips could get students focusing on the task, thinking about what they were doing, and improving listening skills (PM2.Truc.S2).

A second example shows the development of Truc's teaching strategies over the semester of her participation. As part of implementing the change process, Truc used cue cards and reflective journal entries as further changes to engage students in taking more active roles. The observation notes below illustrate her changes in the ESP class.

In pairs, 16 students were provided with eight sets of three cue cards to practise and swap roles. Time for this task was 15 minutes. After the task, students were allowed five more minutes for free practice. (OB.Truc.S2.9.40-10.00am)

The use of cue cards allowed students opportunities to speak more English with their peers. Truc viewed herself as a facilitator who talked less but observed more student

learning, whereas students were considered as active and dynamic learners who were more involved in the learning process.

Reflective journal entries used by Truc with an emphasis on improving student writing and enhancing her new understanding of changes are shown in the following excerpt:

> *Before ending the lesson, Truc had students write reflective journals on 'fish morphology.' Time for this task was ten minutes. (OB.Truc.S2.10.45-11.00am)*

Truc confirmed her intention to continue the use of cue cards and reflective journal entries as these strategies could foster her professional learning (PM3.Truc.S2).

The observation data demonstrated how Truc employed new teaching strategies in the change process. Such changes promoted the interactions between Truc and her students. The focus on the integrative skills of English reflected how Truc defined her role as a facilitator and considered students as active learners of new knowledge.

4.9.5   Summary of Truc's change process

Truc's beliefs about the change process were related to the quality of instruction and active learning strategies that motivate students to learn the ESP paper. In particular, she associated active learning with seminar teaching and the inclusion of interaction between herself and her students. Such understandings led her to become an agent of change as she found collaborative planning could influence her classroom practice. Nonetheless, Truc's concerns such as time constraints, student English language proficiency levels, and staff unavailability, which might influence her implementation process, did not stop her considering student preferences and shifting her role. These insights instilled Truc with confidence and passion for change in line with the self-efficacy beliefs, which enabled her to position herself as a facilitator of a student-centred active learning approach. Her change process showed her visions of learning because she viewed students as active and dynamic learners. Reflecting on practice, Truc valued the research since this collaborative involvement offered her good insights into her practice and its quality.

4.10 Summary

This chapter has presented how eight Science lecturers experienced and managed their change process in relation to active learning in Science classes in a Vietnamese university. All of the participating lecturers demonstrated positive beliefs about active learning that influenced their roles while working alongside the researcher over an extended period of time. These lecturers seemed to have had increased awareness of the inclusion of the active participation of students and their interactional patterns in the learning process.

As a result of their positive sense of self-efficacy, the lecturer beliefs about change helped them to redefine their roles as agents of change and reflected their commitment to implementing new teaching strategies to enhance active learning of students in Science classes. The role changes experienced by the lecturers in the present study were crucial to their professional growth, which aligned with their beliefs about the teacher change process. In the following chapter, a detailed discussion of the findings is considered and the Teacher Change Model for Science Classes developed.

CHAPTER FIVE
DISCUSSION

> Most people are willing to adapt not because they see the light but because they
> feel the heat (B. Johnson, 2003, p. 87).

5.1 Introduction

The main goal of this study was to investigate the ways in which the Science lecturers
conceptualised and managed the change to include more active learning strategies.
Thus, student learning could be enhanced and local government imperatives met. As a
result of analysis of the findings on lecturers' change processes, a theoretical model of
teacher change in Science practice contexts was developed. This model was developed
as part of the researcher's on-going reflection on the lecturers' change process and how
this was entwined with their beliefs about active learning. In this chapter, the discussion
of findings from this study is organised into sections aligned with the three research
questions:

1 What do lecturers believe active learning is and how does this influence their
   roles?
2 How do lecturers change their teaching strategies in line with their beliefs about
   active learning in their classes?
3 What are the factors that influence lecturer beliefs about change with regard to
   enhancing active learning in a Vietnamese university?

5.2 Lecturer beliefs about active learning

This section focuses on examining lecturer beliefs about active learning and the impact
of the beliefs upon their roles in an Science teaching context.

The findings, based on the interviews with the participating lecturers and planning meeting data, showed that all eight lecturers had positive views on active learning. They all believed that active learning involved student-centredness and classroom interaction (see Figure 5.1). Each of these aspects is now discussed.
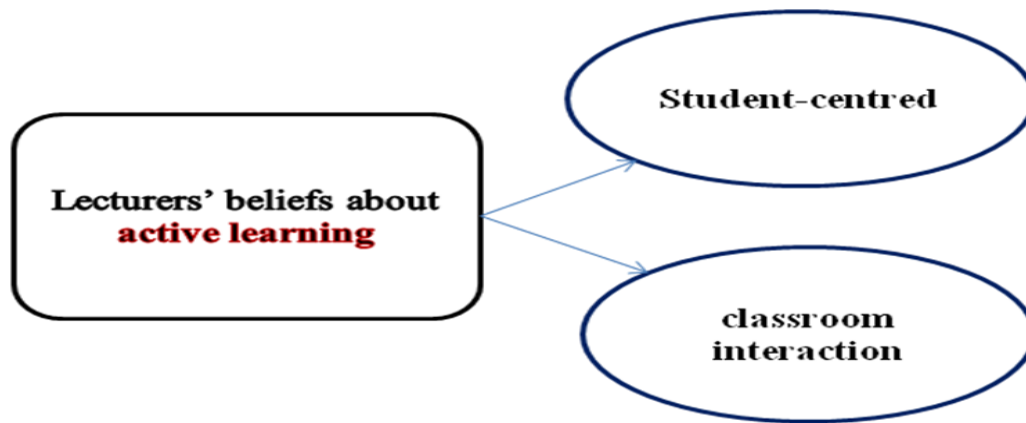
Figure 5.1 Lecturer beliefs about active learning

5.2.1   Active learning as a student-centred approach

All eight Science lecturers believed that the core dimension of active learning was related to student-centredness. In particular, the extent of their belief about active learning embraced learner autonomy, construction of new knowledge, problem solving, and critical thinking. These higher order-thinking processes are discussed further below.

The lecturers' focus on student-centredness demonstrates that an important shift has occurred in the lecturer beliefs about teaching, because it indicates a move from a traditional lecturing (teacher-centred) view towards adopting an active learning approach. This shift was driven by intellectual curiosity and its tradition of valuing knowledge and learning. As noted in Chapter Two, in Vietnamese educational culture, the teacher is a highly respected person located within a hierarchically defined position of power over students. Student-centreness is therefore contrary to traditional cultural constructs of the teacher-student relationship in Vietnam.

It is important to note that this shift is meaningful in this context because the traditional Vietnamese learning philosophy is predominantly described within the context of collectivism that focuses on the interdependence between personal attainment and the

value of social relationships. In addition, encouraging active participation by students is prioritised by the Vietnamese government's goals for higher education corresponding to the call for quality of teaching and learning, as stated in the Education Law of Vietnam (2005). Both similarities and slight variations existed among participants in their views about students being at the centre of learning. The lecturer beliefs about active learning and a student-centred approach, as evidenced during interviews and data on their reflections in planning meetings after the changes, are now addressed.

Four of the eight participating lecturers (Anh, Binh, Mai, and Lan) believed that active learning was linked to the notion of learner autonomy. For instance, Anh said, "*Active learning is very important because students can freely contribute to discussion in class. They do not need to wait for others or me to tell them what to do*" (IT.Anh.S2.I). Thus, it appears that Anh's view of active learning encourages students to become independent of him. Students became decision-makers and were able to make choices about their ways of learning.

In Binh's case, there was a major change in his beliefs about active learning during the change process. Initially, Binh indicated that he believed active learning is "a difficult question." He implied that active learning resulted from the fact that students learned through his lecture mode where he had a dominant power over his students. He said, "*Previously, I lectured and my students listened*" (IT.Binh.S2.F). However, Binh also recognised the value of active student participation in constructing new knowledge, as shown in his comment: *"Now, I think active learning depends on student involvement and their responsibility for their studies"* (IT.Binh.S2.I). From the perspective of meaningful learning (Kember, 2009; Michael & Modell, 2003), Binh's belief about students being responsible for their own learning is likely to link with his role shift from traditional lecturing to active learning. This belief was confirmed during his practice. He had his students work in groups and required them to identify the key ideas of a reading text after which each group representative summarised the main points of the text (OB.Binh.S2.13.30-13.50pm).

Mai initially also believed that students should play a central place in taking responsibility for their own learning. In particular, she thought active learning should

engage students in problem-solving activities. She initially encountered this concept through the tenure-track examination to become a full-time lecturer and through co-teaching and working with an Australian expert in environment projects (IT.Mai.S1.I). It is therefore likely that her awareness of the need for a role change in her practice was influenced by research and professional experience with foreigners. Mai was the only lecturer who had this sort of experience.

In Lan's account, she did not view herself as the role of knowledge provider only. Rather, she believed that students must search for the knowledge and interact with her for more information (IT.Lan.S2.F). She therefore believed that active learning allowed students the opportunity to learn by discovering. This belief is supported in the literature (e.g., Ganza, 2008; Lamb & Reinders, 2008; Poskitt, 1994) which claims that learner autonomy depends mostly on the relationship between the lecturer and students.

Cuc and Truc believed that active learning was related to the importance of critical thinking that results in student learning. For example, Truc associated active learning with brainstorming, free practice, or questioning in the class presentations (IT.Truc.S2.F). These strategies seemed not only to provoke students in her class into thinking about what they were learning but also to engage them in interactive activities. This is a noteworthy finding because Truc recognised the need to provide students with opportunities to learn by doing things or to inquire into new knowledge critically and meaningfully.

Hung and Tin, despite slight differences within their views on active learning, seemed to have encouraged students to actively participate in their learning. While Hung believed active learning was related to student interest in learning an ESP paper, Tin believed active learning enhanced his student feeling of confidence. In Hung's case, he indicated that when students were required to search for more references or to work in groups or teams, they expected to learn more (IT.Hung.S1.F). Tin also revealed that after he implemented more active learning practices, students in his class felt more confident in verbally presenting their assignments to the class (PM4.Tin.S1). Lecturers therefore believed that a positive impact of creating such active learning strategies was that students had greater involvement in and responsibility for their tasks.

The lecturers also came to understand the need to encourage students to voice their own ideas, and to select and construct new knowledge. This understanding is consistent with the literature on learning space design in higher education (Harrop & Turpin, 2013; Howard, 2011; K. E. Matthews, Andrews, & Adams, 2011; Oblinger, 2006; Perkinson, 2009; Savin-Baden, 2008; Temple, 2008). These authors indicate that informal learning spaces allow students to have greater engagement in active learning.

The findings of this study concur with the research literature that indicates the importance of encouraging active roles for students in order for them to contribute to their own learning process (e.g., Bonwell & Eison, 1991; Capel et al., 2009; Meyers & Jones, 1993). However, these studies tend to focus on the theoretical perspectives of using active learning strategies. This study sheds new light on how lecturer beliefs link to the implementation of active learning strategies through a student-centred approach, within the context of teaching ESP science undergraduate classes. Such understandings of the importance of placing students in the centre of the learning process seem to encourage lecturers to engage students in learning new knowledge and to change lecturers' ways of assessing student performance to align with the credit-based system required by a Vietnamese university. In the credit-based system, Science lecturers can adopt a student-centred active learning approach because they have been encouraged to design their own curricula in this course.

5.2.2 Classroom interaction

ESP lecturer beliefs about active learning were also related to the inclusion of classroom interactions. Six of the eight participating lecturers (Anh, Binh, Cuc, Mai, Tin, and Truc) believed active learning involved interactive activities. For example, reflecting in a planning meeting Truc reported that group presentations allowed students to speak more English in class. Lan also realised that students in her biology class learned better through interactive activities as she shifted her role. For instance, she said, *"The teacher and students have to work together and build on new knowledge"* (IT.Lan.S2.F). This interaction pattern supports her beliefs that students may have greater opportunities to become more collaboratively involved with the teacher in constructing knowledge. Through this involvement, interpersonal relations with the teacher may also be

enhanced. For example, Hung's students could consult with him via email at any time (IT.Hung.S1.F).

In the present study, positive interactions with students also appeared to inspire ESP lecturers with confidence in trialling more new active learning strategies specific to the needs of the students in learning this paper. Findings from this study are consistent with a study by Sullivan (2000) on learning English as a foreign language in a Vietnamese university. Sullivan claims that classroom interactions are the core foundations for creating a community of learners. In building such a community, students were likely to be motivated to co-construct knowledge with lecturers, feel more comfortable, and foster their active learning participation.

All participating lecturers believed that providing a platform for students to exchange their ideas to better understand a particular topic might be a positive and indispensable ingredient that facilitated active learning and learner autonomy. One good example of this is Anh's case. He said, *"Students have fun by saying what they know and presenting that knowledge to others. They bring questions to class now, while they had not been told to do so before" (*IT.Anh.S2.F). This comment shows how students positively responded to Anh's new teaching strategies and they were more involved in the learning process. It also appears that while presenting a particular given task, students had more opportunities to interact with their peers in a friendly and relaxed learning environment. Moreover, this environment allowed them to make their own choices to construct new knowledge. This involvement illustrates a move from a teacher-directed style to allowing more responsibility and choices by the students. In particular, it may indicate that students could exchange ideas in learning a foreign language, thereby establishing an interactional relationship with regard to their subject content.

Cuc had a different view from Anh about active learning in relation to students' interpersonal relationships and new ways of learning, as noted in her comment, *"Students were previously not told to make presentations in class. However, through my work with you and encouraging students to make presentations, they now do the job very well and perfect performance styles"* (IT.Cuc.S2.F). In moving students beyond traditional lecturing, Cuc was aware of the benefits of involving students in how to give

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presentations and through this, they gained from watching other students' presentations. Such group presentations also allowed individual students to contribute their ideas and understanding of the topic under discussion. As a result, classmates were able to answer the questions raised by students of other groups. As suggested by Knutson (2001), interactions within a group setting can direct students to greater autonomy in communicative tasks and there is a benefit for content and language integrated learning.

The findings on classroom interactions in this study are well supported in the literature in relation to active learning (Machemer & Crawford, 2007; Meyers & Jones, 1993; Revell & Wainwright, 2009; Welsh, 2012). These authors maintain that active learning strategies play a major role in promoting interaction, particularly by engaging students in presenting and sharing differing ideas with others. This interaction may raise lecturer awareness of the need to engage students in greater responsibility for their own learning. Thus, if students in Science classes are given more interactions with others, they will be more likely to actively construct their own knowledge and understanding.

5.3   How lecturers enacted the change process

In this section, discussion now turns to the second research question as to how the participating lecturers implemented their change processes in line with their beliefs about active learning. All eight participating lecturers reported having and were observed to have implemented active learning strategies to enhance student learning and participation in their Science classes. These activities were chiefly focused on speaking and writing activities. How lecturers utilised each of these two aspects is now discussed.

5.3.1   Strategies to promote speaking

The five speaking activities implemented by the participating lecturers included grouping students, questioning, brainstorming, concept mapping, and guided practice. The focus of these activities was to expose students to greater interaction, participation, and higher levels of thinking about their learning process.

Grouping students

All eight participating lecturers believed that one of the most effective ways to enhance student speaking in class was to organise groups in different ways. One good example of this active learning strategy was when Anh initiated group work and problem-solving exercises by having microbiology students seated randomly in small groups of five. Students were required to discuss the reading passage and identify the main ideas using key words in the text. To encourage interactions between students, Anh and the researcher only gave them prompts and checked their work if students needed support (OB.Anh.S2.7.10-7.20am). Anh's changes in the grouping of students and the involvement of thought-provoking tasks brought students together and increased their interactions. Thus, Anh believed that greater responsibility was required by students for their learning, but less control was needed on the part of the lecturer. As confirmed by Harmer (2007), the grouping of students allows students to work and interact without strict guidance or control of the lecturer, thus promoting a relaxed and friendly atmosphere. Although mixed ability classes of English proficiency levels might be difficult for lecturers to manage their teaching, grouping students of mixed levels can be a useful way to enhance active participation of students in the learning tasks.

Cuc had a different way from Anh of arranging student seating in her biology class. She asked students to number off, one to five around the class. This seating arrangement enabled her to mix students, so all the students numbered one would go together and so on. For instance, she used this grouping when students presented their topics for learning on biology and classified organisms (OB.Cuc.S2.7.00-35am). Such grouping may not only result in a friendlier learning environment but also allow for better mutual understanding and increased interactions. As Harmer (2007) indicates, through mixed-ability grouping, the better students can benefit from assisting their less able peers who would also benefit from such help.

Questioning

All eight participating lecturers spoke of the importance of using a questioning technique to involve students in active participation in the learning process. While two of the eight participating lecturers (Cuc and Tin) used questions to encourage students to construct new knowledge, Anh had students question their peers in a group

presentation with a view to relating prior to new knowledge and changing the classroom atmosphere.

In Tin's case, for example, he asked students to verbally answer the questions, such as *'How many types of marine organisms are there?'* and *'What factors affect the distribution of marine organism*?' (OB.Tin.S1.15.20-16.10pm). During a collaborative planning meeting, Tin explained that he made use of this technique to get students to think about what he was going to present to them rather than lecturing or prescribing the answers as had been previously done. In contrast to teacher questioning by Tin, Anh was observed having students raise questions to the presenting group (OB.Anh.S2.7.00-40am). In this scenario, he involved students in speaking activities from the beginning of the lesson and allowed for interactions among their peers. It appears that both Tin and Anh employed questioning techniques to encourage students to learn by doing things themselves and becoming dynamic owners of knowledge. These are important findings because the lecturer practices were consistent with their beliefs about active learning in relation to giving students opportunities to express their ideas and provoke thinking. This approach is also supported in the literature (Biggs & Tang, 2011; Chin, 2007; Tienken, Goldberg, & DiRocco, 2009; N. S. Wilson & Smetana, 2009, 2011) which claims that through questioning techniques students can develop their critical thinking and become independent learners.

Likewise, Mai realised that students learned better through questioning practice rather than reading and translation techniques. One instance of this was observed when she encouraged students to question the panel group presenting the topic on wetland for wastewater treatment. To ensure that students were engaged in the learning process, Mai stood at the left back corner of the class observing and checking on student participation (OB.Mai.S1.8:40-50a.m). This strategy led to greater involvement and critical thinking by the students. This is an important finding because the students felt comfortable to share their ideas and understandings about the lesson, questioned other peers, and thought in-depth about the given lesson content.

Four of the eight participating lecturers (Binh, Hung, Lan, and Truc) used video clips in various ways to support their questioning strategies. While Binh and Hung employed

video clips to draw students' attention to and explore their critical thinking about the lesson presented to them, Lan and Truc used video clips to elicit responses from students and encourage shy and weak students to be confident. With respect to the use of video clips, Binh had students watch and listen to a video clip of lecture notes about chemistry, then ask them to identify the key terms, to read aloud and orally translate the segments (analytical and inorganic chemistry, agrochemicals) online (OB.Binh.S2.14.50-15.10pm). Similarly, Hung was observed having students watch a video clip on adenosine triphosphate, then requiring them to observe and decide what they could tell other students about how adenosine triphosphate is produced (OB.Hung.S1.9:50-10am). In planning meetings, both Binh and Hung recognised the importance of engaging students in the lesson. However, Hung further noted that as students were required to answer questions within a short time, this strategy enabled them to relate prior understanding to new knowledge and motivated them to interact with him.

Whilst Lan used video clips on bacterial viruses to summarise key points and provide feedback on student responses (OB.Lan.S2.16.40-16.50pm), Truc had students watch and listen to an online broadcast on fish base, observe a picture of a fish, and then orally name 13 parts of a fish (OB.Truc.S2.7.50-7.54am). Both lecturers explained that the use of visual representations had allowed students to recall the previous lesson or focus on tasks. However, Lan further noted that the use of a questioning technique during this encouraged students who were shy or weak in English to be confident (IT.Lan.S2.F). Reflecting on the planning meetings, Lan indicated that this strategy seemed to enable students to communicate more in English. On the other hand, Truc believed that using video clips not only helped students to learn in different ways but also improved their listening skills.

These findings from the study add to previous knowledge found in the literature, which suggests that questioning is a powerful teaching technique (Ramsey, Gabbard, Clawson, Lee, & Henson, 1990). These authors note that encouraging students to ask questions enables them to disclose their "confusions and understandings" (p. 422). In other words, this technique may help students to construct new knowledge in ways that are pertinent to their science areas.

Brainstorming

Three of the eight participating lecturers (Anh, Cuc, and Tin) employed a brainstorming technique to enhance student speaking in English in their ESP Science classes. Of these three, both Anh and Tin encouraged students to brainstorm the topic of the lesson. For example, Anh had students brainstorm on the topic 'Sewage treatment' (OB.Anh.S2.7.00-7.40am). The focus of this activity was to allow students to speak more English in class (PM4.Anh.S2), but Anh's brainstorming strategy also seemed to increase the interactions among students. Likewise, Tin's students were asked to brainstorm the topic 'Abiotic features of marine biology' (OB.Tin.S1.15.20-15.35pm). Tin revealed that this teaching strategy aimed to improve student engagement and interaction, and particularly to encourage timid and shy students to speak and learn better. He advocated that brainstorming helped students to think more deeply about the lesson by themselves. Moreover, group discussion that functioned as problem solving might put students at ease and make their learning more active (PM3.Tin.S1).

In contrast to Anh and Tin, Cuc used brainstorming as part of a problem solving activity. She asked students to think individually first and then in small groups to verbally explain the development and growth of the tree in English (OB.Cuc.S2.7.30-7.45am). She claimed that this problem-solving task was focused on provoking students to think about the new lesson and encourage more ideas to come from the students (PM2.Cuc.S2). The researcher's observation further suggests that when students were engaged in brainstorming ideas both individually and in groups, they could concentrate more on the task, speak more English, and seek different potential solutions for the problem.

It appears that brainstorming used by lecturers allowed students to learn ESP in more active ways. The literature contends that brainstorming as a problem-solving strategy promotes idea generation (Byron, 2012; Fleming, 2000; Goldenberg & Wiley, 2011; K. M. London, 2006; Osborn, 1953; Putman & Paulus, 2009). These authors also indicate that brainstorming may encourage students to develop divergent thinking and capitalise on new ideas of others. In the present study, individual or group brainstorming seemed to enable students to contribute as many ideas as possible to feed into or tease out the given topic or task under discussion.

Concept mapping

Three of the eight participating lecturers (Anh, Cuc, and Lan) employed concept mapping techniques to enhance student speaking in English in relation to active learning in their classes. Concept mapping refers to the organisation of ideas and representation of knowledge (Novak, 1990; Novak & Canas, 2008). According to Novak (2008), concept mapping can be a useful tool to facilitate and enhance meaningful learning of students. The notion of meaningful learning was grounded in Ausubel's (1963) philosophy that new knowledge builds on prior knowledge and creates connections among ideas (Davies, 2011; Greene, Lubin, Slater, & Walden, 2013; Novak, 1990). Meaningful learning thus takes place when students understand the connections or relationships between the ideas or concepts of a given topic. The use of this strategy seems to reflect the lecturer beliefs about the importance of engaging students in thinking about the key ideas that they were going to learn in the lesson.

Anh, in particular, had students draw a map of ideas after discussing the topic 'Sewage Treatment' (OB.Anh.S2.7.00-7.40am). This involvement perhaps demonstrated his understanding of providing students with greater opportunities to speak in English and actively contribute new ideas to the topic under discussion. Anh also explained that this teaching strategy allowed students to relate their prior understanding to the lesson content and to think in more depth about that lesson (PM6.Anh.S2). Similarly, Cuc found that students made more effort and improved their learning process when she asked them to outline the relationships among all ideas of the topic 'biology and its characteristics' (OB.Cuc.S2.7.00-7.15am). Cuc explained that concept mapping helped students to construct new knowledge by their own thinking. She believed that students became more active in their learning process in terms of interaction through the concept mapping process (PM2.Cuc.S2).

While Anh and Cuc engaged students in mapping ideas around a given topic at the beginning of a new lesson, Lan had each four-student group read the first paragraph of the text on viruses and then required students to map the paragraph by selecting virus related vocabulary. Lan's strategy appears to show that she understood the need to promote student thinking about how to link prior ideas, understandings, and science concepts to the central focus of the new lesson. This teaching strategy also led students

to adopt more relaxed and interesting learning. Lan also noted that using concept mapping to elicit ideas from students helped them to become more active and dynamic in the learning process (PM3.Lan.S2).

Several studies have been conducted on how concept mapping influences student learning in science education (Ausubel, Novak, & Hanesian, 1978; Novak, 1990; Novak & Canas, 2008; Santhanam, Leach, & Dawson, 1998; Somers, 2009). However, none specifically discussed how concept mapping was used to enhance active learning in Science classes taught through English at a university. Findings from this study therefore contribute to the literature on concept mapping, by specifying how this strategy can be used as an effective teaching strategy to promote not only student speaking but also other language and thinking skills in Science classes.

Guided practice using cue cards

Three of the eight participating lecturers (Mai, Lan, and Truc) used cue cards to promote students' speaking activities in their classes. For instance, Mai was observed having students in her class sit in pairs and practice the language on the cue cards on constructed wetlands and their treatment processes (OB.Mai.S1.8.40-8.50am). Cue cards used by Mai seemed to benefit students in several ways. She believed that students could speak more English, practise pronunciation and listening skills, and feel relaxed during the two class periods (PM4.Mai.S1). Similarly, Lan believed that student speaking could be optimised by using cards. This guided practice may indicate that Lan viewed students not only as active learners but also as more involved in the learning process, rather than just being passive recipients of knowledge. This guided practice strategy using cue cards is related to Littlewood's (1991) notion of cued dialogue, and the concept of cue cards used by Matthews et al. (1985) and Ur (1996). These authors contend that through the support from cue cards, students can express their ideas on a given topic and develop interaction. Both Mai and Lan recognised the need to provide students with opportunities to develop verbal skills and improve other English language skills rather than completing a mere teaching task.

An even more interesting example of cue card use occurred in Truc's class of 17 students. She was observed having students work in eight pairs who were each provided

with a set of three cue cards. The remaining student paired with the researcher. Having completed a task on 'water quality in aquaculture ponds', students were given five minutes more for free practice (OB.Truc.S2.9.40-10am). The use of cue cards allowed students in Truc's class further opportunities to speak more English with other peers. This interaction indicated that Truc positioned herself as a facilitator who talked less, whereas students who were considered as active and dynamic learners were more involved in speaking.

The present study adds to the knowledge of how cue cards can be used as a guided practice to enhance student speaking and interaction in Science classes. The guided practice activities used by three lecturers in this study also allowed students to have greater opportunities to participate in their learning process. In particular, while cue cards used in Truc's class would appear to fit within the cognitive domain of learning, Mai and Lan allowed students to develop other English skills in support of the psychomotor perspective (skills development), extending Bloom's taxonomy (L. W. Anderson et al., 2001). Mai's use of cue cards, as a lead-in to her lesson suggests her commitment to providing students with a comfortable learning environment, which corresponds to the affective domain.

The ways the participating lecturers implemented reflective journal writing in their classes are discussed next.

5.3.2   Student reflective journals

All eight participating lecturers involved students in writing reflective journals. There were several reasons for this. First, they believed this strategy helped students to improve writing skills. Second, receiving student feedback through journal writing, on the lesson content and delivery allowed the lecturers to reflect on their teaching practice. Moreover, the lecturers reported that student reflections assisted them to understand to what extent students had learned, thereby leading the lecturers to modify their classroom strategies for subsequent lessons.

One good example of reflection on journal writing occurred in the case of Anh. While his students were writing a journal entry on what they had learned from the lesson on

'Sewage treatment' during class, Anh and the researcher moved around the classroom and monitored student reflective journal entries (OB.Anh.S2.8.25-8.40am). During a later planning meeting with the researcher, Anh revealed that this strategy could allow students to learn other aspects of English such as grammar and word use in context (PM5.Anh.S2). He also believed that his students seemed to have become more active and dynamic in verbalising their own ideas. In addition, he indicated that this activity required students' critical thinking because they had to link this topic to real-life situations and its potential applications. Thus, these reflective journals could be a useful strategy for lecturers to identify ways for promoting student learning beyond classroom practice.

The findings related to journal writing add to the literature that suggests journal writing can lead to active learning (Cisero, 2006; Connor-Greene, 2000; Salem, 2007). The lecturers realised that providing opportunities for students to write journal entries allowed them to reflect on their understanding of new knowledge. It may have been that student reflections were also critical for the lecturers to modify their practices in subsequent classes. For example, in Anh's case, receiving student feedback on the spot seems to have helped him to understand and improve his teaching practice. The use of student feedback suggests that reflection-in-action (Schön, 1987, 1991) may have involved both Anh and his students in co-constructing new knowledge.

It is also interesting to note that two of the participating lecturers (Mai and Truc) revealed that they would continue to use reflective journal entries to stimulate students to learn. These two lecturers explained that this new teaching strategy enabled them to understand how students learned the skill of writing using English, thereby enhancing their professional learning. As a result, reflection led to the lecturers' personal and professional growth, as noted by Convery (1998).

Discussion now turns to the third research question on the factors that influenced lecturer beliefs about change with regard to enhancing active learning in their Science classes.

5.4 Factors that influenced the lecturer change process

All eight participating lecturers indicated that their personal beliefs about the nature of teacher change, professional roles, and contextual factors were key to influencing their change process. Each of these aspects will be discussed further in detail. The discussion of this section was mainly based on the interview data.

5.4.1 Personal beliefs and teacher change

Lecturer personal beliefs about active learning that were identified in the Teacher Change Model for Science Classes (see Section 5.1) included their passion, their sense of self-efficacy, their view of themselves as agents of change, and their vision of students' future selves. These four major belief components were of critical importance during the change process, as examined below.

Passion influences teacher change

Five of the eight participant lecturers (Anh, Cuc, Hung, Mai, and Truc) in this study attributed the positive change process to their personal *passion* for making changes in their teaching strategies to enhance active learning in Science classes. This *passion* reflected their commitment to improving their teaching practices. Evidence of this is shown in the case of Anh who expressed his great interest in learning new things and providing experiences to students that gave them better opportunities to learn (PM1.Anh.S2). Therefore, it appears that the passion Anh had to make students more active and autonomous in their learning was related to his drive for professional growth as a committed lecturer.

While Anh indicated his *passion* for change was related to his personal growth, Hung's metaphor, 'food for the soul', expressed his *passion* for both personal and professional experiences. Hung further explained that change motivated him to learn and upgrade his professional knowledge of what helped students to learn (IT.Hung.S1.I.). In his comments, Hung's passion for change in his biology class seemed to indicate that there is a strong link between Hung's motivation and the responsibility he had for his teaching. Likewise, Mai expressed her passion as being open to changes in her practices in order to enhance student learning. She said, "*Passion is the first prerequisite for me*

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to make changes whenever I can, followed by professional standards I set for myself. I am very interested in learning about innovative teaching strategies" (PM1.Mai.S1). Thus, Mai's passion for change suggests that her personal growth is more important than the professional expertise she wanted to gain. Two other lecturers (Cuc, Truc) also noted that their passions were to make changes in their practices that would engage students in active learning, linking these ideas to individual career pathways and professional growth.

That the lecturers conceptualised the need for change as *passion* supports the literature that contends passion is a motivating factor of teacher commitment (Crosswell, 2006; Day, 2004; Firestone & Pennell, 1993; Nias, 1996). However, no studies have previously identified lecturer passion as a factor in change, or passion in relation to content-based instruction through English within Vietnamese tertiary contexts. This finding suggests that passion is an essential component that can bring about teacher change in Science classes.

Self-efficacy as a factor in teacher change

The participating lecturers expressed varying degrees of self-efficacy, which is the second important component of personal beliefs with regard to making changes, as illustrated in the Teacher Change Model for Science Classes (see Figure 5.3).

Six of the eight participating lecturers expressed a strong sense of self-efficacy in relation to the change process (Binh, Cuc, Hung, Mai, Tin, and Truc). It is interesting to note that while Binh and Hung believed that the need for change was part of their work or responsibility, three other lecturers (Cuc, Tin, and Truc) expressed their sense of self-efficacy in order to make changes in pedagogical practices, particularly teaching strategies. One good example that reflects personal efficacy is the case of Binh who said, *"Lecturers have to find their own ways to teach their own papers. As a teacher, an academic advisor, or even a supervisor, I know what to do for my students in learning this paper"* (IT.Binh.S2.I). It is likely that Binh's sense of self-efficacy was based upon his teaching competence and roles rather than external or contextual influences by the university and college. This suggests that Binh became aware of not only general teaching efficacy but also teaching efficacy that could drive him to make changes. It is

likely, however that his sense of self-efficacy may exist at varying levels in other areas of teaching, as noted in Haworth (2008).

With further regard to the self-efficacy beliefs of lecturers, Truc's case is an interesting example. Truc expressed her sense of self-efficacy with regard to her planning of new teaching strategies, *"Now, I strive to engage my students in practicing as many exercises as possible so that they can acquire sufficient English to learn on their own"* (IT.Truc.S2.I). Her assertion reflected her dedication to change in her practice as she viewed students taking responsibility for their learning process. Such beliefs may influence the choices of the strategies Truc could make, which were relevant to the needs of her students. Ultimately her self-efficacy beliefs demonstrate the great perseverance she is likely to have in the face of difficulties, as recommended by Bandura (1982, 1997) and Pajares (1996).

It is worth noting that Truc further noted that she wanted to observe her colleagues' classes to gain more experience (IT.Truc.S2.I). In Truc's accounts, it seems to suggest that she believed by observing the practices of others, useful sharing of knowledge and learning could occur. Through those observations more effective teaching could be developed. Her strong belief may indicate the positive connection between her self-efficacy and her implementation of active learning with students. It is also possible that her sense of self-efficacy was learned or enhanced through vicarious experience over time that in turn contributes to performing a given task (Bandura, 1997; Evans, 2010; Pajares, 2008; Tschannen-Moran & Johnson, 2011; Zimmerman, 2000). Truc reflected that this vicarious experience might be achieved through working alongside the researcher to improve her teaching and objectives of the ESP paper (IT.Truc.S2.F). Her reflection on vicarious experience suggests that she wanted to gain a higher level of self-efficacy as a result of her participation in the present study.

In contrast, Lan's view on self-efficacy beliefs expressed the way in which change related to personal and professional pride, before her implementation of the change process. She said, *"I want my students to get what I present to them. It would be my shame if my students did not understand my lesson"* (IT.Lan.S2.I). Her affective response perhaps came as much from her expectations of herself as a teacher as from

her teaching philosophy. It is also likely that she believed that her specialised pedagogical knowledge could be a barrier in the change process and this feeling of professional uncertainty is identified in the literature (e.g., J. Anderson, 2012; Ball, 1996). However, the possibility of professional shame resulting from encouraging interaction with students may have positively influenced Lan's decision-making processes. Avoidance of professional shame seems likely to be inextricably linked with the idea of personal identity and interaction with others. Bartlett (2007), Bibby (2002), and Scheff (2000) highlight the importance of social interaction that may influence human actions. In particular, the shame Lan feared if change did not occur was perhaps not because her teaching had been called into question or that she was an incompetent lecturer, but rather it appeared to reflect her awareness of her professional identity or prestige before students or among other colleagues. In addition, this recognition seems to suggest that her professional identity may have been exposed to possible risk. As confirmed by Haworth (2004), professional risk appears to challenge a teacher's sense of self-efficacy in relation to change initiatives.

Lan's face-saving with regard to her professional prestige is remarkable in Vietnamese traditional culture where the teacher is highly respected and viewed as a role model (Breach, 2004; National Assembly of Vietnam, 2005; L. H. Pham & Fry, 2004b). In this regard, Lan's beliefs about the change process appear to be connected to the notion of symbolic capital, as shown in Bourdieu's (1991) practice theory. Bourdieu (1993) claims that symbolic capital is related to "the degree of accumulated prestige, celebrity, consecration or honour and is founded on a dialectic of knowledge (connaissance) and recognition (reconnaissance)"(p. 6). Bourdieu's reference to the term 'capital' implies that change benefits both lecturers and students. Such great advantage may encourage lecturers to expend more time, effort, and knowledge to reach their future goals or professional ideals. Lan was therefore not an exception in this respect. Rather, she was more likely to take up challenges or implement new teaching strategies.

Of the eight participating lecturers, only Anh expressed a slight hesitancy in his sense of self-efficacy before participating in the change process. He initially believed that it would be difficult if there were no support from the university or colleagues (IT.Anh.S2.I). It may be that Anh believed that the external or contextual factors were

more influential than his personal efficacy during his change process although he was the most experienced lecturer in his field (32 years of teaching). In addition, he appeared to recognise that effective change was dependent upon support at the institutional level rather than his own personal level of expertise. It can be argued that personal beliefs (Ajzen, 2002) reflected Anh's sense of self-efficacy, as noted by Bandura (1997).

However, as Anh's sense of self-efficacy increased over time, he recognised the need to challenge students to think and concentrate on the lesson (PM3.Anh.S2). The data show that Anh was aware that motivating students in his class to learn, reflected the nature of his personal efficacy as a Science lecturer. His growth in self-efficacy belief perhaps mainly came from the process of working alongside the researcher over two semesters in experiencing the change process in his Science classes. Change is also influenced by lecturers' experience and expertise which can inhibit their level of engagement in a change process or professional development, as highlighted by Haworth (2004, 2008). Thus, the need to have strong background knowledge and expertise in order to promote active learning was likely to be closely related to higher levels of self-efficacy, as confirmed by Borko and Putnam (1995) and Cripe (2009). In this regard, self-efficacy is a factor that drives Anh's changes in his actual practices.

Collaboration seems to have been a further key factor that enhanced Anh's professional sense of self-efficacy. His engagement in sharing experiences and practice may also have been an important step forward in Anh's belief about change as a major part of his teaching as a Science lecturer, reflecting his awareness of the nature of and the need for change in Science classes. Thus, his commitment to change is likely to be inextricably linked with his commitment to continuous professional development, as noted in Hargreaves (1994, 2005). Anh's changes are also consistent with Bandura's theory which suggests a link between personal efficacy and attributions (Woolfolk, 2007). Woolfolk indicates that a strong sense of personal efficacy may result in attributions that influence individuals' actions. It is likely that at high levels of engagement, Anh believed that by implementing new teaching strategies, students could be given greater opportunities to become more active and dynamic learners. His sense of self-efficacy may also indicate the quest for his personal growth, as stated in the preceding section on

passion. With regard to attribution theory (Heider, 1958), it could therefore be said that Anh's self-efficacy belief was powerful in influencing his decision-making processes.

The finding that self-efficacy beliefs may influence individuals to reach their goals by investing in greater effort, persisting in difficulties and sustaining resilience in trials, is consistent with several prior studies (Bandura, 1997; W. K. Hoy & Miskel, 2001; Kazempour, 2008; Pajares, 1996, 2008; Tschanne-Moran & Hoy, 2001; Tschannen-Moran & Hoy, 2007; Tschannen-Moran & Johnson, 2011; Zimmerman, 2000). However, there has been no research about the lecturers' self-efficacy beliefs specific to ESP teaching within the university context in a non-western country such as Vietnam. Therefore, the findings of this study contribute to the knowledge of how lecturer beliefs in this context may be attributed to their change initiatives and positive future actions. This suggests that once lecturers have strong beliefs in their task capabilities, they will be motivated to develop new teaching strategies that improve active learning of students in their Science classes, despite traditional views of the lecturer roles in Vietnamese society.

Agency drives change

All eight participating lecturers in this study believed that they were agents of change in the implementation process of change in Science classes. Agency involves the exercise of control over one's behaviour (Bandura, 1997; Holland et al., 1998). This belief perspective seems to address the connections between lecturers' identities and their roles as agents of change in promoting student learning (see Figure 5.2).
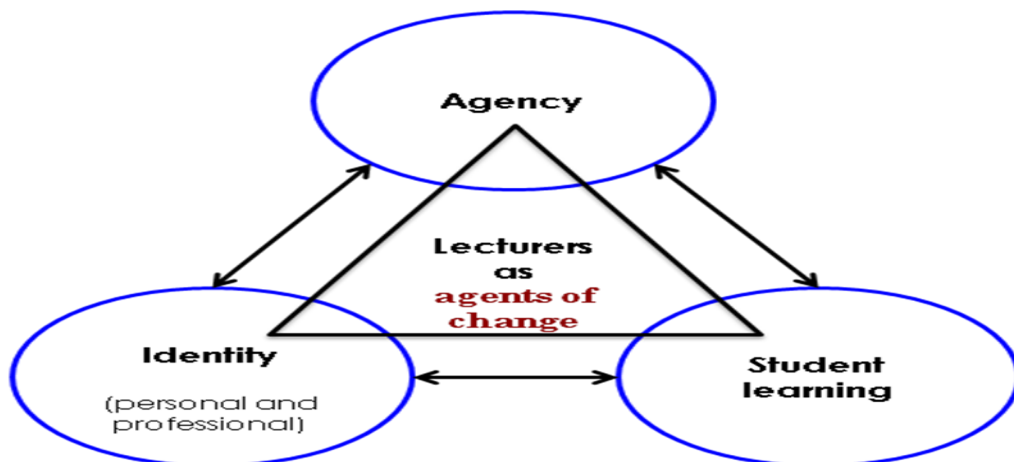

Figure 5.2 Lecturers as agents of change

Evidence of responsibility and roles with regard to change can be seen in the case of Truc who said, "*If I do not make any changes in my own ways, students will not learn much. I always want to help them to learn better and to be a role model*" (IT.Truc.S2.F). It appears that Truc held a strong sense of agency in relation to student learning. That Truc expected students to see her as a role model seems to reflect not only the construction of identity in relation to student outcomes but also her identity with regard to moral values she could perceive. This finding confirms Phan's (2008) claim that there is an inextricable link between identity and morality in her study on language teaching and identity. The notion of morality, as suggested by Phan (2008), indicates the role of the teacher as a moral agent in the teaching profession in Vietnam. Truc's belief thus corresponds to the Vietnamese cultural and educational philosophies and the goals for higher education, as stated in the Education Law of Vietnam (National Assembly of Vietnam, 2005). Since lecturers are always highly respected in society (see Section 2.2) they are expected to become models, as noted by Le Pichon-Vorstman (2008).

Morality is also related to the responsibility of the lecturers for student learning. Truc went on to describe herself as an *"agent of change"* (IT.Truc.S2.F). Truc's comments about her role suggest that she was well aware of being more than just a lecturer who only performs a given teaching task *per se*. Rather, she positioned herself as a person who has been committed to teaching and was ready to change her teaching strategies to provide students with better opportunities to learn. This finding is important because her belief about active learning was more likely to be driven by her personal and professional identity.

That Truc viewed herself as an agent of change also indicates she believed teaching to be a social practice. This practice is related to the exercise of human actions in coordination with others to achieve the social goals (D' eon et al., 2000; Lampert et al., 2011; Overgaard, 1994). From this perspective, Truc believed that what students learn and can do with their learning in real-life applications depends on the role and commitment of the teacher to her teaching practice. Her belief seems to have been rooted in the Vietnamese learning philosophy that indicates the interdependence

between an individual's academic success and value of social relationships within the community (see Section 2.2.1).

It may also be that her identity was influenced by her sense of self by interacting with her students. Such personal belief and interactions embedded within the professional context which address the link between teacher identities and agency are supported in the literature (Beauchamp & Thomas, 2009). As lecturers become more aware of their professional identities, they are more likely to have an increased sense of agency, and this in turn will influence their decision-making.

Cuc also revealed that she had a strong sense of agency in relation to his professional identity. She said, "*If I do not make any changes in teaching, I will be left behind and cannot improve my teaching*" (IT.Cuc.S2.F). It appears that Cuc viewed herself as a person who was ready to change. Her teaching philosophy of being an agent of change, as a Science lecturer perhaps came from the strong link between the teaching goals set for her and her strong sense of professional identity, which could bring about change in her teaching practices. Inherent in Cuc's view with regard to her role as being an agent of change was also the commitment she had to driving changes that allowed students opportunities to learn. It may be that her sense of self in enhancing student learning was closely connected to her belief about meeting the needs of students in her classes.

Hung's strong sense of agency demonstrated that his commitment and determination to make changes in his teaching profession was related to his role as an agent of change. He said, "*If the University does not provide any support, I will still make changes*" (IT.Hung.S1.I). It is noteworthy that he believed change was more likely to come from the lecturer himself rather than being contingent upon the institution. Unlike other lecturers in the present study, he believed change was a major part of his professional goals and closely linked with his identity as a Science lecturer. He said, "*Change is expected to perfect my desired goals - bringing students to a higher level. Moreover, seeing students enjoy working with their businesses is an intellectual capital for me*" (IT.Hung.S1.F). It is likely that his goals for student learning and their future work drove change. However, it could be argued that his personal agency and professional identity were structured and influenced by the interaction between social and individual

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factors, as confirmed by Bourdieu (1977) and Lasky (2005). In Bourdieu's view, "every confrontation between agents in fact brings together an interaction defined by the objective structure of the relation between the groups they belong to" (p. 81). Thus, while interacting with students, Hung's sense of self was likely to have been strongly connected to wider teaching contexts and conditions that influence his role as an agent of change.

The findings in this study therefore fit well with several prior studies that indicate the connection between teacher agency and identity (Beauchamp & Thomas, 2009; Campbell, 2012; Day et al., 2006; Holland et al., 1998; Priestley, Edwards, & Priestley, 2012; Sfard & Prusak, 2005; E. Wilson & Deaney, 2010). This connection may enable lecturers to become agents of change, as noted by Moore (2008). However, no studies have so far addressed the influence of agency and identity on lecturer roles in driving their practices. Therefore, the findings in the present study add new knowledge to the literature on how these two constructs, interwoven with perceptions of student learning, influence lecturer beliefs about themselves as agents of change in the change process.

Future self as a driver of teacher change

An interesting finding in this study is Hung's belief about the need for change in relation to his students' decision to enrol in an ESP paper. Hung revealed that change in teaching methods was important because students took this paper in order to study for higher qualifications in an English-speaking country (IT.Hung.S1.I). The students' desire for such academic achievement in terms of instrumental motivation (Gardner & Lambert, 1972) reflected their vision of future self, as confirmed by Higgins's (1987) self-discrepancy theory. Higgins contends that future selves refer to individuals' beliefs about who they expect to become. The future selves seem to suggest the potential for an academically vital strategic investment. Therefore, such investment can be seen as cultural capital (Bourdieu & Passeron, 1977) not only in a global context but also in Vietnam. This capital underscores a form of knowledge that may enable an individual to have a higher status in society. As he wished to make student learning goals and expectations happen, Hung was aware of their vision of their future selves as a driver of his change in teaching practices.

5.4.2 Perceptions of professional roles and teacher change

Professional roles include the influence of lecturer roles and the focus on pedagogical knowledge.

Lecturer roles

Lecturer beliefs about active learning were often associated with the role of the lecturer as a facilitator. Seven of the eight participating lecturers viewed themselves as facilitators of active learning (Anh, Binh, Cuc, Hung, Mai, Lan, and Truc), indicating that they only provided students with basic knowledge and required them to find further information. It appears that they came to understand that students were active participants in the learning process. One good example of this is Lan who said, *"I now act as a facilitator. I am not a sort of provider of knowledge to my students as I get them to think learning is their work and tell them to do things on their own"* (IT.Lan.S2.F). This comment suggests that Lan believed that she positioned herself as more of a facilitator or a *stage manager* (Ciaccio, 2004). In this role, Lan encouraged students to take responsibility for their learning, to be independent of her control, and to think about how to construct new knowledge actively during her class. The beliefs of these seven lecturers also indicate that they came to understand the strong link between the role of the lecturer as a facilitator and the encouragement of student autonomy (Benson, 2001; Cotterall & Crabbe, 1999; Holec, 1981; Littlewood, 1996).

In contrast to the other lecturers, Tin recognised that he acted as a controller and a facilitator at different stages of his lessons. Tin explained that his role as a controller helped shy students as only a few of them could speak English (IT.Tin.S1.I). In this role, it may have been that he saw himself more as a traditional lecturer transmitting information and knowledge to his students rather than a facilitator of active learning. There seems to be a strong link between his role and the traditional teaching identity in Vietnam that highlights the image of the teacher as a role model for students. However, he also viewed himself as a facilitator while students discussed or asked questions (IT.Tin.S1.I). Tin referred to these strategies as two inextricably interwoven roles. His data therefore seems to suggest that he had commenced a paradigm shift from moving students beyond traditional ways of learning assigned tasks to engaging them in an active learning approach in which speaking was his preferred choice. Tin also noted that

a focus on productive skills such as speaking had been neglected in his previous teaching practice.

It is worth noting that the lecturers in this present study reconceptualised their roles as facilitators and that they reflected on their practice and created a learning space for students. This fits with research studies by Briscoe (1991), Crawford (2000), and Grant (2003) who found that the subject of science is best suited to a student-centred active learning approach in which Science lecturers are encouraged to experience active learning strategies by taking facilitative roles. It is therefore a crucial finding because lecturers in this study underwent various levels of positive role shift, from traditional lecturing to a constructivist view of teaching and learning that fits with an active learning approach.

Pedagogical knowledge in driving teacher change

Lecturer beliefs about active learning highlighted the importance of pedagogical knowledge. Five of the eight participating lecturers believed that pedagogical knowledge in English to teach Science classes played an important role in creating an active learning environment for students (Hung, Mai, Binh, Tin, and Truc). There seems to be a strong link between the active learning strategies and their influence on student learning outcomes.

Lecturers came to see the value of pedagogical knowledge in different ways. Hung, for example, believed that active learning "*is a good opportunity for me not only* to *learn more about new teaching methods but also to gain other perspectives about teaching*" (IT.Hung.S1.F). It appears that as a result of his understanding of the practice context, he recognised the need to learn and to utilise new pedagogical knowledge in a wider context. For instance, the different teaching strategies Hung used, such as a questioning technique and reflective writing, seem to have helped him to teach students how to form their own ways of constructing new knowledge rather than merely receiving what was presented to them. In particular, Hung was aware that the pedagogical knowledge was important in encouraging student learning of science concepts using English and familiarising students with more speaking and critical thinking. Pedagogical knowledge in English for Science classes also helped him to feel more confident in initiating

change, to reflect on his changed practice, and then to continue new teaching strategies in his subsequent classes to align with the university policies with regard to teaching initiatives. From a professional perspective, Hung became more aware of the need to share his actual experiences and understandings of how pedagogical knowledge in English for Science classes is used. Such insights may have led him to collaborate with other academic colleagues within the department to promote the potential application of innovative teaching strategies that enable students across the science disciplines to become active learners in Science classes.

Mai had a different perspective when she was reflecting on how she experienced active learning strategies in her environment class: *"I learned how to monitor the class, check student work during group presentations as well as to make seating arrangements"* (IT.Mai.S1.F). Here, Mai appeared to stress the role of classroom management in pedagogical knowledge in English for Science classes. In contrast, Binh emphasised the need for teaching chemistry vocabulary in context as a means of relating new to prior knowledge through interactive teaching: *"They [Students] can use words with various meanings to fit in the context of their major"* (IT.Binh.S2.F).

Although Tin had good pedagogical knowledge in aquaculture, he noted that he initially lacked pedagogical knowledge in English for Science classes and this challenge seemed to influence his teaching practices. During the interview, Tin revealed that he was not an English language teacher but wanted to learn and experiment with active learning strategies to involve students in learning his aquaculture subject in the best way (IT.Tin.S1.F). Hence, acquiring relevant pedagogical knowledge in English for Science classes became a motive for Tin to effect change, as reflected in his growing sense of self-efficacy with active learning.

Truc associated active learning with seminar teaching facilitated by an adjunct teacher from an English-speaking country (IT.Truc.S2.I), and believed this co-teaching with a foreign teacher offered students opportunities to think about and discuss a particular learning topic in relation to problem solving. It is likely that seminars may help students to build on their lessons in relation to a higher level of cognitive processes. As confirmed by Bloom (1956), higher cognitive processes (e.g., analysis, synthesis, and

evaluation) involve critical thinking skills required of students during classroom discourse. It seems to suggest that active teaching was best suited to Truc's small class of 17 students because she was aware that small group learning could allow them to actively engage with the topic under discussion. This finding is well supported in the literature (e.g., Edmunds & Brown, 2010; McCrorie, 2010; Spruijt, Jaarsma, Wolfhagen, van Beukelen, & Scherpbier, 2012; Spruijt et al., 2013) suggesting that seminar teaching may provide students with a more productive and interactive learning environment within small groups. From these perspectives, the findings in the present study may lead the lecturers to an understanding of how seminars can be improved in subsequent classes.

In this study, the lecturer beliefs about the need for pedagogical knowledge in ESP support the work of Shulman (1986, 1987) who highlights that this type of knowledge links with that of teaching strategies to make subject matter accessible to students. While lecturers conceptualised the importance of relevant pedagogical knowledge to some varying degrees, their beliefs tended to reflect their professional identities. As discussed earlier, agency and identity are closely connected; therefore, once lecturer beliefs change, they are likely to reconceptualise or change roles and embark on experimenting with agentic teaching practices to promote student learning. As confirmed by Haney & McArthur (2002), Pajares (1992), and Rokeach (1968), lecturer beliefs and knowledge influence their decisions in driving change. The intersection of beliefs and knowledge on lecturer decisions is of vital importance because this sheds light on the reasoning underlying the choices of teaching strategies made by the lecturers. Findings from this study concur with prior studies that have revealed the impact of lecturers' professional identities and skills development on teacher change (Beijaard et al., 2000; Gilmore, Hurst, & Maher, 2009) and those that attribute teacher change and student learning to teacher identities, as noted by Bandura (1993) and Hoy and Miskel (2001).

5.4.3   Contextual factors and teacher change

Contextual factors that influenced lecturer beliefs about the change process include institutional policies and support, student English language proficiency levels, class size, the influence of student responses to active learning, and support for change.

Policies

A number of institutional factors related to lecturer change processes included policies and support to align with the Vietnamese government goals for higher education. Six of the eight participating lecturers (Anh, Binh, Cuc, Hung, Lan, and Truc) believed that institutional policies regarding time, funding, and classroom resources played an important part in making change happen. For example, Anh identified that these institutional policies could support the implementation of his new teaching strategies, thereby enhancing student active learning. During the initial interview, Anh revealed that the most important thing in the change process was the support from the university regarding class time and classroom resources (IT.Anh.S2.I). Likewise, Binh stressed the important role of the university in relation to making curricular changes, as evidenced in his comment, *"I think the University should provide the conditions for lecturers to design the program of study"* (IT.Binh.S2.I). Binh further noted the importance of leadership roles that colleges and departments could take in facilitating the curriculum policies and delivery, particularly through collaborative involvement.

In addition, Truc thought the contributions of the lecturers for their effective change initiatives or instructional reforms should be acknowledged or given intellectual rewards by the university (IT.Truc.S2.I). She believed such emotional support would act as symbolic capital that would encourage lecturers to continue changes for the common good. In Lan's case, she perceived that change depended largely upon the university in relation to availability of resources such as internet access and databases and that exchange with colleagues across the departments within the university for updated knowledge and articles provided by the Learning Resource Centre were needed (IT.Lan.S2.I).

While the above lecturers highlighted the need for change with regard to curriculum demands, resources and recognition of lecturers' work, Cuc addressed the need to change many aspects of her teaching practice to align with the university policies that linked student academic goals to societal demands. She said, *"It is very important to change the objectives, purposes, assessment, and teaching methods. Change takes place as it responds to the needs of students and of social development"* (IT.Cuc.S2.I). Cuc's

beliefs about change initiatives in her teaching practice suggested her awareness of the role of wider society on students' learning needs.

Student English language proficiency level

All eight participating lecturers indicated that the mixed level of student English language proficiency was a challenge that prevented them from experimenting with active learning strategies in the change process. Three lecturers (Binh, Cuc, and Lan) revealed that variations in student background English created a gap in their English as a direct consequence of the formal English programme provided to students while learning at high school in Vietnam. Although English is seen as the most important and popular foreign language in the national curriculum for secondary (years 6 to 9) to high school (years 10 to 12) (Ministry of Education and Training, 2006a), not all students could access and learn formal English over these seven years (years 6 to 12) without interruption. While some students had the seven full years of English study, other students may have had only three years of English instruction at high school. The big gap in student English language proficiency was also reported as being more challenging where simultaneously there were three or four levels of English proficiency among students and class system (e.g., Hung's case). The reasons for the big gap may have been the limited access to English classes, lack of high school teachers of English in more remote and rural areas, and insufficient resources and outdated training programmes.

The findings on the mixed level of student English language proficiency being a barrier to teaching concur with prior studies (Graham, 1987; Haworth, 2004; McLean, Murdoch-Eaton, & Shaban, 2012; Oliver, Vanderford, & Grote, 2012). These authors point out that lack of English language proficiency may influence not only student academic success but also teacher confidence to achieve effective teaching.

Class size

Two of the eight participating lecturers (Anh and Binh) claimed that class size was a barrier that prevented them from planning interactive activities in their classroom practices. As both Anh and Binh had more than 40 students in their classes, it was difficult for them to involve the whole class in applying new teaching strategies within

two 50- minute lessons per week. Binh further explained how class size influenced his classroom management in relation to lesson coverage, grouping students on task and feedback given to individual students. At university level, the size of class may still be an important factor. This issue is supported in a study by de Paola and Scoppa (2011) who indicate that if there are more than 20 students in a tertiary science class, this may lead to negative effects on student learning outcomes.

In contrast to Anh and Binh who had more than 50 students in their classes, Truc felt change was likely to be easier with her class of 17 students. She said, "*If there are more than 30 students in class, I will have to find other ways to fit the situation*" (IT.Truc.S2.I). It also seems to indicate her awareness that a smaller class size may have more advantage in exposing students to active learning tasks and frequency of interaction with the lecturer and other students than do large classes. This finding is well supported in the class size literature. For example, Crawford Camiciottoli (2005), Englehart (2009), and Lee (2009) state that small classes may result in more teacher-student verbal interaction than large classes and also influence lecture discourses. In Lee's (2009) exploratory study of delivering lectures, he defined a small class as ranging from 12 to 19 students and a large class having more than 100 students. Lee further indicated that small class lecturers tend to reinforce the rapport between the lecturer and students. The finding in this present study is also consistent with other studies (e.g.,de Paola & Scoppa, 2011; I. Y. Johnson, 2010; Kokkelenberg, Dillon, & Christy, 2008) that provide evidence that small class size had positive effects on student achievement at higher education. In particular, the present study adds to these insights by showing how the lecturers believed class size influenced their ability to implement and enhance active learning in Science classes at a university.

The impact of student responses to active learning

Lecturer beliefs about active learning were also related to students' affective responses to teacher change. Four of the eight participating lecturers (Cuc, Hung, Tin, and Lan) claimed that their students had been *motivated to learn* through speaking activities. These lecturers believed active learning that involved group work could encourage students, particularly even shy ones to speak more English in class. The lecturers further noted that active learning assisted students to feel more confident in doing other

interactive tasks. These beliefs are illustrated in the case of Cuc who reflected that active learning had fitted into her teaching. She said, *"They [Students] express more ideas, to speak more in English, and participate in more activities in a friendly and collaborative way"* (IT.Cuc.S2.F). It is likely that Cuc and other lecturers in the present study became more aware of the benefits of engaging students in greater participation in the learning process, and of increasing opportunities for students to interact with other peers. It seems that students were encouraged to build up the listening, communication, and interpersonal skills necessary for critical and meaningful learning.

Effectiveness in creating active learning spaces allowed Cuc to reflect on her changed practices, through which she could evaluate student learning and tailor her teaching pace and lesson contents. Hung also spoke of the importance of student positive attitudes related to a change in their learning conditions. However, he revealed that some students who did not have laptops could not use available multimedia. Thus, he assumed that if students were not resourced, it would be a challenge for him to get them to learn technical terms (IT.Hung.S1.I). His comments therefore suggest that students' ability to participate in class played a decisive part in the process of making active learning possible.

Findings from this study support several prior studies on active learning in higher education in science, which suggest that active learning approaches can lead to improved student attitudes (Armbruster, Patel, Johnson, & Weiss, 2009; Cavanagh, 2011; Faust & Paulson, 1998; Machemer & Crawford, 2007; Paulson, 1999; Prince, 2004). As a result of positive changes in student attitudes, teacher change may also come to be acknowledged as effective teaching. It appears that the teaching strategies used by the lecturers in this study, increased their confidence and motivation to make further changes in their future practices. These findings also are a reflection of evidence in the literature suggesting that the changes in belief and practice are mutually inclusive and that either can bring about change (e.g., Hargreaves, 1994; Richardson, 1994).

Support for change

The lecturers in the present study valued the types of support received during the change process that shifted their roles from traditional lecturing to a more active learning

approach. Based upon the interview data, their beliefs about support and the extent to which they valued support were examined. All eight participating lecturers revealed that additional support, and particularly the support from the researcher, had encouraged them to plan and make use of active learning strategies in their classes. However, while six participating lecturers (Anh, Binh, Cuc, Tin, Lan, and Truc) believed that change must be generated from the administrative level, such as the government, the university, and the department, the other two lecturers (Hung and Mai) considered that change was mainly driven by their own agency.

The literature suggests there is a strong link between the change process and the perceived locus of control (Rotter, 1966). One good example for this is Lan's case. She thought change could only take place if the institution provided suitable teaching aids (IT.Lan.S2.I). Thus, Lan believed change was related to the institutional policies and availability of resources, which reflects an external locus of control. However, Hung expressed his beliefs about change in relation to his strong agency due to his internal locus of control. He said, "*Change depends on teacher's competence because I am now the only teacher to design the paper*" (IT.Hung.S1.I). Therefore, change in his class activities was primarily generated by himself rather than at institutional or department levels. It appears that his internal locus of control and the responsibility he had for his own practice was inextricably intertwined. In addition, he seemed to have been committed to teaching and had a strong feeling of confidence in initiating and implementing new teaching ways that could enhance the active learning of students in his class.

The lecturer beliefs about support for change illustrate the external and personal domains that may exist in relation to their perspectives of change as growth in the change process. This finding fits with the research of Clarke and Hollingsworth (2002) who indicate that change involves a dynamic and multidimensional growth network (see Section 2.5.3). In particular, however, the present study further emphasises that many lecturers may see the necessity of support from other sources, beyond the individual.

The findings of this study extend Guskey's (1986, 2002) claims that change is a process in which lecturers need continued support, follow-up, and challenges. All participating

lecturers acknowledged the value of the support from working alongside the researcher through the change process. In particular, the support helped lecturers to institute changes to their current teaching strategies. For instance, sharing in a follow-up interview after participating in the study for two semesters, Truc said, "*I feel very happy to work with you to refine my paper objectives. I think this research is worth participating in and continuing with*" (IT.Truc.S2.F). Similarly, Hung acknowledged the value of the support that had engaged him in a process of modifying change in his class. He said, "*Through sharing ideas and experiences, after individual classes, with you, I learned useful tips for my future actions and modifications*" (IT.Hung.S1.F). It appears that Hung was aware that collaborative undertakings offered him an opportunity not only to learn teaching methods from the researcher (an English language teacher) but also to realise the need to integrate language learning skills into relevant content knowledge of the ESP paper. This is an important finding because it suggests that if lecturers change their beliefs, they will take new actions to effect change, as noted in the works of Richards, Gallo, and Renandya (2001), particularly if their beliefs are perceived as integral to professional growth as part of their career pathways.

Awareness of the support for change in lecturer practices has several pedagogical implications. Firstly, it appears that when lecturers are provided with timely and on-going support, they can sustain the development of changes to their teaching practices. Next, given this support, lecturers seem to be able to identify which teaching strategies are pertinent to their individual current practices. Another crucial implication is that changes in beliefs and reflective practices are not subject only to or imposed only by top-down policies, but are also likely to be grounded in both lecturer personal beliefs and the socially situated contexts in which they practice and learn. As suggested by Hunsaker and Johnston (1992), lecturer beliefs are embedded in social factors, which may lead to changes in actions. Thus, the more supported lecturers feel about changing their practices, the more motivated they may feel, and the better the quality of instruction that is likely to be created.

The present study seems to have allowed the participating lecturers to not only implement changes to their teaching practice but also to recognise the constructive benefits of change. This recognition implies that as the lecturers embark on change, they

may benefit from collaboration with others to improve teaching situations, as noted by Fullan (2007) and Hargreaves (2005). In such collaborative relationships, the lecturers will investigate fertile ground and exploit its resources to learn and grow through new practices and initiatives. Ultimately, however, change not only comes from the external support but also from the drive to be agents of change (Burns, 1999). In this study, this drive, captured in their initial recognition that change was needed, enabled the lecturers to become more responsive to increased expectation for curriculum and instruction innovation and for high quality education within the tertiary context (B. H. Nguyen, 2013).

5.5 Towards a theoretical model of teacher change

This chapter has discussed the findings of the eight lecturers who experienced the change process within the context of Science teaching at a Vietnamese university. Student-centredness and classroom interactions were identified by all participating lecturers in the present study regarding lecturer beliefs about active learning and the impact of these beliefs upon their teaching roles. Lecturer beliefs about the importance of the role students played in the change process marked their shift from traditional lecturing to an active learning approach. This paradigm shift resulted from the process of collaborative planning and experiencing the learning benefits of active learning strategies. Active learning was also related to the inclusion of positive classroom interactions through teaching strategies employed by participating lecturers while working with the researcher. Such belief about active learning seems to suggest a move from a teacher-directed style to the responsibility for learning being placed on students. In so doing, the lecturers in the present study became aware of their role change from knowledge providers to facilitators of active learning. Participation of students also suggested a positive view of teaching experience. It could be said that this paradigm shift might challenge lecturers' roles and their hierarchical position over the students. However, this experience seems to counter the view of change as a hard and complex, as indicated by Fullan and Hargreaves (1992). Lecturers found it easy to change when motivated by both policy change and students' increased interest in active learning. In particular, these lecturers saw that when students were given greater opportunities to

interact with other peers and their lecturers, they were likely to become more active and autonomous learners in constructing new knowledge critically and meaningfully.

The lecturers in the present study experienced their change process through implementing speaking and writing activities. The implementation process demonstrated the consistency between lecturer beliefs about active learning and their practices. This change was evidenced in the data from classroom observations, interviews, and planning meeting messages. These lecturers believed that speaking activities such as grouping students, questioning, brainstorming, concept mapping, and guided practice effectively fitted into their practices. These interactive strategies increased student engagement, interactions, critical thinking, and speaking in English while students had not previously been taught or required to do so. It is worth noting that the lecturers in this study began to view the need to change their practices as challenges or learning opportunities although these were imposed by external policies. Students' reflective journals were also seen as an effective teaching strategy. The lecturers employed these journal entries in order to not only improve students' writing skills but also to assist them in reflecting on their changed practices for further trials and professional learning and growth.

With reference to the factors that influenced lecturer beliefs about change, all lecturers in the present study appeared to have developed strong beliefs underpinned by personal, professional roles, and contextual factors. Across the cases, lecturer personal beliefs were seen as the predominant determining components that encouraged them to change their teaching practices. A number of lecturers in this study conceptualised the need for change as a passion, suggesting a strong link between their beliefs about the change process and the commitment to driving change to improve their practices. Although there were varying degrees of self-efficacy beliefs with regard to making changes among lecturers, it was evident that a strong sense of self-efficacy in Science teaching enhanced the change process.

Different levels of self-efficacy beliefs included those about lecturers' competence, the responsibility for student learning, and their level of engagement in relation to personal learning and professional growth. Lecturer beliefs about being agents of change

appeared to result from the relationship between agency and their identities, and were also constructed through interacting with students. Lecturer beliefs also reflected symbolic values.

Professional roles were associated with the traditional roles of the lecturers in this study and the focus on pedagogical knowledge. These lecturers became more aware of the need to reconceptualise their roles as facilitators of active learning rather than as traditional lecturers. This remarkable shift from a teacher-directed to a student-centred approach indicates a positive experience that allowed students to become more autonomous and independent learners. In addition, the participating lecturers believed that pedagogical knowledge played a vital role in providing students with more active learning. These lecturers valued this type of knowledge because it helped them to facilitate student learning in a wider context and ultimately increased the potential for modifying and communicating that knowledge to their future teaching practices. Contextual factors such as policies, student English language proficiency, class size, and student responses to active learning appear to have increased lecturers' understandings of their practices and the need for change, thereby helping them to reflect on their practices and seek new ways of teaching in their Science classes. During the implementation of the change process, the lecturers in this study believed that support for change was of crucial importance. In addition, the support from working alongside the researcher allowed them to develop and employ new teaching strategies that enhanced active learning in their Science classes.

5.6 The Teacher Change Model for Science Classes

The Teacher Change Model for Science Classes was developed in the present study (see Figure 5.3). This includes three integrated components that were found to contribute to the enhancement of active learning of students in Science classes: personal factors, professional factors, and contextual factors.
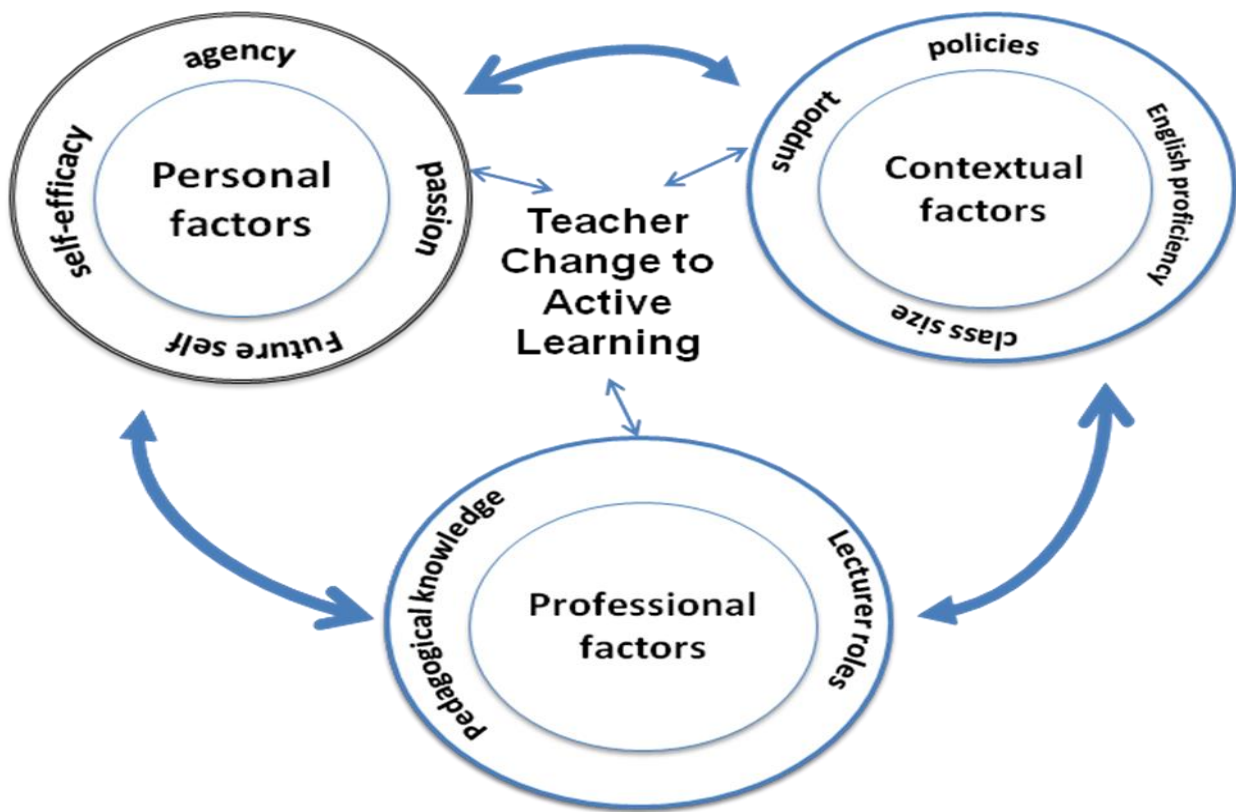
Figure 5.3 The Teacher Change Model for Science Classes

Personal factors include lecturers' passion, their sense of self-efficacy, their view of themselves as agents of change, and their vision of students' future selves. Professional roles include the influence of lecturers' roles and the focus on pedagogical knowledge. Contextual factors include policies, class size, student English language proficiency, and support for change.

With regard to the personal beliefs, lecturers expressed their passion in making changes to improve their existing teaching practices and to enhance the student learning of content knowledge through English in a tertiary context where the Science lecturers and language are Vietnamese. The findings of this study also show that lecturers revealed their strong sense of self-efficacy that influences their choices of teaching strategies through vicarious experience over an extended period of time. Influenced by the Vietnamese cultural and educational philosophies, the lecturers were aware of their roles not just being lecturers before their students. Rather they viewed themselves as agents of change in relation to their professional identity and student learning.

Moreover, the need for driving changes in lecturers' practices came from students' vision of their future selves.

Awareness of the importance of belief change were found to be interrelated to the professional roles Science lecturers played in their teaching practices. Lecturers' role changes and the need to use pedagogical knowledge of English skills in their classes influenced how students learned. The data show that the lecturers shifted their roles from a teacher-centred approach that was traditional in the Vietnamese context to being a facilitator of an active learning, student-centred approach. This paradigm shift encouraged the lecturers to construct and generate knowledge of English skills to communicate new knowledge to their students.

As a result of the intersection between lecturer beliefs about changes, the context, and their professional role shift, this model provides an illustration that links all three components with teacher change. The lecturers articulated how their beliefs about support for change, which were influenced by positive aspects such as government and institutional policies, but also by inhibiting aspects such as class size and student English language proficiency. The Science lecturers in this study were supported to make changes to their teaching practices through collaboratively sharing, developing, and implementing more active learning strategies to present new knowledge to their students in critical and meaningful ways.

During the change process to active learning, the participating lecturers came to recognise the benefits of change. In particular, they acknowledged the value of collaboration and participation with the researcher which assisted them to be responsive to the demands for change in their current teaching practices and making a commitment to enhance their own professionalism in a more global context.

The Teacher Change Model that resulted from this study provides a theoretical framework to examine the dynamic interaction of factors that may influence lecturer beliefs about change to active learning in a Vietnamese university. This model is strategically important if lecturers are to be supported in the process of teacher change. This model may also provide policy makers (e.g., institutional leaders and educational

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administrators), and Science lecturers with good insights into the changes in lecturer personal beliefs and their professional roles.

The following chapter will present the implications for theory and methodology to enhance the nature of teacher change in Science education. Recommendations for future research to extend the important findings of the present study are made and the researcher's concluding comments revealed.

CHAPTER SIX
CONCLUSIONS

6.1 Introduction

This chapter summarises the key findings from a qualitative action research study that aimed to investigate teacher change in Science education at a Vietnamese university. The summary is followed by discussion of the implications and recommendations for future research. Finally, the chapter concludes with the researcher's reflection on the action research journey.

6.2 Key findings

A summary of key findings follows, providing insights into the lecturer beliefs about active learning and change factors.

The participating lecturers believed that active learning involved student-centredness. In particular, their beliefs about the importance of student-centred active learning included consideration of student interest or feeling of confidence; learner autonomy; learning by discovering; and problem solving. Their beliefs about active learning therefore seem to have guided changes to their teaching strategies to facilitate student active learning of science concepts. The lecturers demonstrated their heightened understanding of the need to place students in the centre of the learning process.

The lecturers also identified that the inclusion of active learning activities allowed students greater opportunities to interact with the lecturers and other peers. In addition, the lecturers believed that through interactional patterns, students became more motivated and involved with the lecturers to co-construct new knowledge of Science education in meaningful and critical ways. These lecturers also believed that providing students with a platform to exchange their ideas and to better understand their lessons further could stimulate active learning and learner autonomy.

The beliefs the lecturers had about active learning were confirmed by the interview data and their reflections on the change process in planning meetings. The present study shows that their beliefs about active learning not only encouraged the lecturers to implement new teaching strategies but also enabled them to become more aware of the need to engage students in greater responsibility for their own learning.

The lecturers changed their teaching strategies by experimenting with active learning. The observed changes were collaboratively developed through the planning meetings, and then implemented in lecturers' classes. The lecturers believed that these changes influenced how students learned. Effective use of interactive activities, particularly involving speaking and writing, was in line with their beliefs that active learning was related to student-centred and classroom interactions. The lecturers also believed that the speaking activities such as grouping students, questioning, brainstorming, concept mapping, and guided practice enabled students to become more autonomous learners. Furthermore, students written reflections assisted the lecturers to improve their subsequent lessons.

The lecturer beliefs that active learning strategies had fitted effectively into their teaching were often as a result of observations of their student learning. Active learning strategies also reflected the lecturer heightened awareness of the need to move students beyond traditional ways of learning assigned tasks. While implementing the change process, the lecturers positioned themselves as facilitators rather than traditional lecturers. They believed that students, if provided with more learning space or a forum to voice their ideas, could actively participate in co-constructing new knowledge in Science classes through increased interaction with their lecturers and other peers.

Change was driven by a complex intertwining of factors: lecturer personal beliefs, their professional roles, and contextual factors.

With regard to lecturer personal beliefs, the first key factor was *passion.* It appeared to be an important motivating change factor identified by most of the lecturers. Passion lies at the heart of what makes effective teaching (Day, 2004; Fried, 1995). In this study, passion for teaching linked lecturer responsibility to their commitment to change.

Secondly, some lecturers positioned themselves as *agents of change* as a result of their strengthened sense of *self-efficacy*. For example, the vicarious experience of collaboration with the researcher allowed these lecturers to implement new teaching strategies in their classes.

The third key factor that influenced lecturer personal beliefs about change was recognition that their career pathways were part of a wider community-based social practice. They engaged in actions designed to achieve communal goals (D' eon et al., 2000; Lampert et al., 2011; Overgaard, 1994). Their professional *identity* and *agency* reflected the Vietnamese learning philosophy of a reflexive relationship between personal advancement and social progress.

The final factor that influenced one of the lecturer personal beliefs about change was about face-saving. As far as professional prestige was concerned, Lan was motivated to change because she wished to save face in front of her students. This reflected particular cultural norms and revealed the link between her personal and professional identity and interactions with students. Her belief about the change process can be related to Bourdieu's (1993) notion of symbolic capital. Such symbolic capital in relation to her professional prestige may encourage her to devote more time and effort to make use of new teaching strategies to improve practice.

Professional roles that influenced lecturer beliefs about change included their roles and pedagogical knowledge. The participating lecturers came to view themselves as facilitators of active learning. This belief indicates that they understood the strong link between the role of the lecturer as a facilitator and encouraging student autonomy. Although the lecturers conceptualised the importance of pedagogical knowledge differently, their beliefs show that pedagogical knowledge influenced their choices of teaching strategies, which in turn promoted active learning.

Contextual factors also influenced lecturer beliefs about change. These were policies, student English language proficiency, class size, student responses to active learning, and the researcher's support for teacher change. Nonetheless, the lecturer concerns did not stop them considering student learning goals and needs, and altering their role to be

facilitators of active learning. The lecturers indicated that students responded to their new teaching strategies as a positive learning experience. It appears that the teaching strategies the lecturers in the present study used increased their confidence and motivation to make further changes in their future practices.

In summary, the nexus of lecturer personal beliefs, their professional roles, and contextual factors identified in the change process, influenced their beliefs about change and the choices of interactive activities to enhance active learning in their Science classes.

Attention now moves on to implications for theory in relation to teacher change.

6.3   Implications for theory

This section discusses the theoretical implications of the present study with regard to the nature of teacher change, lecturer beliefs, and the holistic theoretical model of teacher change in Science practice contexts.

The findings of the present study contribute to the teacher change literature with regard to Science teaching at a tertiary non-western context, particularly in Vietnam, in several ways. This study deepens understanding of the nature of teacher change and its close connection with a process of learning and professional growth. The lecturer reflections on the change process provided the researcher with insights into the impact of lecturer beliefs on their decision-making processes. In addition, the data suggest that teacher change is a positive learning experience not only for Science lecturers in the present study but also for lecturers in other science disciplines. The potential to implement new teaching approaches has expanded the theory of change in science teaching. By understanding the benefits of changes in practice, more lecturers are likely to change their beliefs about active learning and enquire into the processes of action and reflection through collaborating with others to improve their own teaching practice and continue changes. In addition, other researchers are likely to participate in or to promote teacher change through professional development programmes or initiatives. As the present findings indicate that the intersection between beliefs and changes in practices

influenced student learning, it is essential to encourage lecturers to change their practice beliefs, which in turn, will provide students with a more active learning space or environment.

The Teacher Change Model for Science Classes developed in the present study can act as a theoretical model for lecturers to gain insights into their own beliefs, professional roles, and contextual factors, about changing teacher knowledge and practice. This model provides a comprehensive description of the relationships between beliefs and other aspects of practice in the change process. In addition to passion, lecturers' sense of self-efficacy identified in the Teacher Change Model for Science Classes can be a motivating factor that contributes to driving agency. Teacher change can also be conceptualised as a process of personal learning and professional growth in relation to social practice. Understanding these dynamic relationships within this holistic model provides different perspectives on the nature of teacher change.

6.4 Implications for methodology

This qualitative participatory action research approach illustrates how action and change can occur in Science classes in Vietnam. This research methodology also allowed the researcher to investigate how lecturer personal beliefs about the change process impact on their agency. Action research enabled the lecturers to develop their praxis through practice (Carr & Kemmis, 1986). This informed action is also documented in the literature (Carr & Kemmis, 1986; Elliott, 1991; Kemmis & McTaggart, 1988; McNiff & Whitehead, 2010; Noffke & Somekh, 2013).

The findings of the present study provide lecturers with opportunities to reflect on their own practices and enhance their beliefs about the capacity for change over time. As a result of the impact and benefits of change, more lecturers and stakeholders may move themselves forward by participating in qualitative action research projects or initiatives on a large scale. In addition, the action research process experienced and managed by the lecturers in this study addresses the need and the potential for developing a culture of collaborative or participatory action research among their academic colleagues and science lecturers across the disciplines within the university. Through collaborative

undertaking or community of practice, as noted by Wenger, (1998; 2000) lecturers will feel more empowered to learn from other academic colleagues and to grow professionally.

The investigative tools such as participant observations and planning meetings used in this study motivated the lecturers to engage with changes. Insights into the value of collaborative undertaking with the researcher opened up opportunities for other lecturers and academic colleagues to understand the nature and effectiveness of teacher change and then to shift their roles from traditional lecturers to facilitators of student learning. Research on teacher change in science education, through action research projects, suits well with the Vietnam's government policies and the university imperatives to improve teaching and learning.

6.5   Implications for pedagogy

Teaching and learning are interwoven aspects to this study for both lecturers and students. The change process experienced by science lecturers in this study is likely to provide other lecturers and stakeholders with opportunities to examine the benefits of change, the capacity for change, and in particular insights into the nature of change using action research approach.

Through the qualitative research approach, lecturers were provided with opportunities to make more effective changes and to learn new ways of teaching their subject matter through English. This learning allowed lecturers to enhance their professionalism and pedagogical knowledge in English while endeavouring to improve their own current practices and to understand the importance of role changes in the long run. The need to learn and grow has been shown to be an active process for both lecturers and students who are involved in changes to knowledge, beliefs, and practices. By recognising the importance of the need for change in relation to active learning, lecturers appear to be more ready to learn other aspects of practice they perceive to be important and to make changes in their future practices that are relevant to their teaching contexts.

The effectiveness of using strategies to promote speaking and writing activities, as shown in the findings of the present study, not only allowed the lecturers to reflect on their practices but also empowered them to sustain changes by seeing the benefits of collaboration with the researcher as an English language teacher. Ultimately, sharing positive views of changes and of experiences of the change process may encourage more lecturers in other fields across the university to participate in investigating what is happening in their classrooms and to see what changes are worth making. In particular, the lecturers may be motivated to try new teaching strategies to promote active participation and interactions of students in Science classes.

In response to the curriculum and instruction innovation set by the Vietnamese goals for quality of education, the integration of English skills and the teaching of Science concepts is likely to become an increasingly demanding need for Science lecturers. Both students and lecturers need support to move beyond their current learning and teaching practices in particular science areas. However, it may be that only those who feel dissatisfied with the current teaching and learning practices are likely to take up challenges. In particular, lecturers will be required to demand themselves to work more in order to ensure change as being indispensable part of their professional lives as real and responsible lecturers.

Finally, this study shows the importance of policy makers and educational administrators focusing more on how to provide Science lecturers with better resources and importantly sources of support. Support for change will then be a reciprocal process among lecturers, engaging them in understanding how to use new knowledge pertinently as part of a wider global context.

6.6   Limitations

Some limitations of the present study included the researcher's subjective views, the relatively short time period, and the nature of the sample size. Further investigation would be useful in the future research into the impact of teacher change.

The possibility of bias in this research was addressed by examining the researcher's subjectivity. This subjective view (Bogdan & Biklen, 2007; Glesne, 2011; Herr & Anderson, 2005) may have resulted from the ways the researcher used his own experience and understanding to involve lecturers in the research, to interpret and report on the findings. However, the data gathered from interviews, observations, and planning meetings over time, as illustrated in detail in Chapter Three, provided both breadth and depth of the impact of change on lecturer practice. It is possible that the findings of this study might have been more objective if surveys of student perceptions of the change effects towards their learning of English for their specialised paper had been conducted.

Another limitation of the study is the relatively short time period over which lecturers are experimenting with new teaching strategies. Although this participatory action research was conducted through three semester time periods, only two of the eight participating lecturers could participate in the change process for two semesters. This was due to the fact that the ESP paper, an optional paper that students could choose to take from a range of their specialised papers was not provided in the semester that followed. Moreover, the minimum class size must be 20. However, the main target of this action research was to investigate lecturer beliefs about active learning of students in Science classes and increased awareness of the importance of implementation of more interactive activities over an extended period of time in order to promote student learning, which aligns with their beliefs about teacher change.

The third limitation of the study is its small sample size and thus the generalisability of the findings may be limited. The present study explored the impact of change on the eight lecturers who taught their contents through English and thus this impact may be only applicable to particular lecturers, departments, or colleges within a university under investigation. However, as qualitative research involves small samples (Cohen et al., 2011), the insights into lecturers' change processes through this study were worthwhile.

6.7 Recommendations for future research

This study has highlighted the possibility of teacher change in Science classes within the tertiary context in Vietnam. In order to enhance understanding of the benefits of action research in a wider community of practice, the present findings suggest a need for further research.

The present study used qualitative data sources such as interviews, observations, and planning meetings to investigate how Science lecturers experienced the change process in line with their beliefs about active learning. Future studies could include surveys to gain student feedback on how the change process influenced their learning. This addition would provide deeper understanding of the impact of change.

Action research in this study involved a dynamic and integrated process of developing, implementing, reflecting, and planning new actions for teacher change over semester time points. In order to gain more in-depth knowledge about the complexities of change effects, studies over a longer period of time would further validate the sustainability and transferability of teacher change while providing students in Science classes with active learning.

The findings from the present study on teacher change coupled with lecturer beliefs about active learning are encouraging and could be confirmed by a larger sample size for validity of the findings. By involving more lecturers in investigating their own practice at the operational (classroom) level, different perspectives may shed light on how their beliefs would influence their choices of teaching strategies in similar teaching contexts.

6.8 Practical implications and recommendations

The following section provides implications and recommendations for ESP lecturers, Science lecturers, and policy makers.

Implications and recommendations for ESP lecturers

The present study suggests that the lecturers were committed to change while working alongside the researcher in developing and utilising active learning strategies. This study reflects the nature of teacher change as a process of learning and growth (Flores, 2005; Richards et al., 2001). The lecturers were encouraged to try new teaching strategies in order to improve their knowledge and practice. Their professional roles are also valued if they are engaged with change. Furthermore, lecturers can discover the worth of collaborating with others through participatory action research.

Based on the present findings, it is recommended that ESP lecturers:

1. conduct research into how active learning strategies change their existing practices;
2. design syllabi that integrate language skills with subject content knowledge; and
3. collaborate with English language teachers to identify what aspects of practice are needed to improve in order to enhance active learning.

Implications and recommendations for Science lecturers

Working with the researcher allowed the lecturers in the present study to build on new knowledge of their specialised subject matter and pedagogical knowledge in English. Not only did they develop their professional knowledge but they also became open to opportunities to share their views of actual experiences gained from this study with other Science lecturers. In doing so, they can promote further teacher change in ESP within the department and other academic units at a university.

Based on the present findings, it is recommended that Science lecturers:

1. seek opportunities to share ideas, experiences, and expertise with other colleagues about how to motivate students to learn actively; and
2. work with English language teachers to develop integrated ESP syllabi and teaching materials.

Implications and recommendations for policy makers

Awareness of the nature of lecturer beliefs about active learning raises some pedagogical implications for policy makers. First, it appears that once these lecturers had strong positive beliefs about active learning, they changed their practice and through that, their beliefs.

It is therefore recommended that:

1. policy makers should focus more on how to provide lecturers not only with demands for change, sufficient time, or even better resources, but also with sources of support to ensure change occurs and becomes part of lecturers' personal and professional growth.

Second, lecturer positive beliefs about change could heighten their self-efficacy through vicarious experience and thus motivate them to develop more active learning strategies.

2. Lecturers should be encouraged to conduct research into improving their practice by observing how other academic colleagues teach their papers.

Third, as lecturers' sense of self-efficacy and their professional roles are connected, these personal beliefs influenced and informed their future actions.

3. Lecturers should be provided with professional development opportunities on ESP practice to reinforce their beliefs about change.

These change initiatives can create networks between English language teachers and Science lecturers who teach their subject matter through English. Facilitating the creation of such networks would allow the lecturers to share experience, initiate new strategies, and use their personal theories of teaching to provide students with a more active learning space.

The present findings suggest that the integration between lecturer beliefs about change, their professional roles, and contextual factors influenced the teacher change process. This study therefore confirms Guskey's (1986, 2002) claim that change is a process in

which lecturers need regular feedback, continued support, follow-up, and challenges, and that changes in one domain can affect other domains, as described by Clarke and Hollingsworth (2002). Through external support for change, the lecturers were able to implement new teaching strategies and reflect on changes to their practices and the outcomes for their teaching and the active learning of students.

4. Policy makers need to promote teacher change by advocating co-teaching in English for Science classes with English language teachers.

The potential for change towards active learning will move lecturers forward as it engages them not only in learning new knowledge critically and independently but also in understanding how to use that knowledge pertinently in a wider context.

5. Lecturers should be involved in experimenting with new teaching methods.

6.9   Concluding comments

This thesis contributes to the teacher change knowledge, involving lecturers in integrating English skills with subject content as a result of working with the researcher. In understanding the need to place students in the centre of their learning, the lecturers changed to view themselves as facilitators rather than traditional lecturers. Teacher change in the present study was found to be a dynamic and collaborative process. This change process was dynamic in that the stages of developing, implementing, reflecting, and then planning further actions occurred in a cyclical way.

Teacher change is also a complex process, not an overnight teaching experience or merely modifying teaching practice for the sake of change. Rather, over semester periods, the implementation of active learning strategies reflected the intricacies of lecturers' strong beliefs about change and increased awareness of the benefits of change. In particular, in the participatory process of action and reflection, the lecturer beliefs about active learning were consistent with the ways they changed their practice. The insights that these lecturers had were developed through observations, interviews, and planning meetings.

The Teacher Change Model for Science Classes developed as a result of this study provides a holistic theoretical model of the intertwined linkage of lecturer personal beliefs, their professional roles, as well as contextual factors. The three key aspects of this model may inform a new mechanism for interactive changes that promote the quality of Science teaching and learning. This holistic model also serves as a base for further research to help lecturers and other action researchers to understand that change comes from within lecturers themselves, and results in professional growth and changed roles. Lecturers are agents of change and should be supported to strategise actions for change in a wider context of Science teaching to enhance the active learning of students.

This thesis resulted from my keen interest to help Science lecturers to change their instructional approaches using English language skills. During my learning journey for a PhD degree and through working alongside the lecturers, I have seen how both the researcher and the lecturers learn from each other's experiences, treasure the benefits of change, and foster professionalism. Positive change effects gained from the action research journey have accumulated during my research and professional experience. In addition, this reflexive learning journey has enhanced my understanding of the relationship between lecturer beliefs and their commitment to change.

As a facilitator and collaborator in the action research process, I have learned that the lecturers' willingness to experiment with new teaching strategies enabled changes to occur in their thinking and their practice. This insight inspires me to continue research into the improvement of Science education practice. I therefore believe that action research is a powerful tool for my future work. As a lecturer researcher, I will discover other aspects of teacher change and conduct further research into the potential for effecting interactive teaching in the science area.

Change to more active learning not only comes from the top down policies or external pressures but it is also rooted in personal belief and intrinsic motivation. The following quote by one participating lecturer reflects this strong belief about passion for change linking career pathway and professional growth:

I teach this paper because I really enjoy doing it. Change is like 'food for the soul' and provides the impetus for me to learn and upgrade my professional knowledge (Hung).

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Appendices

Appendix 1 Initial interviews with science lecturers

The existing curriculum

Can you tell me one type of classes you are teaching? How long you have been teaching this class and the programme in which this class is embedded?

Can you tell me what positive principles that you have taken in your teaching so far?

Teacher's concerns

What concerns you most about the existing curriculum for ESP students?

Students' expectation

What do you think your students expect to learn from the course you are teaching?

Instructional skills

What skills or strategies have you used to help your students learn?

What do you use now and why?

Teacher's role

In what ways do you perceive your role as a teacher (a facilitator, a helper, a guide)?

What factors support your teaching practices/professional development (institutional/ provincial resources, external programmes, government policies)?

What factors might hinder your change in practice (peer / internal pressures?

Active learning

If you could do one thing to help your students learn better, what would you change in your current teaching practice?

Have you ever used active learning in your class? Do you think it is helpful?

What would help you to take a more active learning approach?

The need for change

How do you perceive the need for change to develop your course design for ESP students? Is it important to plan change?

How important are changes in your practices toward student learning? Rate the level of importance based on the scale of 1 to 4 (1 = not very important, 2 = little important, 3= quite important, 4 = very important).

What sorts of change are being required to achieve the university strategic plan/ direction in relation to curriculum development?

Support

What types of support do you need to enable you to make curriculum change?

How will that help you to change your practice?

Can you still change practice without that? Are there any limitations? What are they?

Appendix 2 Follow-up interviews with science lecturers

The action

Can you tell me more about any changes you have made in your teaching since we last met? Why did you make change/ not make change over this time?

Teacher's concerns

You have made a number of changes to your practice in recent years. Do you have any ongoing concerns about implementing change? Do you have many/ any more changes planned? Explain, if yes. How will you know when you have changed enough?

Instructional skills

What skills or strategies have you used to help your students learn? What do you use now and what don't you use over time? Can you tell me more about these issues and why?

Teacher's role/ role possibilities (collaboratively)

In what ways do you perceive your role as a teacher currently and what are your future ideals?
What specific roles have you utilized most? Or do you think effective? When? And why?

Students' reactions

How do your students respond to your new instructional strategies/ tasks/ assignments? (or the new roles you have taken so far)
What do you think students see as good teaching?

Active learning

How has active learning fitted into your teaching up to this time if at all? Can you tell me more about any active learning activities you have implemented so far?

Change effects

How do you think changes in your practices influence student learning? Did they enhance/ promote student learning? Can you explain how (if yes)? Can you explain why not (if no)?

Support

What types of support do you need to sustain on-going change in your teaching practices?

Can you tell me at what stages of change you need support?

What factors support your change in practice?

What factors might inhibit your change in practice?

Appendix 3 Sample Interview Transcript

SAMPLE INTERVIEW TRANSCRIPT

Date: 14 February, 2011
Lecturer: Nguyen Van Anh
Venue: R.01/ School of Education
Duration: 60 minutes

Researcher (R): First of all, thank you for your agreement to participate in the interview. Now, I would like to tell something about my objective of my action research and that of my interview. I am going to conduct the action research regarding teacher change in ESP classes. This interview aims to

    a. To find out the teaching context that I seek perspectives from your experiences, concerns and views of your students' expectations,
    b. To know about the need for change in practices that you are conducting
    c. To collaborate with you to develop a plan of action for change.

So, I'd like to ask you 8 categories related to ESP classes. Can you tell me about the class you are teaching?

T: Nowadays, I deliver lectures to advanced course of biotechnology and another course is micro-biotechnology.

R: Ok. How long have you been teaching this class? In which programme is this class is embedded?

T: Actually, I have been teaching the same class but not this class for many years. I remember that I taught this type of class ten years ago. And this semester I give a lecture for one class.

R: So, what kind of class you are teaching now? Is it also micro-biotechnology class, the different or the same class?

T: Actually, I teach the same class.

R: So, can you tell me how many hours or periods do you teach for this class?

T: Due to the programme, every week I only give 2 periods for one class.

R: So within the semester of fifteen weeks is that right? In a week, how many weeks will you teach?

T: 2 periods per week, so 30 periods (hours) for fifteen weeks.

Category 1

R: So, can you tell me what positive principles that you have taken in your teaching so far?

T: So, what do you mean by positive principles?

R: I want to mean that in your teaching principles, what students may get or will get from your teaching?

T: Well, due to our curriculum, we give lectures for the sophomore students.

R: So you mean second- year students?

T: Yeah. They follow the bachelor degree of bio-technology or that of microbiology and the most important principle for this type of students is that they would study what is called special language use for their technology such as for their thesis by the fourth year. We will provide the skills for their reading, literature for other related subjects such as biotechnology, microbiology, molecular biology, food processing etc.

R: So, English will play a very important role in your teaching and students will get so many types of benefits for their subject matters. So, I would like to move on the second category.

T: Yes.

Category 2

R: So, what concerns you most about the existing curriculum for your students?

T: The biggest concern about the ESP curriculum here is that we have to teach students to comprehend through reading, and later on, they need to use their own knowledge in order to write theses by the fourth year. They should get enough English vocabulary, grammar, and they should know very well how to read and how to understand scientific English publications, for example, scientific journals such as biotechnology, reviews, etc.
R: What do you mean scientific journals? Are students required to read or analyze scientific journals while they study?

T: They should read and also analyse them. Some students were at advanced English and others at elementary level, so it is difficult to get them to discuss a given topic.

Category 3

R: So, what do you think your students expect to learn from the course you are teaching?

T: I think students expect to learn from my lecture most important is the way how to understand and how to analyse the articles and scientific journals and apply for their theses in the fourth year of their special program.

R: Uh, huh.
T: So, I mean not only the new words, new vocabularies, but they should know the ways how to analyse the articles and scientific journals since they would get the certificate of English level of B and C. But for the first time before studying my lectures, some students cannot analyse the scientific journals correctly. I mean sometimes they understand but they did not know the ways how to apply.
R: Ok so when you say B level you want to mean intermediate level in English proficiency?
T: Yes.

R: So C level prefers to advance English proficiency?

T: Yeah, that's right.

Category 4

R: I got it. Ok, that's great. What skills or strategies have you used to help your students learn?

T: In my opinion I think the skills, uhm, the most important skills are listening, reading then they should have a good background in grammar. In that case they can understand what the details of the article or the scientific journal mention on certain subject. I mean, for example, sometimes they know all vocabulary in one paragraph but if they didn't have enough knowledge about grammar structure and sometimes they could not understand.

R: Well, how did you apply listening skill? How have you used listening skill?

T: Sometimes I let them listen to some …when I use my laptop, asking them to listening to one short video related to the subject that I give the lecture.

R: So how often you use laptop or you give student a chance to listen to short passage?

T: Not only giving them the time for listening to my video tape but I also introduce them to practice and I provide them the website where they can find out themselves, listening to the news (etc) at home. So that is the most important because sometimes they have free time and they can just click to the just access the Internet and they can help themselves not only in the class but at home they can also practice.

R: Ok so this is a kind of extra work the student have to do?

T: Yes, just like the homework.

R: So how about in class activities? Can you tell me more about the skills like pair work, group work or any small activities that you have used recently?

T: Recently we divide the class into six groups and every week every group about ten students. Every group will receive one article then they have some time, let's say, 2 weeks then they can prepare themselves then present in front of the class then other group can discuss and give question and they have to answer. I will help them to answer the questions when they cannot find the answer. Sometimes I also ask them to discuss or talk together just like the pair work and I can listen to their presentation.

R: Oh I see. So how many students are there in the class? When you have six groups?

T: At the moment we have fifty-nine students.

R: Oh wow, very crowded class. Ok so you think are there any difficulties when you manage a very large class like that with about sixty students in your class?

T: Actually we don't have too much time for them to practice as I wish because we have too many students.

R: Yes too many.

T: So in that case in other to develop their skill I ask them to practice it at home first I mean within the group of ten students they have to practice at home I mean they have to discuss about the details of their article some member in the group ask question and they have to answer. They have to discuss with each other at home and when they come to the class, they don't need to wait and to think about the answers. Whenever they receive any question, the whole group can directly answer

so in that case I can save time for them in order to do other type of practice. But in fact, frankly speaking, it's very difficult for me to handle such big class. In my opinion, it would be good if we had the class around fifteen to twenty students.

R: Ok it's very ideal class in the small ones. So what skills do you use now or are you using now?

T: Now I used to ask the students to prepare in groups so they could present in front of the class, or in pair work, and sometimes I give them some (what we call) a case study. I gave them some subjects then they can have active discussion in the class I mean that they did not belong to their homework.

R: Oh I see. So you mean they move beyond the exercises related to the topic and then discover new ideas

T: So, I can see how active they are. If they understand the article from the lecture, I ask them to prepare at home, so they will answer the questions easily or actively discuss in the class.

Category 5

R: Ok, it's interesting oh right in terms of teacher role how do you perceive your role as a teacher?

T: I think now I usually act as a facilitator rather than a controller. Otherwise, students are still passive. I try to help them with ideas, the knowledge then the key words in order to ask them to think about what they want to study, what they can talk, what they can discuss, then whenever they cannot answer the question from their friends; I can help them by giving a sample answer. If they cannot understand, I try to explain to them by providing some examples or something related to the lecture. By that way, I hope to make the student more active because they study for themselves. They don't need just only follow the teacher.

R: So what factor support your teaching practice so far? For example, the resources from the university, the programme or policies?

T: I think the government policy is one of the key factors because the government will give me permission to deliver lectures. Let's say, for example in this case thirty periods for one course and the university provided us with the LCD in order to present our lectures and besides we have a very good system of what is called Learning Resource Centre in the university where the students can find a lot of new books, new journals and also they can access the Internet very easily and free of charge.

R: Yeah, so how do you know that the students take advantage or make use of Learning Resource Centre that the university offers?

T: Normally when I ask them to do homework or to access some articles on the internet, I have already known that they can access from the Internet system in the University because we can buy the database. Students cannot access from outside or at home; therefore, that is the way to keep them working in the Learning Resource Centre. By that way, I can check if they read or don't read journals or articles in the Learning Resource Centre.

R: Ok in other way what factors may hinder your change in practice?

R: Oh I see what you mean pass the exams? Is it the exam to for the graduation or TOEFL exam?

T: TOEFL exam. TOEFL test or IELTS test

R: So you mean the kind international test of English proficiency so they can get the requirement for study abroad right?

T: Yes but besides that they need to meet the requirement for the interview because, for example if they would like to follow the master's degree about biotechnology they should understand, they have to answer questions from the interviewer in the area of the biotechnology so if they didn't have enough knowledge they cannot answer the interviewer even though they get higher score of TOEFL test or IETLS but they will fail when the interviewer interview them.

R: So you mean not only English but also background knowledge of the field- the particular area like microbiology. So it's very important to plan change although you find it difficult because of some limitations. How important are changes in your practices for student learning so you think it's not important, little important, quite important or very important [scales 1-4]?

T: In my opinion it's very important.

R: Ok. You rank number four in the scale? Well, it is very interesting. Well, what sorts of change are being required to achieve the university strategic plans in relation to curriculum or syllabus design?

T: Well, actually, to meet the requirement of the university, they need the students at the moment- the students can analyse the articles, they should read and they use for their thesis at the fourth year. I think that is just like that but in our case we also have two programme for biotechnology: the Bachelor of biotechnology where the student follow the lecture in Vietnamese and we also have the advanced course in biotechnology where the students follow the lecture in English so in that case we have two kinds of student so the university ask the normal Bachelor student just can understand, can analyse the articles in scientific journal in order to use in their theses before they graduate but for the advanced course they have to speak, they have to got enough knowledge for they speaking understanding not only analyzing the article

R: Ok. Are they required to defend their graduation theses in English or just only in Vietnamese?

T: Yes, they have to defend their theses in English. Therefore, they have to practice many skills not only reading comprehension, but they also have to practice listening, speaking and writing.

Category 8

R: What types of support do you need to enable you to make curriculum or syllabus change?

T: So as I mentioned to you, [I think] in order to change or to make the curriculum better I think not only the government policies I mean for example nowadays we only have 30 periods for one paper but I think it's better to have 45 periods. I mean, with 3 credits so the students have more time to practice and to analyse and to learn, and more time to work together. The policies and the government should support more budgets for the university in order to upgrade our facilities and support the Learning Resource Centre in order to get more books, more journals or more databases.

R: So, do you think that database is very important, or it is a good source? How about collegial support, support from your colleagues, from other teachers who teach the similar courses- do you think is it necessary to have that kind of support? Sharing experiences?

T: Yes I think so. Especially for sharing experiences sometimes we discuss during semester sometimes we discuss with our colleagues in order to see we will give lecture to the same class by that way I can discuss with them how good the students after learning from me the ESP for one month, one week or two weeks? So I can modify my way or I ask them to support more knowledge or more details relating to my lecture notes. So in that case, they can support me in giving lectures or support them more new information, new knowledge.

R: So, how often do you share knowledge with your colleagues?

T: Well, actually during the semester, we met each other many times sometimes four times during the course but since we have too much work in the university, so we often meet each other once a month.

R: Once a month. Ok. Are there any kinds of seminars or informal meetings with your colleagues after class?

T: Informal meetings. We require informal meetings because it is easy for us to exchange our experience but sometimes we also follow the seminar together. In that way after the seminar or during the coffee break, we can discuss our ideas for example I say 'Oh, I think that journal or that direction that prospect of our colleagues from Europe is very good. We can apply it to our case. But some of our colleagues may say it's very difficult because we need some more equipment or to apply the new ways or new technique of delivering lectures.'

R: So sharing information or sharing interest or experience also plays a very important role in teaching and then it is also kind of exchange information and they get the benefit is very good. So how will that help you in teaching your practice in the collegial support, or emotional support or university support?

T: I think the most important thing is the university support. The main points here I like to mention are related to more time and databases, as mentioned.

R: So can you still change your practice without any type of support that you have mentioned?

T: Well, it is very difficult because we have to work in teams. Therefore, if we do not have the support from our colleague, we do not have the support from the university, we do not have the support from the government policies; it will be very difficult.

R: So, are there any other limitations?

T: I think the limited standard of the student also one of limitations I mean if student have enough scholarships they can have enough money to buy for example they can buy recording machine or the radio so in listening they can practice listening so they can listen to the news because if they don't have enough money then they cannot buy themselves so it's very difficult for them to just everyday coming to the Learning Resource Centre.

R: Yeah. it's very interesting to know that this is from the student side how about from you the teacher side. Are there any limitations for you in addition to type of class size or the university support that mean you find it very important?

T: I myself don't have any limitation or problems.

R: All right. Before I forget, can you tell me something about yourself? About how many years have you been teaching? Some personal information?

T: I graduated from the University and became teaching staff member since 1978. That means so far I have served for the university 32 years and I got a lot of experiences in delivering lectures not only the specialization such as microbiology, biotechnology or molecular biology and I have a good experience in giving lectures for the student I mean ESP because I have good opportunities to follow the sandwich PhD (mixed PhD) in the Netherlands and I follow several training courses in USA, France, Belgium, Germany and Australia. So when I pursued the PhD training programme, I learnt the experiences from my teachers, from my friends and also from my lab work not only in the experimental lab work but sometime we have had the tours to visit company or visited the field demonstration so I learnt from them and I knew how the farmers or how the technicians would like to ask the teacher to provide the knowledge to their children so in that case I would modify my lectures. That's why I choose the student-centered and also the case study. By doing so, I can stimulate the students and make them learn better.

R: Ok so you have aspiration for teaching and it's very good for the teaching career. Ok. thank you very much for your time and we will work on this project later on and get back to you with this kind of data.

T: Ok. Thank you. I wish you good luck and very good result of PhD.

R: All right. Thank you very much.

Appendix 4 Participant Observation Categories

Categories	Activities	Five-stage lesson plan				
		Pre-task		In-task		Post-task
		(Warm-up)	Presentation (new lesson)	Guided practice	Free practice (Production)	Follow-up (Reflection)
Teaching strategies (how)	☐ role play					
	☐ pair work					
	☐ group work					
	☐ problem solving					
	☐ student's project					
	☐ Other					
Teaching aids/ resources	☐ OHP (overhead projector)					
	☐ LCD projector					
	☐ pictures					
	☐ black/ whiteboard					
	☐ video					
	☐ Other					
The role of the teacher	☐ Controller					
	☐ Team member					
	☐ Facilitator					
	☐ Helper					
	☐ supporter					
	☐ Other					
interactive decision-making	☐ student involvement					
	☐ subject content					
	☐ relevance to the lesson objective(s)					
	☐ Other					
Starting new action (different from the previous lesson?)						
Active learning						
Collaborative plan of new action for the next lesson (to support change)						
Reflections on the practices:						

Appendix 5 Sample Observation Sheet

OBSERVATIONAL SHEET

Date: 4 January, 2012   Time: 7.00- 8.40   Venue: Rm. 109/ C2-SOE
Subject teacher (pseudonym): NGUYEN THI CUC   Number of students: 50
Time to check back with the teacher: January 6, 2012
Lesson objectives: Biology and the classifications of organisms

Time	Content
7:00	Cuc asked students 2 questions: 1. what students expected to learn from the paper 2. if they have any concerns/ difficulties to learn this paper
7:11	Cuc read aloud the students' responses to the two questions Vocab- challenge: memory, quantity of words; Grammar; Pronunciation; Translation; Writing: not focus; How to remember words
7:15	Cuc numbered the students from 1 to 5. Students were sitting in groups with numbers assigned by the number they count for themselves; 5 groups-9-10 students.
7:40	Students were assigned to read and translate posters. Students were asked to write what they learnt from the lesson. Vocabulary card- teacher guided them to use the vocabulary card (game) Cuc wrote the word 'Biology' and students were told to write words in relation
7:45	to the concept of Biology: cell, photosynthesis, genetics, genes, growth, development, respiration, microbiology, reflexive, reflect, plants, evolution, mutation. Cuc delivered the handouts of the text on biology (Unit 1)
8:01	Living things # non-living things= organisms No matter how/ what/ when? Cuc wrote the list of vocab on the left of the blackboard: unravel, lifetime, lifeless, life space- life span, life cycle, life conditions, living matter, life form Cuc stressed the importance of pronunciation of words with s-ending Students were asked to translate the first part of the text
8:10 8:15 8:24	the characteristics of living things. Cuc wrote on the board some words and interpret them to students: irritability, sensitivity, movement, excretion; growth, reproduction Each group read 1 paragraph/ found out new words; and then wrote all new
8:28	words on the board in five columns. Column 1: *Feeding on nutrition* (fungi; photosynthesis; heterotrophic nutrition; photoautotroph); Column 2: *respiration*; Column 3: *excretion* Column 4: *Growth* Column 5: *reproduction* Producer; protoplasm; zygote, stomata; lenticels Cuc checked if students made a list of new words

Appendix 6 Profile of a lesson tracking

Lessons	Tasks	Time	Description of participant observation
Lesson 1	Pre-task, In-task,	80 minutes	*Observing* To examine the lecturer's roles in presenting a new lesson To observe how the lecturer got students involved To identify what areas of practice needed to change
	Post-task	20 minutes	*Participating* to check the students' tasks (translation, writing summaries of previous topic)
Lesson 2	Pre-task	10 minutes	*camera recording* To focus on how the lecturer introduced the lesson
	In-task	75 minutes	*Observing (45 m)* To examine the lecturer's roles in presenting a new lesson To look into lecturer's main strategy To observe how the lecturer got students involved To figure out what areas of practice need support change *Participating (30 m)* to check the student work (translation and exercises)
	Post-task	15 minutes	*Observing* to understand about how the lecturer ended the lesson to look into how the lecturer got feedback from students
Lesson 3	Pre-task	15 minutes	*Observing* To examine how the lecturer brainstormed the class /used warm-up activity to get students involved in the lesson To observe what teaching resources or aids to be used
	In-task	10 minutes	*camera recording* To examine how the lecturer implemented the new action
		25 minutes	*Participating* to lead discussions to monitor students' pronunciation of new words
		40 minutes	*Observing* To observe how the lecturer did differently To look at what teaching resources or aids to be used
	Post-task	10 minutes	*Observing* To focus on how the lecturer implemented new action Having students to write reflection journals
Lesson 4	Pre-task	10 minutes	*Participating* To facilitate a warm-up activity
	In-task	50 minutes	*Observing* To see how the lecturer did differently To look at how the lecturer managed time to allocate new task
		30 minutes	*Participating* To lead discussions To facilitate students' pronunciation of new words
	Post-task	10 minutes	*Camera recording* To focus on how the lecturer got feedback from their students

Appendix 7 Information Sheet for the University

MASSEY UNIVERSITY
INSTITUTE OF EDUCATION
TE KURA O TE MĀTAURANGA

Teacher Change in English for Specific Purposes (ESP) university classes at Vietnam

INFORMATION SHEET FOR THE UNIVERSITY

The Rector (insert name)

Dear (insert name):

My name is Nguyen Buu Huan. I am a PhD student at Institute of Education, Massey University. I am conducting the research entitled *Facilitating teacher change in ESP (English for Specific Purposes) classes*. This study is supervised by Dr. Penny Haworth and Dr. Sally Hansen, and has been reviewed and approved by the Massey University Human Ethics Committee. I would like to carry out my research in your university and invite subject teachers to participate in my research.

Project Description and Invitation

This participatory action research aims to facilitate teacher change as they develop curricula and instructional methods in order to promote student active learning in ESP classes. This research is therefore designed to work alongside subject teachers, in terms of community of practice, as they will determine what aspects of their practice they perceive are important to plan changes, which are relevant to their current teaching contexts. I would like to invite two teachers of ESP classes to participate in this research.

Participant Identification and Recruitment

As this research involves purposive sampling and in-depth qualitative data, it is relevant to select this small number. The Information Sheets and Participant Consent Forms will be sent to two teachers. The criteria for this teacher selection include a similar level of seniority, professional knowledge, a reasonable level of English proficiency and some research experience.

Project Procedures

The research involves three sequential semesters. Data collection will include interviews, observations, and planning meetings. These tools are designed to explore the context of teaching ESP within the university and together with teachers develop a feasible plan of action to improve current practices. In addition, the research aims to examine the effects of the implementation of the action plan over time, to reflect on the changes in practices and evaluate change effects in order to plan new actions for future practices to maximise student learning.

Documents such as lesson plans, syllabi, instructional materials, the university's curriculum policies, curriculum guide and handouts will be useful sources to provide evidence to better understand the practices and context. It is estimated that it will take a maximum of 17 hours for each teacher to allocate for involvement in this project (4 hours of interviews, 8 hours of observations, and 5 hours of planning meetings) through the research process of 3 semesters, beginning in February 2011 to February 2012.

Semester Two (2010-2011) explores the existing context of teaching ESP and examines the planning decisions of action for change. I will interview each of the two subject teachers once to find out possible changes we can collaboratively develop. I will also play a role of a participant observer in their classes for two sessions. Two meetings will be carried out to reflect on the changes we will make and to plan the next actions. Documents will supplement these data. This cycle lasts for eight weeks.

Semester One (2011-2012) investigates the effects of the implementation of the action plan over an extended period of time. I will interview each of the subject teachers twice and observe their class activities twice in order to deepen insights into the continuation of action and results of change. In addition, there will be two planning meetings to help us collaboratively evaluate the effects of change and propose a new action plan for the last cycle. This cycle lasts for ten weeks.

Semester Two (2011-2012) focuses on the reflection of the practices of the action plan and collaboratively evaluate the change process in order to plan a new action for future practices to maximise student learning. This consists of a final planning meeting, an observation, and a final interview. This cycle lasts for six weeks.

Data management

Data such as the interview transcripts and observational notes will be stored securely throughout the research process. These will be kept in a securely locked filing cabinet at my workplace while in Vietnam and in the postgraduate room in New Zealand. Interview transcripts and observational notes will be kept on the researcher's computer hard drive protected and retrieved by a password. The backup of data will also be saved in a flash drive on which only code names appear on data. Data and consent forms will be stored separately. The records of planning meetings and document reviews will be kept in a securely locked cabinet. Findings will be presented in my thesis as well as other academic publications and presentations.

Participant's rights

The teachers' participation is voluntary. Before conducting the study, written permission from the teachers will be obtained according to the Code of Ethical Conduct for Research, Teaching and Evaluations Involving Human Participants, Massey University. Pseudonyms will be used to maintain confidentiality of the teachers and that of the university. However, the university, the school and the teachers will be identifiable because in action research by its nature of involvement and collaborative endeavours, anonymity cannot be completely guaranteed. Others are also likely to know or guess who will be involved in the research. For the recognition and credit of the university and teachers, therefore, my preference is that the names of teachers and that of the university will be identified if agreeable.

If teachers decide to participate, they have the right to ask or decline to answer any particular questions, ask for the recorder to be turned off at any time during the interview. Teachers have the right to withdraw up until two weeks after the conclusion of the final cycle. Teachers will also have a copy of the summary of the findings when the study is completed.

If you agree to allow the research, I will send each individual teacher an invitation letter and an informed consent form, describing my research and inviting them to participate.

If you have any enquiry or if you need further information about my research, please feel free to contact me. You can also contact my supervisor.

I am looking forward to hearing from you.

Yours sincerely,

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Email: P.A.Haworth@massey.ac.nz

Thank you for your time considering participation in my research. Could you please complete the attached Consent Form, if you agree to participate in this research, and return this to the address provided? It would be appreciated if you could this within the next two weeks.

Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/77. If you have any concerns about the conduct of this research, please contact Dr. Karl Pajo, Chair, Massey University Human Ethics Committee: Southern B, telephone 04 801 5799 x 6929, email humanethicsouthb@massey.ac.nz <mailto: humanethicsouthb@massey.ac.nz>

Appendix 8 Participant Consent Form-University

Teacher Change in ESP university classes at Vietnam

PARTICIPANT CONSENT FORM- UNIVERSITY

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I understand that I have the right to withdraw the university from the study at any time.

I agree to allow the teachers at this university to collaborate with the researcher on the understanding that the name of the university, and of the teachers who participate, will not be used without permission.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: _____Date _____

Full name: _____

Position in the
University: _____

Appendix 9 Information Sheet for Teachers

Teacher Change in English for Specific Purposes (ESP) university classes at Vietnam

INFORMATION SHEET FOR TEACHERS

The teacher, _____ [*Insert name*]
Dear _____ [*Insert name*]

My name is Nguyen Buu Huan. Currently, I am a full-time doctoral student at Institute of Education, Massey University. I am conducting the collaborative action research as part of the requirements of my PhD degree entitled *Facilitating teacher change in ESP classes.* This research is supervised by Dr. Penny Haworth and Dr. Sally Hansen. I would like to invite you to participate in my research.

Project Description

This collaborative action research aims to investigate the process of change in your perceptions in developing curricula and instructional methods in order to promote student learning in ESP classes. This research is designed to work alongside you, in terms of community of practice as you will determine what aspects of practice you perceive are important to plan changes, which are relevant to your current teaching contexts.

Participant Identification and Recruitment

Two teachers are being invited to participate. Only those who with a similar level of seniority, professional knowledge, a reasonable level of English proficiency and research experience are being selected.

Project Procedures

The research involves three cycles of action in sequential semesters. Data collection will include interviews and observations. These tools are designed to explore the context of teaching ESP within the university and together with teachers develop a feasible plan of action in an attempt to improve current practices. Drawing on the action plan, the second cycle will investigate the effects of the implementation of the action plan over an extended period of time. The final cycle will reflect on the changes in practices and evaluate the effects of these changes in order to plan a new action for future practices to maximise student learning.

Coupled with interviews and observations, there will be planning meetings at each cycle. These meetings will allow us to develop an action plan and reflect on the process of change in ongoing practices. As a result of reflections and the evaluation of the action, a new action plan will be developed. Document reviews will be useful sources to provide evidence to better understand the practices and context.

Cycle One (2011) explores the existing context of teaching ESP and examines the planning decisions of action for change. I will interview each of the two subject teachers once to find out possible changes we can collaboratively develop. It will take a maximum of one hour. I will also play a role of a participant observer in their classes for two sessions. Each session will take a maximum of two teaching periods. Two meetings will be carried out to reflect on the changes we will make and to plan the next actions. Documents such as lesson plans, syllabi, instructional materials, the university's curriculum policies, curriculum guide and handouts will supplement these data. This cycle lasts for eight weeks.

Cycle Two (2011-2012) investigates the effects of the implementation of the action plan over an extended period of time. I will conduct two interviews and two observations of your class activities in order to deepen insights into the continuation of action and results of change. In addition, there will

be two planning meetings to help us collaboratively evaluate the effects of change and propose a new action plan for the last cycle. This cycle lasts for ten weeks.

Cycle Three (2012) focuses on the reflection of the practices of the action plan and collaboratively evaluate the change process in order to plan a new action for future practices to maximise student learning. This consists of a final planning meeting, an observation, and a final interview. This cycle lasts for six weeks.

Data management

Data such as the interview transcripts and observational notes will be stored securely throughout the research process. These will be kept in a securely locked filing cabinet at my workplace while in Vietnam and in the postgraduate room in New Zealand. Interview transcripts and observational notes will be kept on the researcher's computer hard drive protected and retrieved by a password. The backup of data will also be saved in a flash drive on which only code names appear on data. Data and consent forms will be stored separately. The records of planning meetings and document reviews will be kept in a securely locked cabinet. Findings will be presented in my thesis as well as other academic publications and presentations.

Participant's rights

Your participation is voluntary. You as potential participants are under no obligation to accept this invitation. Your names and that of the university will be pseudonyms in my thesis. If you decide to participate, you have the right to ask or decline to answer any particular questions, ask for the recorder to be turned off at any time during the interview. You have the right to withdraw up until two weeks after the conclusion of the final cycle. You are also given access to a summary of the findings when it is concluded.

If you agree to participate in my research, I invite you to keep the Information Sheet and sign the Participant Consent Form that follows.

If you have any enquiry or if you need further information about my research, please feel free to contact me. You can also contact my supervisor.

I am looking forward to welcoming your participation.

Yours sincerely,

Nguyen Buu Huan

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Email: P.A.Haworth@massey.ac.nz

Thank you for your time considering participation in my research. Could you please complete the attached Consent Form, if you agree to participate in this research, and return this to the address provided? It would be appreciated if you could this within the next two weeks.

Committee Approval Statement

This research has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/77. If you have any concerns about the conduct of the research, please contact Dr. Karl Pajo, Chair, Massey University Human Ethics Committee: Southern B, telephone 04 801 5799 x 6929, email humanethicsouthb@massey.ac.nz

Appendix 10 Participant Consent Form- Teacher

PARTICIPANT CONSENT FORM- TEACHER

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.   YES   NO

I understand that I have the right to withdraw from the university from the study at any time.   YES   NO

I agree to provide information to the researcher on the understanding that my name will not be used without permission. (Please circle the correct response) YES   NO

I understand that the interviews will be tape-recorded and know that I have the right to interrupt the recording process at any time.   YES   NO

I understand that the videotaping will be used to help me to recall my teaching practice and know that I have the right to interrupt the recording process at any time.   YES   NO

I agree to the interview being tape-recorded. (Please circle the correct response)   YES   NO

I agree to parts of the lesson being video-taped. (Please circle the correct response)   YES   NO

I agree to participate in this study under the conditions set out in the Information Sheet. (Please circle the correct response)   YES   NO

Signature: _____Date _____

Full name: _____

Appendix 11 Authority for Release of Transcripts

Teacher Change in English for Specific Purposes (ESP) university classes at Vietnam

AUTHORITY FOR THE RELEASE OF TRANSCRIPTS

I confirm that I have had the opportunity to read and amend the transcript of the interview(s) conducted to me.

I agree that the edited transcript and extracts from this may be used in reports and publications arising from the research.

Signature: _____ Date _____

Full name: _____