

**A Study of Language Learning Style and Teaching
Style Preferences of Hong Kong Community College
Students and Teachers in English for Academic
Purposes (EAP) Contexts**

*A thesis presented to the University of Canterbury in fulfillment
of the requirements for the degree of
Doctor of Philosophy in Education*

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2015

Attestation of Authorship

I hereby declare that this submission is all my own work and that, to the very best of my knowledge and understanding, it contains no material previously published or written by another person, nor any material which has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Acknowledgements

First and foremost, I would like to express my sincere gratitude to my supervisors, Professor Angus Hikairo Macfarlane and Professor Garry Hornby for their excellent supervision and careful guidance in the past four years. Thanks to Professor Macfarlane for sharing the educational experience of the Māori learners and raising my awareness of culturally inclusive education. Professor Hornby provides me with invaluable learning experience in New Zealand and I greatly appreciate his contribution to this thesis.

I am grateful to my local supervisor in Hong Kong, Dr Lap Tuen Wong, for his inspiration and endless encouragement throughout my academic life. Without his tremendous support in the past eleven years, my dream of becoming a tertiary teacher and completing my PhD would not have come true.

I would also acknowledge the principals and the heads of departments of the community colleges who permitted the research. I thank all of my research participants who have contributed to this study.

Last but not least, I would like to thank my parents and my sister for their unconditional love and support throughout my life.

Abstract

In English language classrooms, students use different approaches to carry out English learning tasks. *Language learning styles*, which generally refers to learners' preferred modes of language learning, have been widely researched and discussed in the fields of second language acquisition (SLA) and educational psychology. Understanding the learning style preferences of students can help teachers cope with students' course-related learning difficulties and ultimately help alleviate their frustration levels. Another important concept is *teaching styles*, which refers to teachers' classroom behaviour based on their teaching beliefs, is commonly associated with learning styles in language education research. Teaching style is vital for providing students with good learning experiences and improving students' academic outcomes.

This study explores the English language learning and teaching style preferences in English for Academic Purposes (EAP) classrooms at community college level in Hong Kong. The present study adopted a mixed method approach involving both questionnaire surveys and semi-structured interviews, in attempt to investigate the factors influencing learning styles and teaching styles, and the relationship between them. It aims at providing valuable information for curriculum design and teacher training in order to offer Hong Kong community college students adequate and effective academic English language learning support.

A total of 637 students and 10 EAP teachers from two community colleges in

Hong Kong participated in this research. The quantitative and qualitative findings of this study show that the community college students in EAP classrooms have multiple learning style preferences. A plethora of factors such as cultural and educational backgrounds are related to their development of learning styles. This research also explores the nature of teaching styles and the possible variables, including students' English language proficiency and their learning styles, influencing their teaching styles in EAP classrooms.

This study attempts to explain the relationship between learning styles and teaching styles in English language classrooms with reference to the interview findings from both students and teachers. It is argued that both learning styles and teaching styles are flexible and have a reciprocal influence on each other. Learners may adjust their learning styles in order to meet academic requirements, while teachers may adjust their teaching styles so as to provide students with an affective learning environment. When learners and teachers have more interaction with each other, their styles may become similar to each other. This study also identifies the importance of improving learners' flexibility for developing learning styles and accepting unfamiliar teaching styles.

Based on the evidence drawn from this research, educational implications on teaching and learning in EAP classrooms, and recommendations for future research on learning styles and teaching styles are proposed.

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List of Abbreviations

AD	Associate Degree
ANOVA	Analysis of variance
CLT	Communicative language teaching
CMI	Chinese as a medium of instruction
EAP	English for Academic Purposes
EFL	English as a foreign language
EMI	English as a medium of instruction
EOP	English for Occupational Purposes
ESL	English as a second language
HD	Higher Diploma
HKALE	Hong Kong Advanced Level Examination
HKDSE	Hong Kong Diploma of Secondary Education Examination
LSI	Kolb's Learning Style Inventory
LSQ	Honey and Mumford's Learning Style Questionnaire
MBTI	Myers-Briggs Type Indicator
MI	Multiple intelligences
PLSPQ	Perceptual Learning Style Preference Questionnaire
SLA	Second language acquisition
SPSS	Statistical Package for the Social Sciences
VAK	Visual-auditory-kinaesthetic learning style model
VARK	Visual, aural, read/write, and kinaesthetic
ZPD	Zone of proximal development

Chapter 1: Introduction

1.1 Overview

This chapter aims at clarifying the context and describing the rationale and objectives of this research. It starts with an introduction to the existing learning style and teaching style research and is then followed by background information on the research – English language education in Hong Kong at community college level. The rationale and objectives of this research are then presented. This chapter also provides an overview of the thesis structure.

1.2 Preliminary comments on learning style and teaching style research in second/foreign language education

In English as a second/foreign language (ESL/EFL) classrooms, learners apply variable approaches the ways in which they approach different English tasks. Individual differences are commonly studied in the area of second language acquisition (SLA). SLA researchers generally believe that understanding learners' individual differences can enhance language learning.

Language learning style preferences, which generally refer to learners' preferred mode of language learning, have been widely researched and discussed in the field of SLA and educational psychology. Many researchers believe that learners have certain

learning styles because of their cultural beliefs and educational backgrounds. For instance, Chinese students are commonly featured as group learners under the influence of collectivist culture. Hong Kong students are also characterized as rote learners under the examination-oriented education system. Dunn (1990) points out that teacher awareness of the preferred learning styles of students can help teachers understand and cope with students' course-related learning difficulties and ultimately help alleviate their frustration levels. Chang (2003) believes that understanding the preferred learning styles of students has a resounding impact on curriculum design, teacher training, material development and student orientation. Macfarlane (2004) contends that polarised communication exists when teachers misunderstand or lack interest in students' educational backgrounds, and that may eventually harm the relationship between teachers and students. Investigating students' language learning style preferences provides teachers with useful information on developing students' language learning strategies, which are directly related to language achievement.

The term *teaching styles* refers to the classroom behaviour associated with the teaching beliefs of an instructor, and is not restricted to a teaching method or a technique (Cooper, 2001; Heimlich & Norland, 2002; Jarvis, 2004). Teaching styles can affect how teachers present information, interact with students, and supervise coursework. Many researchers (Giles et al., 2006; Heimlich & Norland, 2002; Razak, Ahmad, & Shad, 2007; Soliven, 2003) point out that teaching style is vital for providing students with good learning experiences and enhancing students' academic outcomes. However, there is limited educational research identifying teaching styles,

especially in second/foreign language education. In addition, very few studies have been carried out to investigate different variables, such as language teachers' educational and cultural background, related to language teachers' teaching styles, compared with the learning style literature.

Some researchers (Cotazzi, 1990; Ehrman, 1996; Felder, 1995; Oxford, Hollaway, & Horton-Murillo, 1992; Jones, 1997; Littlewood, Liu, & Yu, 1996; Reid, 1987; Peacock, 2001; Stebbins, 1995; Tuan, 2011) propose that a mismatch between teacher instructional styles and students' language learning styles may lead to negative impacts on students' language learning. Similarly, intensive research (Giles et al., 2006; Heimlich & Norland, 2002; Razak, Ahmad & Shad, 2007; Soliven, 2003) suggests that teaching styles influence students' learning styles and language learning outcomes. Some (Claxton & Murrell, 1988; Felder, 1995; Oxford & Lavine, 1991) also argue that a deliberate mismatch between teaching styles and learning styles may bring some benefits to students, such as helping learners to develop different learning styles and allowing learners to cope with difficulties which they may face in future. The relationship between learning styles and teaching styles is an aspect on which there appears to have been little research conducted. It is therefore important to investigate the relationship between these two imperatives in order to maximize the effectiveness of learning in the language classroom.

Although there is a range of literature exploring ESL/EFL students' English language learning style preferences, there appears to be very limited research into language learning style preferences in English for Academic Purposes (EAP) contexts,

and in particular at community college level. In addition, very little research has been done investigating the teaching styles of ESL/EFL teachers. This study, therefore, aims at investigating English language learning styles and teaching styles of Hong Kong community college students and teachers in EAP contexts. The relationship between learning styles and teaching styles in the language classroom will also be explored.

1.3 Background to the study

1.3.1 The status of English language in Hong Kong

In 1858, Hong Kong became a British colony where English was an official language. Chinese was not given official status until 1974, despite the fact that most people in Hong Kong had Chinese as their mother tongue (Flowerdew, 1999; Postiglione, 2001; Tsui & Bunton, 2000). English has been primarily used in official and formal situations, especially in the areas of education, government and business (Evans, 1996; Flowerdew, 1999), while Chinese was mainly used for daily and informal communication, and was described as “overwhelmingly the language of the home, the street, and the entertainment media” (Education Commission, 1994, p. 15). After the transfer of sovereignty to China in 1997, English remains an official language and is still highly promoted by the government, for maintenance of the international status of the economy.

Although English is taught as a second language at the very early stages of

education, and is used as the medium of instruction in designated English-medium primary and secondary schools, and all tertiary institutions, Hong Kong students have very limited opportunity to use English outside the classroom. In 1998, the government introduced mother-tongue education (using Chinese as the medium of instruction) in secondary schools and most of the English-medium secondary schools were required to change their medium of instruction policy. The introduction of mother tongue education in secondary schools further reduced students' exposure to English. English is, therefore, often functionally regarded as a foreign language to most of the people, when discussing learning English in Hong Kong context.

In 2010, the government introduced a new medium of instruction policy, allowing schools to choose the medium of instruction arrangements (i.e. using English as a medium of instruction in some classes and/or in some subjects) according to students' language proficiency. Nevertheless, most secondary school classrooms still use Chinese as a medium of instruction as many students' English language proficiency cannot satisfy the student ability criterion of using English as a medium of instruction set by the government.

The problem of declining English language standards frustrates many university lecturers. Hyland's (1997) study investigating undergraduates' English language learning reveals that undergraduate students, who have attended Chinese-medium secondary schools have a strong need for language support, especially on the productive skills of writing and speaking and the acquisition of professional vocabulary. His study also indicates that many undergraduates not only need language

support at university, but also require academic-oriented language support rather than general English. Evans and Green (2007) conducted similar research on the needs of teaching academic English after the implementation of mother-tongue education. Their study also reveals that students from Chinese-medium secondary schools experience significant language problems when they proceed to an English-medium learning environment, especially in the area of academic listening. The problem is becoming more serious with the increasing numbers of students from Chinese-medium secondary schools enrolling at English-medium universities. Their research further confirms Hyland's (1997) conclusion that tertiary institutions in Hong Kong are required to provide students with considerable language support, particularly on the acquisition of academic literacy.

1.3.2 Education system in Hong Kong

Since Hong Kong was a British colony, its education system modelled the United Kingdom system. Until 2009, it followed the “3+3+2+3” model, which included three-year compulsory lower secondary education, and the next seven-year optional education (two-year upper secondary education, two-year matriculation education, and three-year university education). In 2009, the model was then replaced by another “3+3+4” model, with free six-year secondary education and optional four-year university education (Information Services Department, 2015; Zhan, Bray, Wang, Lykins, & Kwo, 2013).

Aiming at reducing students' examination pressure and promoting all-round

development, the Hong Kong Diploma of Secondary Education (HKDSE) (for Form 6 / Grade 12 students) replaced the old system – the Hong Kong Certificate of Education Examination (HKCEE) for Form 5 / Grade 11 students and the Hong Kong Advanced Level Examination (HKALE) for Form 7 / Grade 13 students (Curriculum Development Council, 2006). The new system requires students to take four compulsory subjects – English language, Chinese language, Mathematics and Liberal Studies, plus two or three electives. Although the Education Bureau stated that the enrolment rate in tertiary education is approximately 60%, only 18% of secondary school graduates could gain admission to government-funded universities every year (Lee, 2013). Due to the fierce competition, those students who could not gain admission to the government-funded institutions have to choose the alternatives – studying at self-financed community colleges / universities or studying abroad.

1.3.3 Community college education in Hong Kong

Community college education has a long history in the United States of America for the “provision of lower division university courses, and provision of education and training in different occupational fields for direct into the labour force” (Skolnik, 2004, p. 42). In response to the needs of society, which requires an educated and competent workforce to maintain international financial standing and strengthen the knowledge-based society, the Hong Kong government started to increase postsecondary education opportunities by importing the American community college model, which was adapted in order to cater for the actual needs of Hong Kong

society.

At the beginning of the twenty-first century, the earliest community colleges were established by local universities. Adapted from the American community college system, community college education in Hong Kong is distinctive in terms of the purposes of establishment, programmes and curriculum design, and educational pathways. Community colleges were set up to provide secondary school leavers who perform unsatisfactorily in public examinations with more opportunities to gain entry to local or overseas universities after completion of sub-degree programmes. Another important purpose is to equip students with sufficient workplace knowledge and professional skills to support their future employment.

To achieve those purposes, community colleges mainly offer Associate Degrees (AD) and Higher Diplomas (HD) to Form 7 graduates of the old system and Form 6 graduates of the new system. At the same time, Pre-associate Degrees and Foundation Diplomas are also offered to those who could not satisfy the minimum entry requirements of AD and HD programmes in order to prepare for their articulation to the AD or HD programmes smoothly after completion. The AD originated from the American community college system, whereas the HD are common sub-degree level qualifications in British and Commonwealth higher education systems. In terms of curriculum design, the AD are academically-oriented and aim at preparing students for further studies. The curriculum of AD concentrate on generic skill training, such as languages, basic computer skills and quantitative skills. The HD emphasize professional training and the curriculum is more

vocationally-oriented. A high proportion of the curriculum is on the training of a specific professional discipline or workplace skills, such as Accounting, Electrical Engineering and Tourism Management. Although community colleges in Hong Kong prepare students well for both their academic and career development, most AD and HD graduates desire to pursue university studies after completion of their programmes. Nevertheless, as the number of Bachelor's level of university places in local government-funded universities is limited, a high percentage of students have to study off-shore Bachelor's programmes offered by overseas universities.

1.3.4 English language teaching in Hong Kong community college classrooms

As many local and overseas English-medium universities require students to attain a good level of English, community colleges in Hong Kong put significant emphasis on English language education. All community college students are required to take English language courses in every semester. To fulfil the local or overseas university admission requirements, community college graduates have to achieve good English results. Common English courses in community colleges include General English, English for Academic Purposes (EAP), and English for Professional Purposes. Those courses aim at consolidating students' English language foundation, and prepare them well for their academic and career development. General English mainly covers four key language skills – speaking, listening, reading and writing for general communicative purposes. It aims at helping students to lay a solid language foundation that leads them on to academic English courses and/or vocational English

courses. Most of the General English courses at community college level include the components of academic English in order to prepare students for further academic studies.

EAP courses mainly cover study skills which students need to use in tertiary studies, for example, academic writing, listening and note-taking, referencing skills and presentation skills. Some community colleges offer subject-specific EAP courses that teach the language needed for a particular academic discipline, for example, Physical Science and Social Sciences, while some offer EAP courses with general academic content that involve the language skills required for all academic fields. Similar to the EAP courses at university level, the courses comprise the teaching of general English skills and academic English skills.

Most community colleges in Hong Kong offer English for general academic purposes, as students at community college level generally have limited knowledge of the subject content of the courses they wish to pursue. In addition many of them lack the basic language skills of using English in academic studies, compared to students in conventional universities. EAP courses are highly emphasized in community colleges and most of the colleges require students to spend more than two semesters taking EAP courses.

In Hong Kong English language classrooms at community college level, the Communicative Language Teaching (CLT) approach is usually adopted. Communicative language teaching is an approach to second or foreign language teaching which aims at developing communicative competence in language learning

(Richards, Platt & Platt, 1992). Different from traditional English language teaching which mainly focuses on grammar teaching, the CLT approach concentrates on processes of communication, such as using appropriate language in different contexts, and using language to perform different tasks in different situations, for example, collecting and presenting information. Classroom activities and materials usually emphasize the meaning of what learners are saying or writing (meaning-focused) rather than on a particular language form. A variety of language structures rather than one language structure is used in the activities and learners are involved in pair or group work so that they can negotiate meaning using English. In Hong Kong community college classrooms, integrated English language skills are taught through a variety of themes, for instance, education, science and technology. Common classroom learning activities include class discussions, individual and group presentations, and report writing. Through meaning-focused communicative tasks, students are able to use English in appropriate situations, especially in academic studies, career-focused studies, and in workplace oriented studies.

1.3.5 Teaching and learning English for Academic Purposes (EAP) in Hong Kong tertiary classrooms

In Hong Kong, there is limited research related to the teaching and learning of EAP of tertiary students, though many language educators emphasize the importance of learning EAP. Additionally, most EAP research studies in Hong Kong take place at universities, and a paucity of research has been published on teaching and learning

EAP at community college level in Hong Kong.

EAP courses in the Hong Kong context are regarded as hybrids of ESL and EAP programmes. These courses include the teaching of academic language skills, such as writing academic essays, delivering presentations and note-taking in lectures. At the same time, basic language skills, grammar and vocabulary are also incorporated in the courses. Lu and Julien (2001) explain that many students in Hong Kong have relatively low English proficiency and lack the necessary language knowledge and skills for tertiary studies. However, EAP is supposed to be designed for non-native English speakers who have sufficient language skills to enhance their language ability in order to tackle courses in English-medium learning environments (Jordan, 1997). Many tertiary students in Hong Kong cannot meet the minimal required English proficiency for tertiary studies and thus, have difficulty in acquiring academic English skills. In order to tackle the problem of low language proficiency, the EAP curriculum has to incorporate a remedial language component to the programmes by re-teaching basic English grammar, writing and listening skills, which students should have acquired at pre-tertiary levels.

Hyland (1997) investigated the necessity for EAP of undergraduates from eight disciplines at five tertiary institutions in Hong Kong. His research revealed that students understand the value of EAP classes and believe proficiency in the English language is an important factor for achieving academic success in an English-medium learning environment. It also shows that most students experienced problems with academic writing.

A recent study conducted by Evans and Green (2007) indicates that most Hong Kong tertiary students have problems with receptive and productive vocabulary in English. Another problem students were facing was difficulties in learning independently. They suggest EAP programme designers put more emphasis on the teaching of subject-specific vocabulary. They also comment that teachers should use a task-based approach and content-driven framework in order to accommodate student needs. They conclude that inadequate basic language competence causes students to struggle to deal with complex macro-linguistic tasks. The problem is likely to be intensified with the increasing number of students who are taught in Chinese-medium secondary schools as it was suggested that these students experience more language problems than those who study in English-medium secondary schools, particularly in the area of academic writing. That means that the change in secondary-level medium of instruction may increase the importance of enhancing academic literacy.

The more recent study conducted by Evans and Morrison (2011) shows that first-year university students in Hong Kong face language difficulty when they have to adapt to the new learning environment where English is used as the medium of instruction. The student participants of the research commented that they needed assistance with academic writing (i.e. style, cohesion, and grammar) and technical vocabulary (in lectures and readings). Many also indicated that disciplinary acculturation is a long journey for them in order to succeed in academia.

Different from the nature of universities, community colleges in Hong Kong were established to provide opportunities for senior secondary school leavers, who

could not reach the benchmark for university entry and gain recognized qualifications, to enter trained or skilled work. Community colleges are also known for offering open access and comprehensiveness in course and programme offerings (Vaughan, 2006). One of the biggest challenges community college EAP teachers have is to cater for the educational needs of different students because they offer credit and non-credit courses to a broad constituency (Chan, Lau, Wong, & Mak, 2010). Despite the fact that community colleges can prepare students well for their academic and career pathways, many community college students in Hong Kong intend to continue their studies at local or overseas universities after completion of community college education. Community college students, therefore, have to attain a satisfactory level of academic English proficiency in order to fulfil university admission requirements.

Notwithstanding the growing number of community college students, there is still very limited research exploring Hong Kong students' academic English language learning at community college level. Community college students in Hong Kong are distinctive in terms of their language learning needs, education background, and English language proficiency. As the qualifications offered by community colleges in Hong Kong provide students with multiple pathways, students have different goals of English language learning. For instance, some may wish to enter local universities, while some prefer to enter the workforce after graduation. Therefore, students may have different learning goals when studying EAP. Community colleges in Hong Kong admit students from different education backgrounds. Although most students are local secondary school graduates, some students have graduated from international

schools or overseas institutions. Additionally, some students studied in Chinese-medium local secondary schools, whereas others have graduated from English-medium local secondary schools. Obviously, they were educated under different academic culture. Community college students in Hong Kong generally have lower English language proficiency than university students.

It is clear that there is a pressing need to investigate learning styles and teaching styles in EAP classrooms at Hong Kong community colleges. It will be useful for curriculum planners and teachers to maximize students' learning experiences and academic outcomes by understanding the nature of learning styles and teaching styles, and the relationship between them in the English language classrooms, especially in the teaching and learning of EAP.

1.4 Rationale and objectives of the research

This study is mainly exploratory and descriptive, and aims at investigating English language learning and teaching style preferences in Hong Kong EAP classrooms at community college level. This study is significant for the contribution to the research fields of learning style and teaching style preferences of ESL/EFL students and teachers, as well as for the development of community college English language education in Hong Kong.

The existing literature, which mainly focuses on ESL/EFL students' English language learning styles at university level, may not fully reflect the true picture of

community college English language classrooms in Hong Kong, due to differences in English language proficiency and academic background. ESL/EFL students from different backgrounds may differ from others significantly in their learning style preferences (Reid, 1987). Therefore, the teaching implications suggested by the previous research may not be applicable at community college level. This study is designed to provide insights for English language classrooms at community college level in Hong Kong.

Most of the research investigates learning styles of ESL/EFL students who learn English for general purposes, but not for academic purposes. DeCapua and Wintergerst (2005) suggest that learners may have different learning styles depending on what type of ESL courses learners they were enrolled in, for example, workplace English, academic English, or general English. This study can provide baseline data for future research on language learning style preferences of EAP students.

Additionally, despite many native English researchers having conducted research related to Chinese students' English language learning style preferences, nearly all of them did not note differences in Chinese culture in different parts of China, which may cause differences in language learning styles. For instance, students studying in Hong Kong or Taiwan may have different language learning styles from mainland Chinese students as the social and academic cultures may be different. Research related to Hong Kong students' language learning styles, and their relationship with teaching styles of Hong Kong teachers is limited.

Moreover, although teaching styles have been investigated widely in general

education, there is still a lack of research into the construct of ESL/EFL teaching styles (Akbari & Allvar, 2010; Razak et al., 2007), especially in the teaching of EAP at community college level. There is also limited literature on possible variables related to language teaching styles, such as teachers' cultural and educational background. Teaching style has an important influence on students' learning experiences and is an important factor in determining the extent of students' learning as it provides "vital human connection between the content and the environment and the learners" (Heimluch & Norland, 1994, p. 109).

Furthermore, the relationship between learning styles and teaching styles is an important and under-researched aspect of second/foreign language learning (Peacock, 2001). Although there are some controversies towards the effects of matching/mismatching learning styles and teaching styles, most of the research conducted is not related to second language learning. Also, different from the research participants who learnt in their first language, many community college students in Hong Kong have to adapt to a completely new language learning environment (from secondary education to tertiary education). It is clear that there is an urgent need to research the relationship between learning styles and teaching styles in Hong Kong community college English language classrooms.

This study, therefore, aims to fill a gap in the research literature in the area of academic English language learning and teaching styles at community college level and to provide valuable information for curriculum design and teacher training in order to offer Hong Kong community college students adequate and effective

academic English language learning support. The findings could also help teachers to adopt suitable teaching strategies with reference to students' needs.

The objectives of this research are as follows:

1. To identify the English language learning style and teaching style preferences of Hong Kong community college students and teachers in EAP classrooms
2. To examine how different variables influence students' English language learning style and teaching style preferences in EAP classrooms;
3. To examine the relationship between teaching styles and learning styles in EAP classrooms, at community college level in Hong Kong;
4. To provide baseline data which will be useful in future research on the language learning styles and teaching styles in Hong Kong English language classrooms at the tertiary level; and
5. To provide insights into English language education at community college level in Hong Kong.

1.5 Overview of the research

This thesis has six chapters. This chapter has provided an introduction to the research scope, the contextual background of English language education in community college education in Hong Kong, and the rationale and objectives of this research. Chapter 2 reviews the relevant literature and consists of three parts: educational research on (i) learning styles, (ii) teaching styles, and (iii) the

relationship between learning styles and teaching styles. Chapter 3 describes the research methodology of this study, including formulation of the conceptual framework, research questions, research methods and procedures, data analysis and presentation, and a discussion of the validity and reliability of the research instruments. In Chapter 4 the quantitative and qualitative data collected in Hong Kong community college classrooms will be presented. Chapter 5 discusses and interprets the data collected with reference to the previous literature. Chapter 6 provides educational implications for language teachers in community colleges and concludes with the discussion of its major contributions, as well as reflections on the limitations of this study and suggestions for future research.

Chapter 2: Review of Literature

2.1 Overview

Chapter 1 has outlined the research background, objectives and the scope of research. This chapter aims at reviewing literature concerning language learning styles, teaching styles, the relationship between learning styles and teaching styles, and English learning and teaching in the Hong Kong tertiary context.

The first section sets out the theoretical underpinnings for learning style research by examining the definitions, theoretical models and classifications of learning style, drawing from general psychology and the language education research fields. After looking at the definitions and classifications, it reviews important factors related to learning styles, such as cultural and educational background, in accordance with the specific context for this research – English language classrooms at the tertiary level in Hong Kong.

The second section focuses on teaching style research. It first defines teaching style by drawing on a wide range of research, which is followed by a review of teaching style classifications and related research regarding the general education and language education fields. Similar to the first section, important factors related to teaching styles are also examined by relating them to the Hong Kong English language classroom context.

The third section discusses the relationship between teaching styles and learning

styles in both general education and language education, and examines the effects of the match and/or mismatch of learning styles and teaching styles on learning outcomes. It reviews arguments proposed by both researchers who favour the matching of learning styles and teaching styles, and those against this approach.

This literature review reveals that there is a lack of research related to ESL/EFL learning styles and teaching styles in English for Academic Purposes contexts at community college level in Hong Kong, which is the main focus of this study.

2.2 Learning styles

2.2.1 Definitions

In general psychology, the term *learning styles* refers to learners' preferred general approach to learning, which includes the process of absorbing, processing, and retaining new information. In the research area of second language acquisition, the term *language learning styles* refers to language learners' preferred general approach of language acquisition. Many tests related to learning styles of second/foreign language learners are taken from general psychology, for example, the Student Learning Style Scale (Riechmann & Grasha, 1974), the Learning Style Inventory (Kolb, 1976; 1984), the Productivity Environmental Preference Survey (Dunn, Brown, & Bearsall, 1991), the Embedded Figures Test (Witkin, Oltman, Raskin, & Karp, 1971). There are some that have been specifically designed for second/foreign language research, for example, the Perceptual Learning Style

Questionnaire (Reid, 1987); the Perceptual Learning Preferences Survey (Kinsella, 1993), the Style Analysis Survey (Oxford, 1993), the Learning Style Questionnaire (Willing, 1987), and the Learning Channel Preference Checklist (O'Brien, 1990). As it is widely believed that language learning styles are significant in second language acquisition, it has been one of the key foci in the area of second language learning research. Learning styles are defined in different ways. Below are some definitions of learning styles:

“The term learning style refers to the general approach preferred by the student when learning a subject, acquiring a language, or dealing with a difficult problem.” (Oxford, 2003, p. 273)

“Learning styles are internally based characteristics, often not perceived or consciously used by learners, for the intake and comprehension of new information.” (Reid, 1998, p. ix)

“Learning style is a composite of environmental and perceptual preferences, which influence our physical and sensing needs; cognitive variables, which determine how we approach, conceptualize, and structure our world; and social preferences, which arise from cognitive, personality, affective factors and which shape our behavioural tendencies in learning situations.” (Galloway & Labarca, 1990, p. 113)

“(Learning styles refer to) the characteristic cognitive, affective and physiological behaviours that serve as relatively stable indicators of how learners perceive, interact with and respond to the learning environment... Learning style is a consistent way of functioning, that reflects underlying causes of behaviour.” (Keefe, 1979, p. 5)

Based on the definitions above, it can be concluded that most educational researchers divide learning styles into four different main aspects, namely cognitive, affective, physiological/sensory, and behavioural (Oxford, Hollaway, & Hortin-Murillo, 1992; Wallace & Oxford, 1992; Willing, 1988). Cognitive learning styles refer to the preferred ways of mental functioning. Examples of cognitive learning styles include field-independent/field-dependent learning styles, analytic/global learning styles and reflective/impulsive learning styles. Affective learning styles are the patterns of attitudes that influence what a learner will pay most attention to in a learning situation (Oxford, 2003). Behavioural learning styles relate to the tendency of seeking situations compatible with one’s own learning patterns. The physiological/sensory learning styles, which are commonly investigated in ESL/EFL research, involve the sensory and perceptual tendencies of a learner. A number of educational research studies (Dunn, 1983, 1984; Garger & Guild, 1985; Reid, 1987; Reinert, 1976) show that language learners have mainly one of six basic perceptual learning styles, namely visual, auditory, kinaesthetic, tactile, group and

individual learning styles.

Similar to the definitions of learning styles, different researchers have different opinions towards the nature of styles. Keefe (1982) states that learning styles are relatively stable when learners interact with the learning environment. Ehrman and Oxford (1990) consider that learning styles are internally based characteristics which are retained despite the teaching methods and classroom atmospheres. Learning styles are also used unconsciously by learners for absorbing and understanding new information (Reid, 1998). However, Ehrman and Oxford (1990) add that new styles may be acquired with time and the old styles can be adapted when learners start to become aware of them. Sternberg (1994, p. 174) points out that learning styles “are not permanently determined at birth”. Learning styles can change in different situations and stages of life, and environmental reinforcement can result in the shaping of learning styles. For example, rewarding learners who use certain styles can lead to their preferences for those styles. In addition, designing learning tasks which are more optimally performed with certain styles can also cause learners to prefer certain styles. He also adds that one’s value system is related to the development of learning styles through socialization. Kinsella and Sherak (1998) explain that learning styles are not fixed and not fully innate. They found that learning styles can be reinforced by classroom roles and values and that learners tend to prefer the ways that they are most often exposed to, especially when they experience academic success. That means learning styles reflect habitual ways of acquiring knowledge.

Some researchers suggest that learning styles are biologically determined and are

outcomes of “genetic makeup”. For example, Dunn (1999) argues that learning styles are “biologically and developmentally imposed set of characteristics” (p. 3). She (1990) finds that three-fifths of learning styles are biologically imposed in her research. For example, learners’ preference for bright or dim light is considered as biologically imposed in their studies. However, Dunn (1990) also indicates that other factors, such as sociological and environmental factors, are related to the development of learning styles.

Although different researchers have different ideas about the nature of learning styles, they share similar views about the development of learning styles. That is that learning styles are static for a short period of time, but can be altered in the long term when learners interact with the external factors such as social and educational environments. This study, therefore, will further investigate how different factors might influence students’ learning styles.

The terms *learning style* and *cognitive style* are sometimes used interchangeably in research studies. Ellis (2008) comments that it is necessary to differentiate the terms learning style and cognitive style in order to avoid confusion. Allport (1937) describes cognitive styles as an individual’s habitual way of mental processing, which includes problem solving, thinking, perceiving and remembering, whereas learning style is concerned with the application of cognitive style in learning (Riding & Cheema, 1991). Riding and Cheema (1991) add that cognitive style can be described in terms of bipolar dimensions (e.g., wholist-analytic, impulsive-reflective, concrete-abstract), while learning style can include a number of components which

are not mutually exclusive (e.g., visual, auditory, tactile learning styles). Cognitive style can also be regarded as an important component of learning style. Dörnyei (2005) and Rayner (2000) distinguish learning style and cognitive style by the stability of processing information in different situations. They define cognitive style as the stable way of processing information, which relates to other affective, physiological, and behavioural factors. On the other hand, other theorists consider that learning styles can change with experience or situation, and can also be potentially trainable (Cassidy, 2004; Holec, 1987; Little & Singleton, 1990).

Another term which is also often associated with the term *learning styles* is *learning strategies*. *Learning strategies* refer to the methods learners employ when dealing with different learning tasks, such as negotiation of meaning, practice, and review. In the context of second/foreign language learning, it can be defined as the strategies for learning or using the second/foreign language to tackle a language task. Scarcella and Oxford (1992, p. 63) describe second language learning strategies as “specific actions, behaviours, steps, techniques – such as seeking out conversation partners, or giving oneself encouragement to tackle a different language task – used by students to enhance their own learning”. Examples of second language learning strategies include guessing the meaning of a word by analysing the context, asking questions, and planning for a task. Second language learning styles and learning strategies are sometimes associated as some second language research finds that learning strategies and learning styles are related. Cohen (2003) focuses on the relationship between learning style preferences of second language learners and

language learning strategies. He points out that when a learner, whose style is visual, auditory, group for example, deal with a task, the learner may draw on strategies which may be consistent with his or her style preferences. He also adds that it is, however, difficult to determine how learning style preferences may influence the use of strategies.

Rossi-Le (1995) conducted a study to investigate the relationship between the preferred learning styles of adult ESL learners and their strategy use. The researcher used the Perceptual Learning Style Preference Questionnaire (Reid, 1987) and Oxford's Strategy Inventory for Language learning and found the correlation between results from the two research instruments. She found that visual learners reported themselves choosing visualization as a strategy, while tactile and kinaesthetic learners preferred communicating with native English speakers or others. It was also found that group learning styles preferred social and interactive strategies, such as "requesting clarification", and "asking for correction". Ehrman and Oxford have also conducted a similar study. They used the Strategy Inventory for Language Learning (Oxford, 1990) and the Myers-Briggs Type Indicator (Myers, 1962) to find the relationship between language learning styles and strategies. They found that extroverts prefer using more social strategies than introverts, while thinkers prefer metacognitive strategies more than feelers. Certainly, there are many more research studies showing relationships between language learning styles and strategies. These generally suggest that, if learners can use different language learning strategies effectively, their language learning process can be facilitated and promotes more

successful completion of language tasks (Chamot, 2001; Cohen 1998; Oxford, 2003; Samida, n.d.).

The term *multiple intelligences* (MI) introduced by Howard Gardner (1983) is also commonly associated with learning style theories. The MI theory is a framework for determining one's different intelligence factors – the ability to learn information in particular ways. Gardner uses eight criteria to assess whether a person can be regarded as intelligent, namely linguistic, logical-mathematical, spatial, bodily kinaesthetic, musical, interpersonal, intrapersonal and naturalist intelligence. Daniel Goleman's (1998) theory of emotional intelligence furthers Gardner's MI theory. The theory suggests that intelligences include cognitive and emotional abilities. Gardner's interpersonal and intrapersonal intelligences are equivalent to Goleman's emotional intelligence. He believes that emotional intelligence is even more important than cognitive intelligence. Gardner (as cited in Strauss, 2013) later finds that many people have confused notions of learning styles and multiple intelligences. He explains that the term *intelligence* refers to a person's *ability* for learning or facing a problem, while *style* or *learning style* refers to how an individual approaches a range of materials. Prashing (2005) also suggests that MI and learning styles are different. She defines *learning styles* as the way people *prefer* to learn and remember new information, while MI focuses on the *ability* to process information. Learning styles can be used to explain the “input” of information intake, whereas MI can be understood as the “output” function of learning. She further explains that understanding combinations of preferred learning styles can help educators predict

school success or failure. On the other hand, MI does not provide information about students' learning attitudes and their needs during the information intake process. Students with similar intelligence factors may have greatly different learning styles. It is therefore important to understand students' preferred learning styles first in order to help them develop the intelligence factors.

This current research study mainly focuses on investigating the English language learning styles that Hong Kong community college students have, as well as possible factors which may affect their language learning styles, instead of language learning strategies and multiple intelligences. One of the important aims of this research study is to provide baseline data for potential researchers to investigate how language learning styles relate to other important factors related to second/foreign language acquisition of Hong Kong students at community college level. After examining community college students' English language learning styles, further research can be done to understand the relationship between learning styles and learning strategies, and also other possible factors related to second/foreign language learning. In this study, the term *language learning styles* refers to learners' preferred general approach to learning English as a second/foreign language in EAP contexts. The following sections will further explain and define the types of language learning styles this study explored. Due to the fact that the language learning styles chosen are based on the learning style theoretical models and previous research done by other researchers, it may be useful to review the previous learning style research and theoretical models first. As discussed in the previous section, many second language acquisition research

studies use tests and questionnaires from general psychology, and the term *learning style* mainly comes from general psychology. General psychology research and related theoretical research models will be explored first and second/foreign language research studies and their theoretical research models will then be discussed.

2.2.2 Theoretical models and instruments

(i) *Jung's Theory of Psychological Type and the Myers-Briggs Type Indicator (MBTI)*

Carl Jung is one of the earliest learning style theorists. His theory of psychological type is used for explaining individual differences and is influential in the development of many learning styles models (Jung, 1968). He examines the idea of psychological types as a way of learning. He states that random behaviours are results of the differences between individuals' preferences to use their mental capacities in their internal and external worlds. He notes that people have different preferences towards different mental functions. According to the theory, people differ in their preferences towards eight different psychological types. He identifies that there are four perceiving and judging functions (sensing, intuition, thinking, and feeling) and two attitudes (extraversion and introversion). The four functions and the two attitudes can be combined to create eight mental Functions-in-Attitude. The eight types of mental functions in their attitudes constitute Jung's theory of psychological types. He finds that the attitudes of extraversion and introversion are used in conjunction with either a perceiving function (sensing and intuition) or judging function (thinking and feeling).

Also, his theory states that people have innate pre-dispositions to prefer one of the four functions over the others. For example, some people may prefer sensing of the perceiving function rather than the judging function. The most preferred type of a learner is his/her dominant mental function. He warns that people may experience energy depletion and fatigue when the other less dominant functions have been used for too long. It could be detrimental to learning if the environment does not allow the individuals to use their dominant function, which he refers as “falsification of type”. Although Jung’s theory does not refer to mental functions as learning styles, it can be seen that he has established a solid foundation to the learning style theories. The theory shows that learners have different preferences for the ways of learning and may experience anxiety when they are not allowed to learn in their favourable ways.

Inspired by Jung’s theory on psychological types, Myers and Briggs introduced a self-report inventory of psychological types called the Myers-Briggs Type Indicator (MBTI) in 1962. The MBTI aims at measuring learners’ preferences towards 16 personality types in a more understandable and practical manner. It has been widely used in learning style research nowadays. The 16 personality types are based on the eight types of mental functions proposed by Jung (The Myers & Briggs Foundation, 2015).

(ii) *Curry’s Onion Model*

Curry (1983, 1987) proposes a theoretical framework of learning behaviour that uses an onion metaphor to illustrate different layers of the construct. According to the

model, the outer layer “instructional preference” refers to learners’ preference of learning environment. It is described as the most observable, lowest level of stability, and the most easily influenced layer. Curry points out that this layer is the most unstable in the learning style arena as it directly relates to learning environments, learner expectations, teacher expectations and other external features. Related research instruments measuring instructional preferences include the Learning Preference Inventory (Rezler & Rezmovic, 1981). The second layer is “social interaction”, which refers to learners’ preferred choice for social interaction in learning. Research instruments measuring social interaction include Reichmann and Grasha’s Student Learning Style Scale (1974). The scale measures learners’ preferred type and level of interaction (independent/dependent, collaborative/competitive, and participant/avoidant). The next layer, which is the more stable one, is “information processing” – learners’ intellectual approach to processing information. Instruments associated with information processing include Kolb’s Learning Style Inventory (Kolb, 1976), the Cognitive Preference Inventory (Tamir & Cohen, 1980), and the Inventory of Learning Processes (Schmeck, Ribich, & Ramaniah, 1977). The last layer is “cognitive personality style”. It addresses learners’ ways of adapting and assimilating information, and is described as a “relatively permanent personality dimension” (Riding & Cheema, 1991, p. 195). Instruments which measure learners’ cognitive personality style include the Embedded Figures Test (Witkin, 1962), Myers Briggs Type Indicator (Myer, 1962), and Matching Familiar Figures Test (Kagan, 1965). This research mainly investigates the instructional preference (first layer)

and the social interaction (second layer) as they are the most observable and most unstable layers of the model.

(iii) *Gagne's Conditions of Learning Theory*

Gagne's (1985) Conditions of Learning Theory focuses on intentional learning, which is the type of learning that occurs in school or specific learning programmes. His theory of learning is based on intellectual skills and eclectic behaviourism (Harris, Sadowski, & Birchman, 2004). His approach considers that learning is similar to the input-output information processing of a computer and that learning takes place through attention, encoding and retrieval of information (Gagne, Briggs, & Wagner, 1992). He identifies five types of learning (Five Categories of Learning Outcomes): verbal information, intellectual skills, cognitive strategies, motor skills and attitudes. The theory states that both internal and external conditions are necessary for learning. Internal conditions are previously learnt capabilities that learners have before new learning takes place. This might include learners' prior learning experiences and knowledge. External conditions refer to the stimuli that exist outside the learner, which include the learning environment, teacher, and the learning situation. Based on the conditions of learning, Gagne designs a series of instructional events (Nine Events of Instruction) for different learning outcomes. In order to understand how learning takes place, it is important to understand both internal and external conditions. Gagne's Conditions of Learning Theory seems to be consistent with Curry's (1983) Onion Model. Both models emphasize that internal and external factors can influence

students' learning.

This research study aims at exploring the internal factors (e.g., students' educational background and their language proficiency) and the external factors (e.g., teaching styles and syllabi) so as to examine students' learning styles. Although Gagne's Nine Events of Instruction is criticized because the instructional events might not be suitable for self-learning and be ineffective for adult learning (Dills & Romiszowski, 1997), the conceptual base of Conditions of Learning Theory is useful for understanding students' learning in this study.

(iv) Kolb's Experiential Learning Theory and the Learning Style Inventory

David Kolb's (1984) experiential learning theory explains the interaction between human developmental stages, learning processes, and experiences. Similar to Curry's Onion Model and Gagne's Conditions of Learning Theory, it focuses on the transaction between internal characteristics and external circumstances, and between personal knowledge and social knowledge. Kolb (2000) considers that learning style is not a fixed trait, but "a differential preference for learning, which changes slightly from situation to situation. At the same time, there is some long-term stability in learning style" (p. 8). He states that learning is a continuous process whereby knowledge results from experiences and their transformation. In addition, learning involves transactions between the person and the environment.

Kolb outlines a four-stage learning cycle that a learner will experience in different degrees: experiencing (concrete experience), reflecting (reflective

observation), thinking (abstract conceptualisation), and acting (active experimentation). The four-stage learning cycle may vary according to learners' learning styles and the learning contexts. Learners will generally show preference towards one of the stages at the most basic level. The preferred learning stage then determines learners' preferred learning styles in Kolb's learning style inventory. In stage one – concrete experience, learners are involved in new experiences. In stage two – reflective observation, learners observe others or develop observations based on their experiences. In stage three – abstract conceptualization, learners create theories based on their observations. In the last stage – active experimentation, learners start to use the theories to solve problems or make decisions.

To assess individuals' preferences towards the four modes of learning process, Kolb developed the learning style inventory. Kolb and Kolb (2005) further explain that life experiences, the demands of the environment, and hereditary make-up can contribute to the development of learning style preferences. The four learning styles that Kolb and Kolb define include converging, diverging, assimilating, and accommodating. The converger is strong in abstract conceptualization and active experimentation, and is good at practical application of ideas. The diverger is good at concrete experimentation and reflective observation, and can generate ideas and see things from different perspectives. The assimilator is strong at abstract conceptualization and reflective observation, and is best at inductive reasoning and creating theoretical models. The accommodator relies on concrete experience and active experimentation, and can solve problems intuitively.

In the late 1970s, Peter Honey and Alan Mumford found that Kolb's LSI had low face validity in their research. They extended the LSI by producing a new inventory called Learning Styles Questionnaire (LSQ). Honey and Mumford (1992) define *learning style* as "a description of the attitudes and behaviour which determine an individual's preferred way of learning" (p. 1). They identify four types of learning styles based on Kolb's LSI: activists, reflectors, theorists, and pragmatists. They emphasize that those styles have their own strengths and weaknesses and may be important in one situation, but not in another. They also state that there is a range of factors that could influence learning styles, such as learning experiences, the range of opportunities available, the culture and climate for learning and the impact of the teacher. They also found that learning styles are "modifiable by will" (Honey & Mumford, 2000, p. 19).

(v) *Apter's Reversal Theory of Motivational Styles*

The reversal theory proposed by Apter (2001) aims at providing explanations about human behaviour and experience by examining the dynamic interplay between "reversing" motivational states. Although the theory is not directly related to learning styles, it is included in this section because the ideas of motivational styles can be applied to understand learning styles. The theory of motivational states categorizes individuals' intellectual life into four areas: means-ends, rules, transaction, and relationships. Apter identifies polarities among the four domains: seriousness and play, conformity to rules and challenges to rules, power and love, self and others. Different

from other personality models which assume that people have fixed personal characteristics, Apter's theory suggests that individuals can shift between styles based on their needs, motivations, and situations. For example, individuals may become serious when they have to attain achievement, but may have a playful attitude when they have to search for fun. When applied to the field of learning styles, it can be seen that individuals may modify or shift between styles when they are motivated to do so or have to meet the demands of a particular situation (Hadfield, 2006). Coffield, Moseley, Hall, and Ecclestone (2004) suggest that reversal theory implies that productive learning styles can be fostered by providing learners with a favourable environment in which "important values are conveyed and reversals through boredom and satiation are less likely to occur" (p. 42).

(vi) *Reichmann and Grasha's Style of Learning Interaction Model*

Reichmann and Grasha's model (1974) is a social interaction scale which focuses on the social and affective dimensions of the measurement of style. They define learning styles as the personal characteristics that can influence learners' ability to acquire information, interact with peers and teachers, and participate in learning activities. The personal dispositions include learners' motives, perceptual skills, modes of processing information, and preference for sensory stimulation, gathering information, social relationships, and qualities of physical environment. Those qualities can affect their preference for teaching styles, and their ability for acquiring knowledge. Reichmann and Grasha also suggest that learning styles are

unstable and can be altered according to the learning situation and experience. The model mainly has three dimensions: avoidant-participant, competitive-collaborative and dependent-independent. Grasha explains that avoidant learners are usually not interested in class content and are typically uninterested in some class activities. However, participant learners are very active in class activities and understand teachers' expectations well. Collaborative learners prefer sharing and working with teachers and peers. They prefer lectures with class discussions and group work activities. Competitive learners learn for receiving recognition for their academic accomplishments. Dependent students prefer teachers to have an authority role in class and tell them what to do. They also rely a lot on teachers' instructions and require teachers to give them clear guidelines. Independent learners like to have independent learning and think for themselves. They prefer individual work, instead of group learning. Similar to other learning style models, most learners fall in several learning style categories and learning styles can be changed across different learning situations. Grasha (1991) explains that learning styles and teaching styles are closely related and that learning styles affect students' satisfaction towards teaching styles and their learning ability in class. In 1996, he proposes a new model which focuses on the interaction between learning styles and teaching styles (Grasha, 2002). Further information about the relationship between learning styles and teaching styles will be discussed in the latter sections.

(vii) *Dunn and Dunn Model of Learning Styles*

According to Dunn and Dunn (1992, p. 4), learning styles refer to “a biological and developmental set of personal characteristics that make identical instruction effective for some students and ineffective for others”. The *Learning Style Inventory*, a popular self-reporting questionnaire for analyzing the instructional and environmental preferences of students, was developed by Dunn, Dunn, and Price (1975). The learning style instrument was mainly developed for analyzing native speakers of English’s learning styles. It includes five main aspects / characteristics related to learning styles: (1) environmental factors (light, sound, temperature, and design); (2) emotional factors (structure, persistence, motivation, and responsibility); (3) sociological factors (pairs, peers, adults, self, and group); (4) physical factors (perceptual strengths – auditory, visual, tactile, kinaesthetic, mobility, intake, and time of day); and (5) psychological factors (global-analytic, impulsive-reflective, and cerebral dominance). Dunn and Dunn (1992; 1993; 1999) explain that individuals usually are affected by only between 6 to 14 of the 21 elements. The specific preferences are then contributed to the learning style of the individual. The model has been used to investigate the relationship between learning styles and academic achievement, age, gender, and culture. Dunn and Dunn (1992) assume that learning styles are largely constitutionally based and suggest teachers match their teaching styles with their students’ learning styles in order to maximize learning outcomes. Some research using the model shows that when students’ learning styles are accommodated, they have higher academic achievements compared to those whose learning styles are not accommodated. The model has been used in a variety of

settings, such as primary and secondary schools, and universities in different countries. Some researchers comment that the model can give clear direction for matching instructional materials and styles with reference to students' learning styles. However, when the model has been applied in second language acquisition research, researchers doubt the usefulness of the model in terms of predicting achievement. For example, Bailey, Onwuegbuzie, and Daley (2000) administered the questionnaire designed by Dunn and Dunn to 100 university students studying French and Spanish in the United States. Findings showed that higher achievers tended to prefer informal classroom settings and not the kinaesthetic mode. The results indicated that learning styles predict a very limited proportion of the variance in achievement scores.

(viii) *Fleming's VAK / VARK Theory*

VAK is known as visual-auditory-kinaesthetic learning style model. The VAK concept theories were first developed by psychologists such as Fernald, Keller, Orton, Gillingham, Stillman and Montessori, beginning in the 1920's. Fleming and Mills (1992) further developed VAK theory and proposed the VARK theory, which is one of the commonly used learning style models to examine learners' learning styles. According to Fleming (2006), the model is used to evaluate the category of people's communication preference. In the acronym VARK, V means visual, A refers to aural, R stands for read/write, and K means kinaesthetic. Fleming conducted a learning style survey and reached the following conclusions:

- Learning style preferences can influence individual behaviours.

- By understanding students' learning style preferences, strategies can be developed to enhance learning.
- Matching strategies for learning of a person with his learning style preferences can motivate learners.
- The matching could promote a deeper approach to learning and effective metacognition.
- Understanding learners' learning styles is important for learning.

(ix) *Willing's two-dimensional learning style in ESL/EFL contexts*

Willing (1987) identifies four major English language learning styles based on two major dimensions. Kaminska (2014) finds that Willing's concept of language learning style is a reinterpretation of Kolb's. Willing identifies four main learning styles. Table 2.1 shows the characteristics of learning styles used by adult ESL learners.

Table 2.1. Willing's Learning Style Categories

General Learning Style	Characteristics
Concrete learning style	Prefers kinaesthetic modality, people-oriented, imaginative, dislikes routinized learning
Analytical learning style	Independent, prefers solving problems by means of hypothetical-deductive reasoning, prefers logical presentation

Communicative learning style	Highly adaptable and flexible, prefers social learning and a communicative approach, enjoys making decisions
Authority-oriented learning style	Rely on other people and teachers' directions, likes a structured learning environment, dislikes discovery learning

Kaminska (2014) compares Kolb's learning style model and Willing's. Kolb's abstract conceptualisation / concrete experience dimension can be interpreted as Willing's concrete and analytical. In addition, Willing interpreted Kolb's processing style of active experimentation and reflective observation as active (self-initiated) and passive (under other people's control) learning. Willing's framework focuses on processing, while Kolb's model emphasizes both representation and processing.

Based on Willing's (1988) model, concrete learners are field dependent and passive, and they enjoy social interaction and authority. Analytical learners are field-independent and active learners who prefer to work individually and independently. Communicative learners are field dependent and active, and prefer real-life communication. Authority-oriented learners are field-independent passive learners and prefer organization and teachers' control.

(x) *Oxford's Learning Style Categories in ESL/EFL contexts*

Oxford, Ehrman, and Lavine (1991) define language learning styles as the

learning approaches students use in second/foreign language learning and divide learning styles into four interrelated aspects: cognitive, affective, physiological, and behavioural. They emphasize the relationship between learning styles, learning strategies and culture. Learning styles and learning strategies are believed to be influenced by cultural needs and values. For example, they explain that the nature of Chinese characters enable learners develop their ability to recognize patterns and memorize by rote, while people brought up speaking German tend to build up logical and scientific way of thinking. At the same time different learning styles are associated with different learning strategies. Oxford et al. (1991) comment that the most significant learning styles for ESL/EFL learning include (1) global and analytic; (2) field-dependent and field-independent; (3) feeling and thinking; (4) impulsive and reflective; (5) intuitive-random and concrete sequential; (5) closure-oriented and open; (6) extroverted and introverted; and (7) visual, auditory, and hands-on (tactile and kinaesthetic). Oxford et al. associate each of the style dimensions with a set of learning strategies or behaviours in the ESL/EFL setting. Table 2.2 shows details of the learning styles that Oxford et al. identified.

Table 2.2. Oxford's Learning Style Categories

Learning styles	Definitions
Global	Sensitive toward the overall picture
Analytic	Sensitive to small details
Field-dependence	Prefer to deal with information in a holistic way

Field-independence	Able to separate from a given context, without distraction
Feeling-oriented	Sensitive to social and emotional factors
Thinking-focused	Make decisions based on logic and analysis
Impulsivity	Show quick and uncritical response to hypotheses
Reflection	Prefer systematic, analytic investigation of hypotheses
Intuitive-random	Prefer building a mental picture of the second language information
Concrete-sequential	Prefer learning materials and activities involving different elements, such as sound, movement and touch, that can be applied in a concrete way
Closure-oriented	Like to plan language study carefully
Open styles	Prefer discovery learning and prefer to relax and enjoy
Extroverted	Enjoy sharing with other people, such as group activities
Introverted	Prefer working individually
Visual	Prefer learning through visual means (e.g. books, handouts etc.)
Auditory	Prefer listening and speaking activities
Hands-on	Prefer activities which involve lots of movements and physical action

The most recent learning style research instrument developed by Oxford is the Style Analysis Survey which has 110 statements analyzing learners' general learning approach by examining five main activities:

Activity 1: How learners use their physical senses to study or work (30 items)

Activity 2: How learners deal with other people (20 items)

Activity 3: How learners handle possibilities (20 items)

Activity 4: How learners approach tasks (20 items)

Activity 5: How learners deal with ideas (20 items)

Respondents of the survey are required to rate items on a four-point scale. Each of the five styles constitutes a comparative style continuum

Activity 1: Visual vs. auditory

Activity 2: Extroversion vs. introversion

Activity 3: Intuitive random vs. concrete-sequential

Activity 4: Closure-oriented vs. open

Activity 5: Global vs. analytic

Although the survey uses a comparative style continuum, Oxford (1993) notes that helping learners understand their learning style preferences can enable them to manipulate both ends of the style continuum in order to suit different learning tasks in different contexts. The learning style preferences are their ‘comfort zone’ and teachers should help learners to stretch their learning zones. She also adds that each style preference is useful for language learning. This indicates that learning styles are flexible and it is possible for learners to change their learning style preferences. It is therefore important to identify students’ learning styles and investigate the flexibility of their styles.

(xi) *Reid's perceptual learning styles in ESL/EFL contexts*

Reid (1987) uses the term “perceptual learning styles” to describe the “variations among learners in using one or more senses to understand, organize, and retain experience” (p. 89). Keefe (1987) adds that perceptual learning style preferences are under the umbrella of the cognitive learning styles as “perceptual response is both cognitive and affective in the sense that preferred response is a biased reaction to information. We prefer to get our information in ways that are pleasing to us” (p. 17). The sensory channels are also known as “modality strengths”. To measure learning styles, Reid designed the Perceptual Learning Styles Questionnaire for high intermediate or advanced second/foreign language learners. The questionnaire consists of 30 statements that participants have to rate on a five-point Likert scale. Table 2.3 shows the six types of perceptual learning styles categorized by Reid.

Table 2.3. Reid's Perceptual Learning Styles

Learning styles	Definitions	Examples
Visual	Learns more effectively through the eyes	Reading and taking lecture notes
Auditory	Learns more effectively through the ears	Listening to lectures, reading aloud
Kinaesthetic	Learns more effectively through complete body experience	Field trips, role-playing
Tactile	Learns more effective through	Building models, touching and

	“hands-on” learning	working with materials
Group	Learns more effectively though working with others	Group discussions, working on group projects
Individual	Learns more effectively when working alone	Individual written assignments

Regarding the definitions of different modalities, there is some confusion in the learning style literature. The terms *tactile* and *kinaesthetic* are sometimes used interchangeably by some researchers. Tactile refers to learning with one’s hands through handling resources, for example, writing, drawing or taking notes. Kinaesthetic suggests learning with the total physical involvement, such as dramatizing or interviewing. Reid explains that modality strength may occur in a single channel, for example, auditory, or may involve two or more channels, such as kinaesthetic, visual and tactile. She also adds that ESL students from different educational and cultural background can differ significantly in their learning style preferences. Other variables, such as sex, length of time spent on an English-speaking country, and level of education may be related to various learning styles preferences. The questionnaire Reid developed was adapted and used in the current study. Further details of the instrument and its adaptation to this study will be discussed in Chapter 3.

Summary

This section describes and explains different learning style models from the

general context to the second/foreign language learning context. Based on the literature reviewed above, it can be seen that there are several common characteristics shared by most of the general and second/foreign language learning models.

- All learners may have various types of (language) learning styles which are not mutually exclusive.
- Learning styles can be divided into different categories such as, cognitive learning styles, sensory learning styles, and temperament (language) learning styles.
- Learning involves both internal and external factors. Internal factors refer to learners' prior knowledge (e.g. language proficiency) and educational experiences, while external factors may involve teaching styles, learning environment and teaching syllabi. That means both internal factors and external factors can affect (language) learning styles.
- (Language) Learning styles can be measured through different research instruments, such as questionnaire surveys.
- (Language) Learning styles are related to students' preference towards teaching styles, and are therefore related to the effectiveness of acquiring knowledge in the classroom.
- (Language) Learning styles may change with learning experience and situation.
- (Language) learning styles and teaching styles are closely related.

The above section mainly introduces the various language learning style models and the learning style categories identified by researchers in the general psychology

and the second/foreign language learning fields. The following section reviews second/foreign language learning style research conducted in different countries in order to relate the theoretical models and theories to the actual situation in second/foreign language classrooms, especially in the Chinese-speaking students' classroom.

2.2.3 Learning styles and cultures

Biggs and Moore (1993) define culture as “the sum total ways of living built by a group of human beings which is transmitted from one generation to another” (p. 24). Macfarlane, Macfarlane and Webber (2015) point out that the ways of understanding the world are socially and culturally specific. Kennedy (2002) explains that culture is not only a set of behaviour, it is also the social rules, beliefs, attitudes, and values that govern how people act and how they define themselves. Nelson (1995) examines the relationship between the terms “learning style” and “culture” in her book chapter. She points out that the concepts of learning style and culture look contradictory on the surface. Learning style is related to individual differences and the development of learning style instruments implies the existence of individual learning style differences, whereas the notion of culture implies what is shared by a group of individuals and is related to similarities, but not differences. However, Nelson (1995) argues that culture is not only shared by a group of individuals, but is also learnt by individuals. Individuals are not born to learn visually or auditory, kinaesthetically or analytically, they learn how to learn through the socialization processes in families

and the society. Nelson (1995) quotes Singleton 's (1991, p. 20) explanation on the cultural theory of learning to explain the relationship between learning style and culture,

“There are, in every society, unstated assumptions about people and how they learn, which act as a set of self-fulfilling prophecies that invisibly guide whatever educational processes may occur there. They act as a kind of unintentional hidden curriculum, or what an anthropologist might call a cultural theory of learning.”

A number of researchers (De Vita, 2001; Hofstede, 1986; Jordan, 1997; Kennedy, 2002; Littrell, 2006; Oxford & Anderson, 1995; Rossi-Le, 1995; Stebbins, 1995) suggest that culture affects one's development of learning styles. Research studies also indicate that poor understanding of students' cultural learning styles can sometimes cause academic failure. For example, Nelson (1995) reviews two large-scale ethnographic studies related to cultural learning styles. The first study was conducted with Native Hawaiian children. The Hawaiian children did not perform well in traditional public schools (which focused on individual achievements) as teachers did not notice the socialization patterns of Hawaiian children at home. The researcher improved the situation by reorganizing the class structure which was similar to those children's homes, where they were encouraged to be helped by peers or siblings rather than adults. They were also taught through stories as those children were accustomed to doing at home. The changes were successful in improving children's academic achievements. The findings may imply (1) the existence of

cultural learning styles; (2) cultural learning styles are learnt in families and through the society; and (3) when teaching styles are congruent to the learning styles, students' learning can be enhanced.

Another example is many Maori learners, the indigenous people of New Zealand, experienced academic challenges in mainstream educational settings which aim at promoting success for the dominant group – the Pākehā (New Zealanders of European descent) (Bishop & Glynn, 1999; Macfarlane & Macfarlane, 2012). The value of individualism promoted by the mainstream group is in conflict with the Maori values that emphasize interdependence and wholeness (Macfarlane, 2004). Bishop and Glynn (1999) comment that the dominant values enhance the life chances of Pākehā children, but undermine the cultural beliefs and practices of Maori. The cultural clash creates cultural and psychological tensions for Maori students. The educational achievement of Maori was eventually found to be much lower than the non-Maori in both national assessments and international comparative studies (Smith & Mutch, 2010). In order to improve the academic outcomes of Maori students, the New Zealand Ministry of Education introduced the Maori education strategy, *Ka Hikitia*¹ – Managing for Success 2008-2012. The strategy aims at ensuring “Maori students are enjoying and achieving education success as Maori” (Ministry of Education, 2009; 2013). *Ka Hikitia* focused on improving teaching and learning through establishing culturally responsive contexts. There are four focus areas in the strategy: (1) ensuring high quality early childhood education for Maori students; (2) engaging Maori young

¹ *Ka Hikitia* means “to step up, to lift up or to lengthen one’s stride” (Ministry of Education, 2013, p. 5).

students in their schooling processes by organizing professional development programmes and fostering family-school partnerships; (3) emphasizing the importance of Maori language education by improving the supply and quality of teachers who can teach the Maori language, and (4) transforming the Ministry by encouraging more professionals to focus on Maori education. The culturally responsive strategy achieved positive improvements in academic performance of Maori students at both primary and secondary school levels. The attendance, retention and participation in external examinations had improved after the implementation of *Ka Hikitia* (Ministry of Education, 2013; Smith & Mutch, 2010). The results imply that culturally responsive pedagogies and educational strategies improve educational outcomes. Also, teachers should understand the cultural values of learners and provide a culturally inclusive classroom (Macfarlane, Glynn, Cavanagh, & Bateman, 2007).

Another study took place in Oregon with Warm Springs Indian children (Nelson, 1995). The children could not succeed in their academic studies as their socialization patterns of their culture were different from those of their teachers and schools. They mainly learnt through the visual channel, which involved very little verbal elements. They also spent much time with peers, instead of adults. The cultural patterns were not congruent with the norms of traditional school in Oregon, which valued individual achievement and oral participation. The study again shows that insufficient understanding of students' culture can cause academic failure.

Reid (1987) has conducted a large-scale research study investigating the four

basic perceptual learning styles preferences for group and/or individual learning of nearly 1300 non-native speakers of English in the United States. She (1987, p. 99) concludes that ESL students differ significantly in various ways from native speakers of English in their perceptual learning styles. Additionally, ESL speakers from different language (and by extension different educational and cultural) backgrounds sometimes differ significantly from each other in their learning style preferences. Moreover, as ESL students adapt to the English-speaking academic environment, their learning styles may change. Hainer, Fafan, Bratt, Baker, and Arnold (1990) confirm Reid's research finding that ESL learning styles are "the results of a complex interaction of age, educational experience, and cultural background" (p. 1). They contend that having a good awareness of the need for culturally sensitive instructional methods can help maximize L2 learning. Jordan (1997) also suggests that students studying EAP may have difficulties in learning when instructors expect students to learn or practise in a way which is different from their normal practice. This can occur if teachers have different cultures from learners, or teachers have been trained to teach EAP where the culture is different from that of the learners. He concludes that EAP courses should include socio-cultural components.

Littrell (2006), who studied the learning styles of students from Confucian cultures, also points out that problems arise when teachers and students are unfamiliar with the culture of the other. She emphasizes that a thorough understanding of the culture and value of learners is helpful for students' learning. Nelson (1995) also studied the effects of Confucian tradition on Japanese and Chinese learners' second

language learning styles. One example she described is the dimension of competition versus cooperation in classroom learning. Different from the Western classroom, Japanese and Chinese learners emphasize learning through cooperation and they try to avoid competition, which may result in embarrassment and loss of face. She concludes that it is important to understand the cultural variation in learning and particularly the pedagogy of the students' home cultures. Stebbins (1995) has a similar view that understanding cultural influences on learning-style modalities can help teachers to develop "culture-sensitive pedagogy" in order to facilitate learning and mediate educational weaknesses. However, she adds that knowledge of cultural influences on learning styles should not be used to explain the merit of one culture or educational system over another, or to stereotype students individually or collectively. Having good knowledge of cultural influences is a way to understand learning styles.

2.2.3.1 Hong Kong Chinese culture and learning

Hofstede and Bond (1984), and Hofstede (1980) studied cultural differences in 40 countries. They concluded that Hong Kong Chinese culture features high on collectivism, low on uncertainty avoidance (risk-taking), and high on power/distance ratio. Trompanaars' (1993) study also confirms that Hong Kong Chinese culture has a high level of collectivism, a good sense of belonging to a social group and a high preference for working in groups to solve problems. Research by Peacock (2001) and Chu's (1997) found that Chinese students do not have a high preference towards individual learning style, when compared to other learning styles. Watkins (2000)

explains that Asian countries are characterised as collectivist in nature, and emphasize group work rather than individual work. In the Hong Kong context, Winter (1996) found that peer tutoring works well in Hong Kong schools and Hong Kong students like collaborating outside tertiary classrooms more than do Western students (Tang, 1996; Winter, 1996). Also, Hong Kong students prefer a collaborative learning environment which could promote deeper learning strategies (Chan & Watkins, 1994).

Regarding students' learning culture, Murphy (1987) suggests that Hong Kong students are reluctant to express opinions in class due to the influence of their Confucian heritage. He found that Hong Kong students never criticized the knowledge of teachers and that Hong Kong classrooms always display a strictness of discipline and proper behaviour. Pierson (1996) describes Hong Kong Chinese learners as passive, dependent learners, who

seem to want to be told what to do, show little initiative... where learning is perceived as something static and directed by others, ... school is the setting where students absorb the knowledge... the teacher decides what is correct and little room is given for the students to exercise personal initiative in the context of traditional Chinese learning culture (p. 52).

Littlewood (1999) explains that students may feel uncomfortable emotionally or intellectually to work independently under the relational hierarchy

which values teacher authority. Scollon and Scollon (1994) point out that teachers are expected to exercise authority according to the Asian notion of authority. Balla et al. (1991) also show that Hong Kong Chinese students have little incentive to learn independently and Evans (1996) explains that Hong Kong schools do not actively encourage independence, individuality and creativity, but value highly obedience and conformity.

Pratt, Kelly, and Wong's (1999) research, which investigates the concepts of "effective teaching" in Hong Kong, also finds that Hong Kong Chinese students treat the text and/or the teacher as the most authoritative source of knowledge. Students are expected to learn foundational knowledge that closely resembles the texts given by the teacher. There is very little debate or ambiguity of the knowledge presented by teachers. Many Hong Kong students assume that teachers have comprehensive knowledge and they rarely challenge teachers and the texts. It was also found that there is a clear hierarchy of authority in the relationship of teachers and students, which is consistent with the Chinese culture. The hierarchy of role frames teachers and students' actions in teaching and learning in and outside classroom. Ho and Crookall (1995) comment that Chinese culture appears to present obstacles to learning autonomy for students in Hong Kong. Kennedy (2002) also points out that the Hong Kong Chinese culture often stresses respect for teachers should be given by not questioning their knowledge and wisdom. Tweed and Lehman (2002) add that Confucius expected learners to be obedient and respect authority figures and that learning virtue is mainly achieved by learning from the past and imitating successful

role models. Tsui (1996) explains further that socio-cultural attitudes promote conformity and cause learners to be passive in class. Students are not encouraged to question and criticize as they are not willing to take risks which may cause them lose face.

A number of researchers (Chan, Spratt, & Humphreys, 2002; Gieve & Clark, 2005; Ho & Crookall, 1995; Jones, 1995; Littlewood, 2003) add that many Asian students, including Hong Kong students, have positive attitudes towards independent learning with proper learning environment, curriculum design and classroom practices. Gieve and Clark (2005) explain that students' preference towards independent learning might be attributed more to the structural elements of the educational system than cultural factors. Jones (1995), Littlewood (1999), and Pierson (1996) also recognise that individual differences could be found within cultural groups.

Rote-learning is also common in Hong Kong classrooms (Ballard & Clanchy, 1991; Biggs, 1996; Carson, 1992; Cross & Hitchcock, 2007; Kumaravadivelu, 2003). Those researchers believe Chinese learners prefer rote learning by memorizing texts, being respectful of teachers and textbooks, being quiet and asking few questions. When learning their first language, Hong Kong students are always asked to copy out and memorize the Chinese characters. Some comment that the Hong Kong examination system stresses memorization and tests students' ability to repeat information, instead of promoting knowledge, understanding and critical thinking.

Many researchers argue that many research studies over-simplify the reality of the learning culture in Hong Kong and that traditional views about Confucian culture

may not be fully reflected in the Hong Kong context. Several researchers have found that Hong Kong students perceive memorization as a process to deeper understanding, instead of mechanical memorizing without meaning. Dahlin and Watkins's (2000) study reveals that Hong Kong Chinese students believe that repetition in memorization helps to create a deep impression on the mind and discover new meaning. Cortazzi also found that Hong Kong students are not passive but reflective. Lee (1996) explains the conceptions of learning in the Confucian tradition. He points out that the Confucian approach to learning also emphasizes deep thinking processes and enquiry. Memorization is a part of the learning process that helps learner become familiar with the text. After memorizing the text, they start to understand, reflect and question. Marton, Dall'Alba, and Kun (1996) also argue that memorization leads to understanding in Confucian culture. Marton et al. (1996) has a similar finding in their study, that culturally Chinese students relate memorization with deep processing. Likewise, Kember, and Gow (1990) examine Hong Kong students' approaches to study and they conclude that Hong Kong students attempt to achieve a deep level of understanding in their study by memorising knowledge.

Tweed and Lehman (2002) found that Chinese students tend to follow a four-stage learning process (1) memorizing, (2) understanding, (3) applying, (4) questioning or modifying, while Jin and Cortazzi (2006) proposed another model which also suggests that Chinese students prefer questioning and inquiring after memorization. Jin and Cortazzi's (2006) learning model of Chinese students suggests that Chinese students might follow models by imitating and memorising knowledge

from teachers and textbooks, in order to achieve extrinsic outcomes (i.e. passing examinations and/or secure employment). At the same time, Chinese students' learning also involves reflective processes: learn from authorities (i.e. teachers and textbooks), and then think thoroughly and raise questions carefully in order to internalise knowledge and achieve intrinsic outcomes (i.e. self-cultivation and achieve moral principle).

Rote learning and memorization are also the key features of Maori pedagogies. Story-telling, songs, and chants are common strategies used for both adults and children to memorize important knowledge and cultural practices. Similar to the Chinese culture, rote learning are not associated with surface learning, but with complex and deep learning (Glynn, 1998; Macfarlane, 2004). The notion of rote learning seems to have different meanings in different learning cultures.

2.2.3.2 Previous research on Chinese and Hong Kong Chinese students' English language learning style preferences

The earliest research related to Chinese students' English language learning style preferences was conducted by Reid (1987). She found that Chinese students had multiple major learning styles due to the multiple cultures involved. The major perceptual learning style preferences of Chinese students were visual, auditory, kinaesthetic and tactile learning, while their minor learning style was individual learning, and group learning was the negative learning style preference. Rossi-Le (1995) found that Chinese learners have a strong visual orientation.

Reid (1987) explains that Chinese students appear to have multiple major learning styles probably because some language and cultural groups may be predisposed towards very positive responses on questionnaires. Stebbins (1995) also points out that the Chinese culture, which emphasizes control and order, may discourage Chinese learners to express negative opinions. Nelson (1995) explains why Chinese learners give group work a minor or negative preference. This may be mainly because the learning-style dimension of cooperation is a natural outcome of the Confucian philosophical and the Chinese value system of collectivism. In Chinese schools, students are usually tightly integrated into small groups which group membership is constant for all the years a child attended a particular school. However, she argues that ESL students from the cooperative Chinese culture are uncomfortable with the ad hoc nature of small-group work in ESL classrooms, where groups continually form and reform according to the task. They are used to groups that are constant for a much longer period of time and also to groups that define their identity which lasts for years. Hudson-Ross and Dong (1990) point out that cooperation frequently occurs outside the classroom, in study groups or in other after school groups. Su (1995) has a similar finding with Hudson-Ross and Dong that Chinese learners seldom work in groups in class but study in groups outside the classroom.

Though the research studies identify the general language learning style preferences of Chinese students, Kennedy (2001) argues that these studies may obscure the differences between Hong Kong, mainland Chinese, Taiwanese and other Chinese learners. He points out that Chinese learning styles are “far more subtle and

complex than they are often made out to be” (p. 88). Liu and Littlewood (1997) also note that the influence of Confucian culture is always overstated in learning style research, that it is often used to explain Chinese learners’ general behavioural trait. In other words, research which involves Chinese learners in general may not be applicable to Hong Kong context. Kennedy (2001) suggests that the context of the learning, and the modes of teaching and assessment have impact on Hong Kong Chinese learners.

Although Kennedy (2001) stresses the differences in language learning styles among Chinese learners from different geographical locations, there is very limited recent research investigating Hong Kong Chinese learners’ language learning styles. Feldman and Rosenthal (1991) comment that “...Hong Kong Chinese youth... placed less value on individualism, outward success and individual competence” (as cited in Hau & Salili, 1996, p. 127). They generally value group harmony in learning situations over achievement, and are hesitant to stand out from the group. Lam (1997) investigated the English language learning styles of Hong Kong university learners studying in English for Occupational Purposes (EOP) programmes. Her research shows that Hong Kong students do not favour learning activities that require active participation and individual assessment. The results also revealed that students enjoy working in groups more than working individually. Lam explains that this may relate to the culture of the Hong Kong society which stresses collectivism. She also suggests that students may have a perception that sharing work is easier than individual work. She concludes by saying that individual learning may not be effective in the EOP

contexts. Tang (1996) investigates collaborative learning in Hong Kong tertiary classrooms. His findings suggest that Hong Kong tertiary students generally like working collaboratively when preparing for assignments as they believe collaborative learning fosters deeper thinking process and helps to generate better academic work. However, most of the participants do not prefer to form study groups for test preparation as they doubt their classmates' understanding of the knowledge. The reason for this was not suggested by Tang's (1996) article. However, this may imply that students have different learning style preferences in different learning contexts.

Another important research finding is many Hong Kong learners find that role-playing is the most challenging and least relaxing task as it requires both individual work and they have to "stand out of the class". Peacock's (2001) research indicates that Hong Kong university students favour kinaesthetic and auditory learning styles, and the least popular are individual and group learning styles. Explanation of the language learning styles of the students is not provided in his research. However, he suggests that the origin of student' learning styles should be further investigated. His research also reveals that there is a mismatch between learning styles and teaching styles in English language university classrooms in Hong Kong, especially between native English teachers and their students. Some respondents comment that the mismatch makes them "frustrated or uncomfortable; lose interest in the lesson and paid less attention... got bored and did not learn as much" (Peacock, 2001, p. 12). However, some also report that they "just adjust their own style" and "it doesn't affect them because they learn things by themselves"

(Peacock, 2001, p. 13). Peacock (2001) concludes that matching learning and teaching styles promotes second language learning and can provide learners with an effective learning environment.

2.2.4 Learning styles and educational background

Previous research (Kolb, 1981; Melton, 1990; Peacock, 2001; Reid, 1987; VanderStoep, Pintrich, & Fagerlin, 1996; Vermetten, Lodewijks, & Vermunt, 1999) on language learning styles indicated that students from different disciplines had different learning styles. Peacock (2001) found that Humanities students in Hong Kong had a higher preference for auditory and individual learning styles than science students. Science students had a higher preference for group learning style than humanities students, though group style was a minor preference for science students. Also, second-year students had a higher preference for kinaesthetic style than first-year students. Reid (1987) found that Engineering and Computer Science students were significantly more tactile than Humanities students. Melton (1990) indicates that Language and Humanities students had stronger preference to kinaesthetic learning than Science/Medicine and Business majors. Kolb (1981) suggests that tertiary education is a major factor in shaping learners' learning styles. Several researchers (Kolb, 1981; Melton, 1990; Slaats, Lodewijks, & van der Sanden, 2012; Vermetten, Lodewijks, & Vermunt, 1999) add that the socialization in the course of learning and/or the process of selection into the discipline might be related to the development of learning styles.

Additionally, there is very limited research that has been conducted to investigate the type of schooling students have attended (e.g. study locally versus study abroad) before their entry to tertiary study. However, there is some research related to the length of time students have learnt English and length of time attending classes taught by native English teachers. A number of researchers (Melton, 1990; Reid, 1987; Reid, Vicioso, Gedeon, Takacs, & Korotkikg, 1998) found that the longer students had studied English, the higher preference towards auditory learning. Reid et al. (1998) suggest that this could be because learners found that auditory learning is essential for language learning. Moreover, Melton (1990) found that students had higher preference towards kinaesthetic and group learning when they studied English for longer. She points out that kinaesthetic learners are more likely to take risks and this is an important quality for success in language learning. Her findings also show that the longer students had attended classes taught by a native English teacher, the higher the preferences towards kinaesthetic learning. However, the reason for this was not identified in her research.

2.2.5 Learning styles and gender

Gender is a variable that was extensively studied in previous literature on learning styles. It is believed that males and females have different learning styles due to gender characteristics, though some researchers maintain that research context can also lead to the differences in learning styles.

Several learning style studies (Amir & Jelas, 2010; Baneshi et al., 2014; O’

Faithaigh, 2000) have shown that males had higher preference towards independent learning than females. In spite of the fact that those studies have similar findings on gender differences in learning styles, very limited literature explains the differences in detail. Some researchers (Ashmore, 1990; Melton, 1990; Oxford, 1995; Severiens & ten Dam, 1997) suggest that the socialization process may attribute to the gender differences. Oxford (1995) defines the term “socialisation” as the process of educating the young and integrating them into society through different social roles. She gives some examples of socialization at work for boy and girls in the US. For example, parents respond differently to boy babies and girl babies; and teachers pay more attention to aggressive and disruptive boys than to girls with the same behaviours. Severines and ten Dam (1997) add that the process of searching for gender identity in school and outside school might determine how females and males behave in educational settings. Females tend to use the feminine attributes – tender and passive, while males tend to use the masculine attributes – assertive and bold. Ashmore (1990) proposes a multiplicity model of gender identity model in which gender identity is considered to consist of several components, such as personality attributes, interest abilities, social roles and physical appearances. However, those researchers did not explain clearly why males and females had higher preference towards certain learning styles than the opposite sex. For instance, there is not much information about why males had higher preference to tactile learning than females.

Another common source of gender differences in learning styles researchers suggested is brain hemisphericity. Leaver (1986) explains that each hemisphere deals

with language differently – the left hemisphere interprets the word meanings and the right hemisphere interprets verbal tones and patterns. Oxford (1995) concludes several research that males usually process language information more readily through the left hemispheric, analytic mode, but females might process language learning data through an integration of left- and right- hemispheric modes. This might explain why the male students in this study were more analytic than females.

However, previous research results on gender differences of learning styles are sometimes inconsistent regarding which learning styles are preferred by males or females. For instance, Isemonger and Sheppard (2003), and Oxford's (1995) research indicates that male students are more kinaesthetic than females; in contrast, Melton (1990) found that males are more kinaesthetic than females. Hence, some researchers (Baneshi, Tezerjani, & Mokhtarpour, 2014; Severines & ten Dam, 1997) explain that the differences in learning styles might be due to the context of the research and that a great variety of factors, such as educational backgrounds and culture, can influence students' learning style preferences. Watkins and Hattie (1981), who investigated the interaction effect of gender and field of study, found that differences between males and females vary across their major study fields.

2.2.6 Summary

This section reviews learning style and language learning style research conducted in different countries, and most importantly, it reviews Chinese ESL/EFL students' language learning styles in different contexts. By drawing on the literature,

it can be concluded that:

- Different cultural backgrounds may lead to different learning styles – it is important to understand how different cultures affect learners’ learning styles in order to adapt teaching styles according to learning styles for maximizing students’ learning outcomes.
- There is considerable research related to Chinese ESL/EFL learners’ learning styles and it is generally believed that Chinese learners’ learning styles are affected by the Confucius culture. Chinese learners are generally stereotyped as “passive” learners and focus much on rote learning. However, it was found that some research studies may over-generalize the term “Chinese learners” and neglect the cultures of Chinese learners from different places – research findings related to Chinese ESL/EFL learners may not reflect the true picture of Hong Kong ESL/EFL learners. There is very limited research into Hong Kong ESL/EFL learners’ learning styles, especially in EAP context and at community college level.
- The socialization processes in families, schools and the society may cause cultural and gender differences in learning styles.
- Besides cultural background and gender, educational background, discipline and year of study may be related to language learning styles. However there is a dearth of research in that area.

This section has identified a research gap in the existing literature – English

language learning styles of ESL/EFL community college students in Hong Kong, and the related factors that may affect their learning styles, such as educational background and year of study.

As discussed in this section, learning styles may be related to teaching styles for enhancing learning outcomes. Before exploring the relationship between learning styles and teaching styles, it is important to have an in-depth review of the literature on teaching styles. The next section will mainly focus on teaching styles in language classrooms, but teaching styles in general education will also be examined as language teaching styles are based on general teaching styles.

2.3 Teaching styles

2.3.1 Definitions

The term *teaching styles* refers to the general classroom behaviour associated with and carried out by an instructor, and is not restricted to a teaching method or a technique. The term teaching strategies sometimes makes people confused with the term teaching styles. Teaching strategies are the specific activities which are used to enhance the method of instruction and facilitate the knowledge acquisition of learners. Teaching styles may be associated with teachers' personal teaching and learning experience, educational background and cultural background. Jarvis (2004) and Grasha (1996) describe teaching styles as an instructor's implementation of philosophy, beliefs, values, and attitudes towards the exchange of teaching and

learning. Similar to Jarvis and Grasha, Heimlich and Norland (1994; 2002) define teaching styles as teachers' teaching behaviours and teaching beliefs. Cross (1979) defines teaching styles as the ways teachers collect, organize, and transform information into useful knowledge. Grasha (1996) states that teaching styles are multidimensional and can affect teachers' presentation of information, interaction with students, classroom task management and supervision of coursework. Cooper (2001) defines teaching style as the sum of instructional activities, techniques, and approaches that a teacher prefers to use in front of a class. Conti (1998) adds that teaching styles persist regardless of the teaching conditions. However, Cornett (1983, p. 28) argues that, although teachers have a general overall style, it does not mean "they cannot add to or modify that style as circumstance warrant". She explains that modifications of teaching style can create a more successful experience for both learners and teachers. Heimlich and Norland (1994) define teaching styles as the implementation of personal teaching philosophy which contains beliefs, values, and attitudes towards the teaching-learning exchange. They suggest that teaching style is "the product of facets" of teachers' life. This may include teaching and learning experience, educational background, personal likes and dislikes, and cultural background. Teaching styles might be able to be identified by observing teachers' teaching behaviour, such as the ways of presenting information, organizing discussion, lesson planning, and ways of facilitating learning activities.

In terms of second language learning and language teaching styles, Cook (2008, p. 235) defines a language teaching style as a "loosely connected set of teaching

techniques believed to share the same goals of language teaching and the same views of language teaching and the same views of language and of second language learning.” She explains that teachers use different techniques in various ways within a particular teaching style. For instance, in the audio-lingual style teachers use role-play and structure-drill repetition dialogue to practise English and mainly focus on spoken language. Peacock (2001) defines second language teaching style as the instructor’s natural, habitual and preferred way of presenting new information and teaching language skills in classroom.

2.3.2 Relevant research on teaching styles

Many researchers (Heimlich & Norland, 2002; Giles et al., 2006; Razak, Ahmad, & Shad, 2007; Soliven, 2003) point out that teaching style is vital for providing students with good learning experiences, while some (Akbari & Allvar, 2010; Black, 1993; Miglietti & Strange, 1998) link it to students’ achievement outcomes. However, there is still a very limited amount of research which has been done to identify teaching styles, especially in second/foreign language education.

Many research studies identify teaching styles by developing classification systems. Similar to second/foreign language learning styles, most of the research on second/foreign language teaching styles is based on classifications derived from the general psychology. The following includes different categories of teaching styles identified by educational scholars in the general psychology field:

- Proactive and Reactive (Lenz, 1982)

- Content centred versus People centred (Robinson, 1979)
- Teacher-centred versus Learner-centred (Conti, 1985; Opdenakker & Van Damme, 2006)
- Drillmaster or recitation class, content centred, instructor centred; intellect centred, and person centered (Axelrod, 1970)
- Didactic (teacher-controlled through lecturing), Socratic (teacher-directed through the use of questions), and Facilitative (student-centred) (Campbell, 1996)
- Formal – Informal (Bennett, Jordan, Long, & Wafe, 1976)
- Open – Traditional (Solomon & Kendall, 1976)
- Intellectual excitement – Interpersonal rapport (Lowman, 1995)
- Expert, formal authority, personal model, facilitator, and delegator (Grasha, 2002; 1996)
- Associative, deliberative, expositive, individualistic, interrogative, investigative, performative, and technological (Beck, 1998)
- Visual, aural, interactive, print, kinaesthetic, haptic, olfactory (Galbraith & Sanders, 1987)

There is very limited second/foreign language education research into the classification of second/foreign language teaching styles. The following shows the categories of language teaching styles found in the second/foreign language education field.

- Academic, audiolingual, social communicative, information communicative, mainstream EFL, and others (Cook, 2008)
- Visual, auditory, group, kinaesthetic, individual, and tactile (Peacock, 2001; Salem, 2001)

Although the categories identified by second/foreign language education researchers are specifically designed for investigating second/foreign language teaching styles, it is clear that the categories are quite similar to the classifications identified in the general psychology field.

The two-dimensional model of Intellectual Excitement and Interpersonal Rapport developed by Lowman (1995), which has nine combinations and represents a style of instruction that students will learn best, has been used by ESL researchers. However, Larson (2007) points out that the instrument is a rigorously developed two-dimensional model for identifying the range of teaching styles of different teachers. Intellectual Excitement focuses mainly on the content to be learnt and how knowledge is presented. Interpersonal Rapport emphasizes learners' and focuses more on interpersonal relationships. Akabari and Allvar (2010) use the Intellectual Excitement – Interpersonal Rapport model to examine the correlation between EFL university students' English language achievement and teaching styles. They found that there is a positive correlation between Intellectual Excitement teaching style and students' language achievement. They explained that when teachers present language knowledge clearly and show the connections between topics, students are more confident in learning and are interested in the content. Nevertheless, their research

does not show a high correlation between Interpersonal Rapport teaching style and students' language achievement. The research shows a discrepancy between theory and practice that students can achieve more if teachers demonstrate high Interpersonal Rapport as acknowledging students' feelings and communicating with students (Larson, 2007). Akabari and Allvar (2010) did not provide any explanation for the discrepancy.

Grasha (1994) observes college classroom teaching and identifies the following five teaching styles: expert, formal authority, personal model, facilitator, and delegator. This is presented in Table 2.4.

Table 2.4. Grasha's Five Teaching Style Categories

Style	Description
Expert	Possess knowledge and expertise that students need. Concerns with offering detailed knowledge and information so as to ensure that students are well-prepared.
Formal authority	Concerns with providing students with positive and negative feedback, establishing learning goals, expectations and rules of conduct for students.
Personal model	Provides students with personal examples and guides students by showing them how to do things, and encourages students to observe and emulate the instructor's approach.

Facilitator	Emphasizes teacher-student interaction. Works with students on projects in a consultative way and provides support and encouragement.
Delegator	Concerns with developing independent learning and encourages students to work independently on projects or as part of teams. The teacher is available as a resource person.

Grasha's (1994) goals for developing a conceptual model of teaching style were to explore the stylistic qualities that college teachers possessed and to offer suggestions for when and how to employ them. Although he identifies five different teaching styles, he suggests that categorizing teachers' teaching styles into "one of five boxes" is "premature" (p. 142). Instead, he finds that it is possible that teachers possess each of the teaching styles to varying degrees that the teaching styles could be blended together. He therefore developed four clusters of teaching styles: Cluster 1 (expert/formal authority style – i.e. traditional teacher-centred classroom processes), Cluster 2 (personal model/expert/formal/authority style – i.e. provides personal modelling; guiding and coaching), Cluster 3 (facilitator/personal model/expert style – i.e. emphasizes collaborative and student-centred learning processes), and Cluster 4 (delegator/facilitator/expert style – emphasizes independent group and individual learning activities). Each cluster reflects some blends of styles are dominant and others are secondary. He later developed a five-point Likert scale Teaching Style Inventory (1996) to investigate teachers' teaching styles. He finds that teachers who

have higher academic rank tend to associate with the expert and formal authority styles. In addition, teachers tend to use the facilitator and delegator styles when teaching higher-level classes. His research also shows that the formal authority style can be more commonly found in foreign language classroom, when compared with other academic disciplines, such as mathematics and computer science. Razak et al.'s (2007) research on English for Specific Purposes (ESP) students' preferred teaching styles use Grasha's Teaching Style Inventory. Their research shows that ESP students had a high preference for the facilitator style, while the formal authority style was the least preferred. It also shows that the most dominant teaching style of ESP lecturers was the Expert teaching style. The researchers explain that the traditional lecture-style of teaching is dominant in the ESP classrooms they investigated is mainly because many lecturers lack experience in teaching ESL, especially most of the teachers are not degree holders of ESP teaching. Stimpson and Wong (1995) point out that some teachers tend to use a teacher-centred approach as they may feel more comfortable with a structured style in which they can control the teaching pace. Grasha (1993) and Roslind (2003) also suggest that teachers' teaching styles can be influenced by several factors like learning goals, type of course, teachers' educational background, level of studies, and academic discipline.

Joyce, Weil, and Calhoun (2015) categorize teaching styles by developing four "families of models". The first teaching model is the behavioural system approach that includes explicit instruction, mastery learning and direct instruction. The second is the information-processing approach which includes inductive learning, concept

development, intellectual development, and inquiry-based learning. The third one is the personal family of models that emphasize student-centred learning, which include nondirective teaching and self-concept development. The last one is the social family which includes collaborative learning and role playing. They emphasize that teachers should be flexible and understand learners' needs before implementing those models.

Beck (1998) summarizes teaching strategies suggested by 25 teaching textbooks and develops a taxonomy of teaching strategies. He categorizes teaching strategies into eight types: associative (i.e. group learning, e.g. group discussion and cooperative task groups), deliberative (i.e. emphasizes thoughtful exchange of ideas, e.g. debate and conference), expositive (i.e. to offer information from an authoritative source to a receiving source, e.g. lecture and textual readings), individualistic (i.e. tailor instruction according to individual students' needs, e.g. peer tutoring and mastery learning), interrogative (i.e. focuses on asking thoughtful and high-order questions, e.g. interviews and case study), investigative (i.e. inquiry learning, e.g. experimentation and case study), performative (i.e. involves creative expression and a source of entertainment, e.g. dramatic play and gaming), and technological (i.e. using technology, i.e. video conferencing and audiotaping). Although Beck (1998) uses the term "taxonomy of teaching strategies", instead of teaching styles, it has the same meaning as "teaching style" identified by other researchers, which is a set of teaching strategies or techniques for the goal of teaching and learning in classroom. There is no research using the taxonomy of teaching strategies developed by Beck.

Cook (2008) divides second/foreign language teaching style into six categories:

academic (i.e. focuses on grammatical explanation and translation), audiolingual (i.e. emphasizes teaching the spoken language through dialogues and drills), social communicative (i.e. focuses on teaching language for meaningful communication between people), information communicative (i.e. focuses on exchange of information), mainstream EFL (i.e. combines academic and audiolingual styles), and others (i.e. using humanistic methods). She developed a short questionnaire for teachers to quickly identify their language teaching styles. However, a careful review of literature has not located an research which uses Cook's classification.

Salem (2001) and Peacock (2001), both investigated second/foreign language teaching styles, and categorize teaching styles according to the perceptual learning style preferences identified by Reid (1987).

There is limited published research that has been conducted to investigate different variables, such as language teachers' educational and cultural background, related to language teachers' teaching styles, when compared with the learning style literature. The main reason for this cannot be identified in literature; this may possibly be because people assume that teachers should develop their teaching styles according to the learning styles of the students, not according to their own personal background. As explained in the section on teaching style definitions, teaching styles contain personal beliefs, values or philosophy towards teaching-learning exchange. Nevertheless, it cannot be denied that teachers' teaching styles can be influenced by different factors, such as teachers' cultural and educational background, teaching experience, and learning experiences. A number of researchers (Gregore, 1979;

Kasim, 2012; Pajares, 1992; Witkin, 1973) found that the learning environment the educator comes from may contribute to the development of teaching styles. Ryan's (1970) study shows that teachers who come from above average financial and intellectual backgrounds tend to have higher levels of originality and imagination than teachers from other backgrounds.

2.3.3 Hong Kong Chinese teaching culture

There is limited teaching style literature related to teaching ESL/EFL in Hong Kong, though there is research related to tertiary teaching in general disciplines. The concept of teaching style is not very common in Hong Kong classroom research. Nevertheless, there are some studies related to teachers' perceptions about effective teaching, which may reflect the general teaching culture in Hong Kong.

Peacock (2001) finds that ESL/EFL instructors at Hong Kong universities strongly favour the kinaesthetic style, group and auditory styles, and disfavour tactile and individual styles. He also finds that there is a large difference in teaching styles by ethnic origin. His research indicates that Chinese teachers favour auditory, while Western teachers have negative preference towards auditory style. The reason for the differences in teaching styles is not identified in his research. The research also shows that most ESL/EFL teachers believe that their students expect them to play an important role in correcting language errors, and providing students with a good model, though less than half of the participants agree that their students expect teachers to encourage independent learning and adopt a teacher-centred approach.

Flowerdew, Miller, and Li (2000), studied Hong Kong Chinese lecturers' perceptions, problems and strategies in lecturing in English to Hong Kong university students, and found that most lecturers describe their lecturing style as "chalk and talk". They prefer to provide material with the use of a white board and/or overhead projector as visual aids as they believe that students expect it and they find that it is the "best" method to teach large groups. There are a few lecturers who prefer to adopt an interactive style of lecturing, but they believe that an interactive style can only be used with mature students (e.g., in part-time evening courses) or with small lecture groups. The research also shows that many lecturers prefer to relate real world experience with the lecture content. They believe that giving plenty of examples can best illustrate important concepts and their applications, and help the students understand how they can apply theoretical concepts to the society at large.

Another similar study (Pratt, Kelly, & Wong, 1999), which investigates Hong Kong university lecturers' and students' perceptions towards effective teaching,, revealed that the Hong Kong Chinese faculty believe that effective teachers should be experts and authorities in their discipline. Teachers are expected to be well-prepared for lectures by delivering knowledge to students in the best form. They should also always prepare a clear set of well-structured tasks, offer specific and critical feedback, and be directed towards examination. Memorization is encouraged as a way of leading to deep understanding of knowledge. In addition, from the respondents' points of view, effective teachers should have a close and protective relationship with students, which is similar to a coach or a parent. They should care about students,

guide students' learning and personal development. Teachers' and students' relationships are part of a social hierarchy that the lower hierarchy should respect the higher hierarchy.

Ng's (2003) study examines secondary school teachers and students' perceptions of "a good language teacher". The research shows that in terms of teaching practice, many secondary school teachers believe good language teachers should always provide suitable materials to cater for students' needs, be well-prepared for the lessons, provide daily examples to illustrate language concepts, design interactive games to encourage language outputs, mark students' assignments seriously by pointing out the mistakes and explaining to students, and give appropriate amounts of homework. The findings of this study are very similar to Pratt, Kelly, & Wong's (1999) study described above.

In summary, most research studies reviewed show that teachers in Hong Kong expect themselves to be an expert academically. They believe teachers have important roles of preparing well-designed teaching materials according to students' needs, providing students with models to illustrate how different concepts can be applied in daily life, and giving students feedback by pointing out and explaining errors.

2.3.4 Summary

Compared with learning style research, there are very few studies related to teaching styles, both in general education and second/foreign language education. The language teaching style models and research instruments are mainly based on

general education. This may be because the present teaching style research does not clearly reflect the actual situation of second/foreign language teaching. Moreover, very limited research into teaching styles of Hong Kong ESL/EFL teachers could be located, though there is research related to the teaching culture in Hong Kong. Furthermore, most teaching style research does not show how different factors may contribute to the development of teaching styles.

This section further reveals a research gap in the existing literature – teaching styles of ESL/EFL community college teachers in Hong Kong, and the related factors. The next section relates the previous section with this section by investigating the relationship between learning styles and teaching styles in classroom teaching.

2.4 The relationship between learning styles and teaching styles in second/foreign language education

In the field of style research, there are different views about the relationship between learning styles and teaching styles. Some researchers suggest that learning styles and teaching styles should be well matched in order to enhance students' motivation of learning. This section will explain the relationship between learning styles and teaching styles with reference to motivation theory. Some experts advocate that research evidence for the “matching theory” is inadequate and that research instruments are not valid and reliable. Some also argue that it is impractical due to limited educational resources and this may also limit students' opportunities to extend

their learning styles. This section will examine researchers' views towards the relationship between learning styles and teaching styles in second/foreign language education.

2.4.1 Motivation theory: Matching learning styles and teaching styles

Motivation plays a vital role in ESL/EFL classroom because it can influence how much input learners can take in, how long they maintain the language skills after their studies, how often learners use language strategies, and how they are willing to interact with others using the target language (Trang & Baldauf, 2007). Many motivational theorists conclude that teacher-related factors contribute the greatest in demotivation. There are various factors that could demotivate language learners and hinder learners from pursuing their goals. Trang and Baldauf (2007) state that there are two types of demotives: (i) internal attributions – i.e. students' attitudes towards English, their learning experiences, and their self-esteem; and (ii) external attributions – i.e. teacher-related factors, the learning environment, and other external factors. Jones (2006) contends that the greatest source of demotivation for students is teachers' personality and teaching styles. Bowen and Madsen (1978) add that teaching style is a primary determinant of student motivation. Ebata (2009) states that external motivating factors are under teachers' control, and therefore teachers should be aware of their teaching styles.

Numerous research studies on learning styles (Riding & Chemma, 1991; Dunn, 1990; Gregorc, 1979; Myers & Myers, 1995), especially on second/foreign language

research (Reid, 1987; Carbo & Hodges, 1988; Nelson, 1995; Kinsella, 1995; Hyland, 1993; Tudor, 1996), have shown evidence that students taught in preferred learning styles were more motivated to learning and more able to achieve greater success than those taught in instructional/teaching styles different from their preferred styles. It was also found that when knowledge is further reinforced through students' secondary preferences, students' learning would be further enhanced (Kroon, 1985). On the contrary, when mismatches between teaching styles and learning styles occur, students' language learning may be adversely affected (Reid, 1987; Cotazzi, 1990; Oxford, Hollaway, & Horton-Murillo, 1992; Felder, 1995; Stebbins, 1995; Jones, 1997; Ehrman, 1996; Littlewood, Liu, & Yu, 1996; Peacock, 2001; Tuan, 2011). Oxford and Lavine (1992) add that "learners whose style preference is conspicuously different from teacher's may be plagued by anxiety and respond negatively the teacher, the classroom, and the subject matter" (p. 38). In other words, having a good awareness about the preferred learning styles of students can help teachers to understand and cope with students' course-related learning difficulties and ultimately help alleviate their frustration levels (Dunn, 1990; Kinsella, 1992). Reid (1996) asserts that matching language teaching styles and language learning styles can achieve equal educational opportunity in language classrooms and build student self-awareness. In addition, Peacock (2001) contends that matching students' and teachers' teaching styles can motivate students to work harder in and outside classroom.

Xiao's (2006) research on Chinese ESL students' learning styles and Irish

English instructors' teaching styles reveals that the mismatch between learning styles and teaching styles affects students' attitudes toward and interest in the instructors' teaching in class. Some student participants of the research expressed dissatisfaction towards the attitudes of their teachers as they found that their teachers' classroom role was different from the conventional functions of a teacher in their culture. They expect their teachers to be the focus of the class and play parental roles in language learning, but their Irish teachers usually acted as a facilitator or a coach. Xiao (2006) observed an English class and found that the conflict led to reduction of interest in learning and caused anxiety, which was compounded by students' language deficiency. The research may imply that the mismatch between teaching styles and learning styles in second/foreign language classroom, especially with weak students who have limited language proficiency, may affect language learning. The researcher points out that although it may not be easy to match teaching styles and learning styles, it is better for teachers to have basic knowledge of students' learning styles in order to narrow the mismatch and enhance language learning.

2.4.2 Opponents of the matching theory

On the contrary, opponents of the "matching theory" argue that the evidence shown in empirical studies is not clearly defined and learning style instruments may not be valid and reliable. For instance, Coffield, Moseley, Hall, and Ecclestone (2004), reviewed 13 different learning style models, and pointed out that "the evidence from the (learning style) empirical studies is equivocal at best and deeply

contradictory at worst” (p. 121). Similarly, Smith, Sekar, and Townsend (2002) reviewed 18 studies on learning styles and teaching styles and found that half of the studies were in favour of the matching hypothesis, while another half of them showed that teaching was more effective when mismatch occurs. Reynolds (1997) conducted eight empirical studies, with five of them supporting of matching, the other three against the hypothesis. Ford & Chen (2001) conducted three empirical studies on matching and mismatching, and concluded that matching is linked with improved achievement. He also added that the effects of matching and mismatching “may not be simple, and may entail complex interactions with other factors such as gender, and different forms of learning” (Ford & Chen, 2001, p. 21). Coffield et al. (2004) suggest that subject matter is also an important factor often neglected by learning theorists on deciding the effects of matching and mismatching. Those cited empirical studies which were against matching theory were not conducted in second/foreign language classrooms, and therefore may not reflect the effects of matching or mismatching of learning styles and teaching styles in second/foreign language learning.

Oxford and Lavine (1992) comment that matching teaching styles and learning styles may not be feasible in some programmes due to limited resources. Furthermore, it is difficult to match the teachers’ and students’ styles in all dimensions in reality. They warn that both parties would be deprived of the ‘hidden benefits of “style wars”’. Deliberate mismatching allows learners to develop compensation skills for dealing with situations where style conflicts exist, such as in the business world when dealing with different people. Asking teachers to adopt an

unfamiliar style may also reduce effectiveness. Additionally, Felder (1995) proposes that the teaching styles which learners prefer may not be the best for their learning as this may reduce the opportunity for students to extend their learning styles, which are necessary for their future development. Some advocates of deliberate mismatching comment that “constructive friction” by adopting a wide variety of teaching approaches can avoid boredom and push students to be more responsible for the content, process and outcomes of their learning. Kolb (1984) believes that the aim of mismatching is to allow students to experience the tension and conflict in order to promote personal growth and creativity.

Joyce, Weil, and Calhoun (2015) and Hunt (1971) point out that if the environment is matched to the development of learners, they may become satisfied with that stage and that will limit their ability to integrate new information and form new conceptual systems. Personalistic psychologist, Carl Rogers (1982) also contend that learners may confine themselves to domains in which they feel safe. Joyce, Weil and Calhoun (2015) add that most developmental stage theories (Erikson, 1950; Harvey, Hunt, & Schroeder, 1961; Piaget, 1952) emphasize that accommodation is necessary if higher levels of development have to be reached. For example, Piaget’s (1952) cognitive child development theory states that the assimilation of new information will force the accommodations that will lead to the successive stages of development. However, arrestation may be possible when people move upward through the Piagetian stages. Joyce et al. (2015) point out that having sufficient accommodation to bring about reconfiguration to a new stage requires a “letting go of

the confines of one level so that the essentials of the next level can be reached” (p. 367). That means it is essential for learners to face challenges in the developmental process in order to develop new levels of competence. They also use Vygotsky’s (1978) zone of proximal development (ZPD) theory to explain that the conceptual understanding and processes should be just beyond learners’ zone of comfort, but not too demanding that learners cannot manage. Joyce et al. (2015) suggest that teachers should scaffold the learning process by encouragement and academic support, and educators should develop an optimal mismatch in order to maximize learners’ levels of capability.

Carol Dweck, an educational psychologist in the field of motivation and personality, also share similar views with those developmental theorists (Dweck, 2000, 2007; Education World, 2004). She advocates that learners should be taught to relish challenges and the skills to cope with setbacks in order to enhance their self-esteem and learning motivation. If learners just stay at the level which they are satisfied with, it is less likely that they can maximize their potential. Dweck (2007) labelled those learners who avoid challenges and stick to what they know they can do well as “fixed mindset”. They usually are vulnerable to failure and unable to cope with setbacks, and thus limit their intellectual growth. On the other hand, learners who hold “growth mindset” believe that their learning ability can be developed and make every effort to cope with setbacks in order to reach higher levels of achievement (“Fixed Mindset,” 2007). Dweck’s theory of mindset implies that introducing unfamiliar teaching styles to students can increase learners’ self-esteem and

motivation in the long term.

Felder (1993) warns that unintentional mismatching can cause negative impacts to learning outcomes. This may occur when a teacher is not aware of his/her own teaching styles and teaches only in a particular style which favours certain learners, disadvantaging others. His empirical study on US college science education indicates that when mismatches are extreme, learners tend to lose interest in science and switch to other fields. Students whose learning styles do not match with the prevailing teaching styles of science teachers tend to have lower grades compared to those who are better matched.

A number of researchers (Kinsella, 1995; Li & Qin, 2006; Littrell, 2006; Melton, 1990; Oxford & Hollaway, 1992; Peacock, 2001; Reid, 1987; Sprenger, 2003; Tuan, 2011; Willing, 1988; Zhou, 2011) contend that adopting a multi-style approach in classroom can accommodate different learning styles of students and help learners to extend their learning styles. Peng (2002) suggests that “by appealing to different learning styles, more effective learning can be achieved to facilitate attention, motivation, memory, and comprehension” (p. 2). Claxton and Maurrell (1988) discuss the benefits and drawbacks of matching teaching and learning styles. They suggest that matching is appropriate for teaching poorly prepared or new college students, in order to reduce their learning anxiety. However, mismatching allows students to learn in new ways, but it “should be done with sensitivity and consideration for students, because the experience of discontinuity can be very threatening” (p. 1).

2.4.3 Summary

To summarize, understanding the preferred learning styles of students is important for curriculum design, teacher training, material development and student orientation (Chang, 2003). Teachers should be aware of their teaching styles so as to ensure that there is no extreme mismatch between teaching styles and their students' learning styles. Matching learning styles and teaching styles may benefit students to a certain extent, which is according to the subject matters, level of students and other possible factors. Deliberate mismatching may create constructive conflicts and benefit students in terms of their personal growth, creativity, and their ways of learning. Nevertheless, there is a lack of empirical studies regarding the effects of matching or deliberately mismatching learning styles and teaching styles in second/foreign language classroom.

2.5 Chapter summary

Drawing on the existing learning style and teaching style research, in particular on second/foreign language research, this chapter establishes a clear theoretical orientation to this research – examining EAP students' English language learning styles and teachers' teaching styles in Hong Kong community colleges, investigating the possible factors related to learning styles and teaching styles, and exploring the relationship between learning styles and teaching styles in language classroom.

The literature highlighted in this chapter suggests that there are several important

issues related to learning styles and teaching styles that researchers and educators should be aware of:

- Learners may have multiple learning styles that are not mutually exclusive.
- Both internal and external factors can influence students' learning styles.
- Learning styles can be measured through different research instruments, such as questionnaire surveys and interviews.
- Learners' learning styles may be flexible. They may have multi-learning styles in order to suit different tasks.
- Teaching styles may also be flexible, so that style researchers encourage teachers to adapt their teaching styles.
- The relationship between learning styles and teaching styles remains controversial in style research. Matching or mismatching learning styles and teaching styles may have different effects on students' learning.

Some of the issues in the literature are still yet to be explored. This study will explore how some of those issues are related to English language learning and teaching.

Although there is a lack of research which explores community college students' language needs, it is obvious that community college students may have similar, or even more language difficulties that university students face. Clearly, EAP teaching is essential for students at community college level as most of them expect to continue their studies at university. The present study, therefore, aims at investigating students'

learning styles and teaching styles in order to draw educational implications for EAP teaching and learning.

Chapter 3: Research Methodology

3.1 Overview

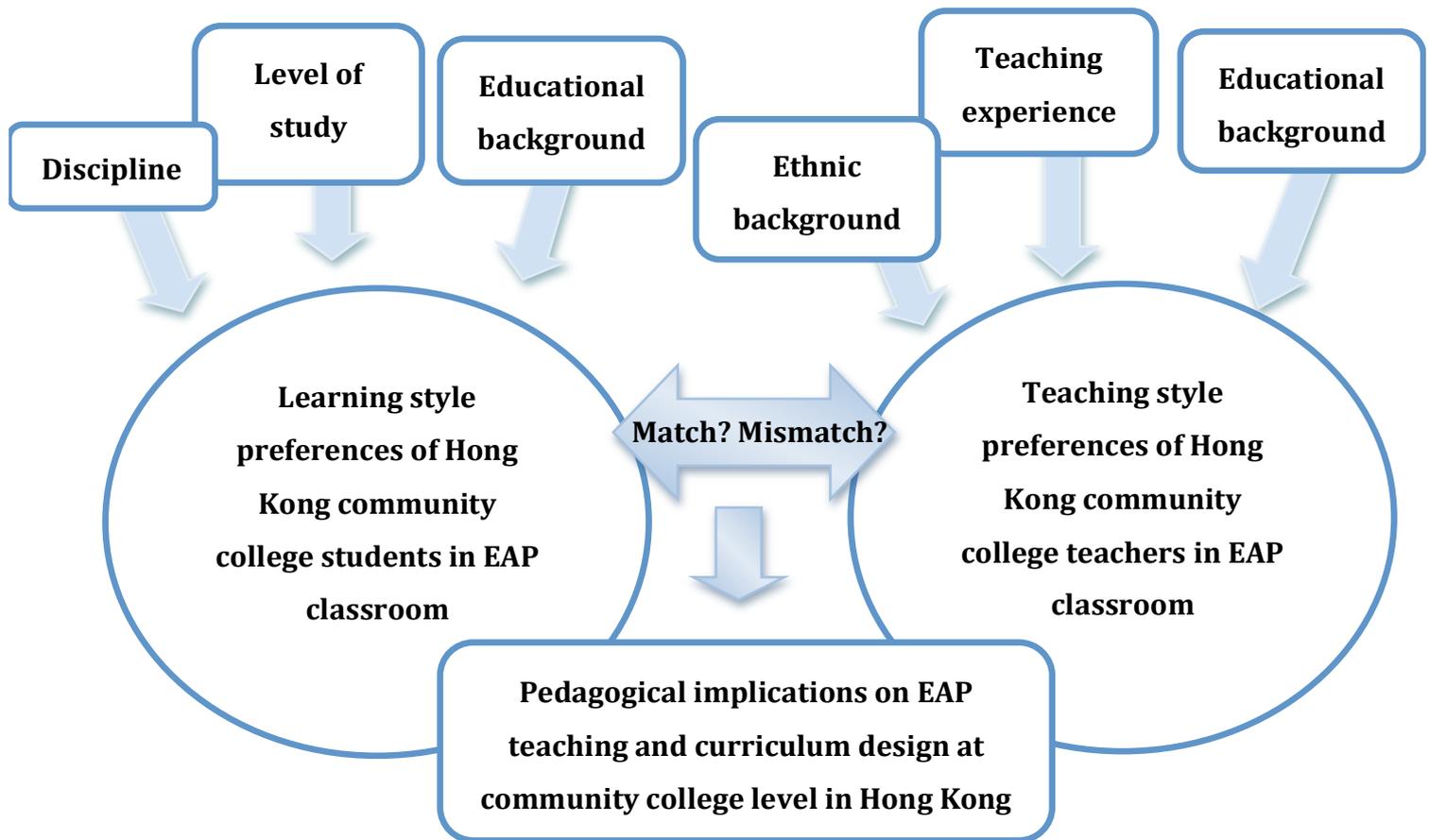
Chapter 1 has set out the main purpose of this study – to explore Hong Kong community college students’ language learning styles and teachers’ language teaching styles in EAP contexts. That is, this study attempts to investigate the English language learning styles and teaching styles of Hong Kong community college students and teachers, how different variables influence students’ and teachers’ English language learning styles and teaching styles, the relationship between their learning styles and teaching styles and its effects on EAP students’ language learning.

This chapter aims to explain the research design of this research study. It follows the interactive model of research design proposed by Maxwell (1996; 2005), which contains five main components: research purpose, conceptual context, research questions, methods, and validity. It first describes the conceptual framework of this study and reiterates the main research purpose. After that, it presents the research questions of the study, followed by the research methods and procedures for the study. This chapter ends with a discussion of the validity and reliability of the research instruments.

3.2 Conceptual framework

This research is based on the conceptual framework illustrated by Figure 3.1. As explained in Chapter 2, language learning styles are the result of a complex interaction of level of study, educational experience, and cultural background (Hainer, 1990; Peacock, 2001; Reid, 1987; Rossi-Le, 1995). Language teaching styles, which is an under-researched area, are believed to be related to teachers' cultural and educational background, as well as their teaching experience. The impact of matching or mismatching learning styles and teaching styles in classroom learning is still unknown. A number of research studies (Hyland, 1993; Kinsella, 1995; Nelson, 1995; Tudor, 1996) have shown that students are more motivated to learn if they are taught in their preferred learning styles. On the contrary, some theorists suggest that a mismatch between teaching styles and learning styles can facilitate language learning while others (Kinsella, 1995; Li & Qin, 2006; Littrell, 2006; Peacock, 2001; Tuan, 2011; Zhou, 2011) argue that adopting a multi-style approach in classrooms can help learners extend their learning styles.

Figure 3.1 Conceptual Framework of this Study



As discussed in Chapter 2, the existing literature mainly draws on ESL/EFL students' English language learning styles at university level, but not community college English language classrooms. Moreover, most studies focus on English for general purposes. There is very limited research into the construct of ESL/EFL teachings in EAP contexts. The relationship between learning styles and teaching styles is also an under-researched aspect of second/foreign language learning. This study therefore attempts to fill the gap in the area of language learning styles and teaching styles in EAP contexts at community college level in Hong Kong.

This study first identifies the English language learning style preferences of community college students and English language teaching style preferences of community college teachers in EAP contexts. It then investigates how different variables contribute to their English language learning styles and teaching styles. After that, it examines the relationship between language learning styles and teaching styles and their effects on English language learning so that pedagogical implications on EAP classroom teaching and curriculum design can be drawn.

3.3 Research questions

The research questions set below served as the parameters of the research, which establishes the data collection and analysis processes of this research.

- 1) What are the English language learning style preferences of Hong Kong community college students in EAP contexts?
- 2) To what extent do different variables relate to Hong Kong community students' language learning style preference in EAP contexts?
 - (a) Discipline
 - (b) Level of study
 - (c) Educational background (e.g. Did the student study at local secondary school, or abroad, such as in Mainland China or English speaking countries? Did the student attend a Chinese-medium secondary school

or an English-medium secondary school? Did the student receive any post-secondary education, such as the Pre-Associate Degrees or Foundation Diplomas?)

(d) Cultural background

(e) Other possible variables

3) What are the English language teaching styles of Hong Kong community college teachers in EAP contexts?

4) To what extent do different variables relate to Hong Kong community teachers' language teaching styles in EAP contexts?

(a) Cultural background

(b) Teaching experience

(c) Educational background / qualifications

(d) Other possible variables

5) What is the relationship between learning styles and teaching styles in Hong Kong EAP classrooms at community college level?

3.4 Research methods

This research combines quantitative and qualitative research methods in order to investigate the research questions and enhance trustworthiness through triangulation. Madey (1978) suggests that using a mixed method design can strengthen each method by using intrinsic qualities of each other. Creswell and Clark (2007) explain that

collecting, analysing, and mixing both quantitative and qualitative data in a study provides a more comprehensive understanding of research problems. In addition, Gay, Mills and Airasian (2006) point out that quantitative studies help to establish *what*, while qualitative studies help us understand *how*. Using mixed methods research helps researchers create designs that effectively answer their research questions (Johnson & Onwuegbuzie, 2004). Macfarlane, Webber, Cookson-Cox and McRae (2014) point out that mixed method research can give the “in-depth, contextualised and natural insights of qualitative research, coupled with the economical predictive power of quantitative research”, This research attempts to do so by employing quantitative methodology (conducting a questionnaire survey) in order to lay the foundation for in-depth study, which uses qualitative methodology (carrying out semi-structured individual interviews).

This section provides a general explanation of both quantitative and qualitative research methodologies used in this research.

3.4.1 Quantitative research methodology

The quantitative research approach involves the collection and analysis of numerical data in order to describe and generalise conditions, investigate relationships, and study cause-effect phenomena. Gay, Mills, and Airasian (2006) identify five main quantitative approaches: descriptive research, correlation research, causal-comparative research, experimental research, and single-subject research. Descriptive research involves collecting numerical data to answer questions about the

current status of the research subjects, while correlational research involves collecting data to investigate the relationships that exist between two or more quantifiable variables. Causal-comparative research involves determining the reason for existing differences between individuals, while experimental research attempts to produce soundest evidence about cause-effect relationships. Single-subject experimental designs are used to understand the behavioural change of an individual as a result of treatment. One of the important features of quantitative research is it usually begins with a specific research question or hypothesis drawn from previous literature (McKay, 2006). Another common feature is that it involves large, random sample, and numerical indices, such as tests, or responses to surveys are often used.

Before conducting the research, the researcher has set five research questions, which serve as a parameter of the research. Based on the nature of the research questions and the purposes of the research, it was decided to use the quantitative approach in this study. Two quantitative approaches – descriptive and the one-way ANOVA are used in this study. This research first examines what type(s) of language learning styles EAP students have and what type(s) of teaching styles EAP teachers use (descriptive research) by distributing self-report questionnaires. Data collected from the questionnaires is also used to analyse the mean differences between groups of students according to the demographic information. Post-hoc Tukey-Kramer test is also used to compare all pairs of means of different groups of students.

3.4.2 Qualitative research methodology

Qualitative research, which is also called naturalistic inquiry, aims at gaining insights into teaching and learning activity from the perspective of research participants. That is, it is concerned with the quality and attributes of the phenomena being examined, instead of measuring and counting. Different from quantitative research, researchers usually avoid making assumptions about the study so as to accept alternative explanations from the research participants. The data collected usually is from a purposeful and limited number of research participants and a grounded theory inquiry approach is used to analyze the data.

In this study, a qualitative approach is used in order to investigate EAP students' and teachers' language learning and teaching style preferences, the factors which may affect their language learning styles and teaching styles, and the effects of matching or mismatching between learning styles and teaching style. Semi-structured interviews were conducted with 60 students and 10 teachers so as to provide an in-depth exploration and aid triangulation, based on the research results obtained from the questionnaire.

3.5 Research setting and participants

The proposed research took place in two community colleges in Hong Kong which provide sub-degree programmes (Pre-associate Degree, Associate Degree and Higher Diploma programmes) for local, mainland Chinese and international students.

They were chosen as the research sites for two reasons. First, they are the largest and most well-established community colleges in Hong Kong which admit students from different education backgrounds. Second, the academic programmes offered by the selected community colleges have been accredited by the government and have undergone the universities' internal quality assurance mechanism. The community colleges have also each set up a committee to ensure the standards and consistency of their programmes and teaching.

This research involved a convenience sample of community college students and English teacher volunteers. The student research participants were Associate Degree and Higher Diploma students who studied English for academic purposes. For admission, they generally had passed the HKALE / HKDSE or have completed the Pre-Associate Degree / Foundation Diploma programmes or equivalent. 637 students from different types of programmes, such as Business Administration, Arts, Science, Social Sciences and Information Technology, were invited to participate in the research. Ten teacher participants, who were teaching English for academic purposes at different levels, participated in this research. Both local and native English teachers were invited and they had different educational backgrounds and teaching experiences. Most of them, including local teachers, were educated in English-speaking countries and had over 10 years of experience in English language teaching. Some of them had taught EAP in different countries, including both English-speaking and non-English-speaking countries. The cohort of teachers who participated in this study reflects the wide international representation of tertiary

teaching professional employed by faculties in Hong Kong. The participating teachers were from Europe, North America, Australasia, Taiwan, Mainland China, as well as local. Each of the teachers had amassed diverse experiences in a variety of forms.

3.6 Research procedures

3.6.1 Ethical considerations

The researcher was a passive observer and was not working or studying at the community colleges chosen to minimize power issues between the researcher and the participants. Prior to the research, ethical approval from the University of Canterbury's Human Ethics Committee, and informed written and verbal consent from the student and teacher participants were obtained. The consent form clearly stated that all research participants could choose to withdraw at any stage when they felt uncomfortable with the research process (see Appendices A and B for the information letters and consent forms for student and teacher participants). If they withdrew at any stage, data collected from the participants would not be used in the research. Anonymity of participants will be ensured in all parts of the research report. The community colleges and classes will not be identified in the report in order to protect the privacy of the research participants. The identity of the community colleges, classes or potentially some participants may be known to the researcher's supervisors for the discussions and evaluation of the research work. Additionally, the researcher cannot control whether a participant chooses to tell anyone else that

s/he is participating in this research. Confidentiality of information gathered was guaranteed in all research procedures. Transcription of recorded data was done by the researcher, and was kept in secure storage. Parts of the transcription may be viewed by the researcher's supervisors in order to aid the analysis and discussions of the research work. All data will be destroyed at the end of the research project and all participants understood the purpose of the research.

3.6.2 Research design

Data collection for this study was by means of questionnaire and follow-up interviews. Most of the data collected in this research is narrative and descriptive. This research is mainly exploratory, the data collection procedure is descriptive and unobtrusive, and the approach to data analysis is explanatory.

In order to investigate Hong Kong community college students' language learning style preferences in EAP contexts (Research question 1) and the possible factors affecting their learning styles (Research question 2), a self-report questionnaire was designed. To improve the reliability and validity of the questionnaire, the researcher invited 15 student participants from different educational and cultural backgrounds to comment on the draft questionnaire. Based on their feedback, the researcher modified the questionnaire (see Section 3.7.1 for details of the modifications). It was then administered to 637 students. On the basis of the results of the questionnaire, semi-structured group interviews were designed and conducted with 60 students so as to understand their language learning style

preferences and the factors affecting their styles further, in-depth. Their beliefs about the relationship between learning styles and teaching styles were also investigated in the interviews (Research question 5).

At the same time, teaching styles were investigated (Research questions 3 and 4) by distributing a self-report questionnaire to ten teachers and follow-up individual interviews were arranged. Their views to the relationship between community college students' language learning style preferences and their teaching styles in EAP classrooms were also examined (Research question 5). Finally, teaching implications were drawn by summarizing the analyzed data on research questions 1 – 5.

The next section further explains details of the research instruments.

3.7 Research instruments

3.7.1 Data collection from student participants

(i) Questionnaire

The data collection from students started off with a survey – “English Language Learning Style Preference Questionnaire”, which was adapted from Reid’s (1987) perceptual learning style preferences questionnaire (see Appendix C). The questionnaire was used to collect information for four purposes: to establish an overview of students' language learning style preferences in EAP contexts; to understand the relationship between students' language learning style preferences and different possible variables; to select participants for the subsequent procedures; and

to obtain students' background information.

Prior to the survey, the researcher reviewed literature related to the reliability and validity of the PLSPQ developed by Reid (e.g. DeCapua & Wintergerst, 2005; Wintergerst, DeCapua, & Itzen, 2001; Wintergerst, DeCapua, & Verna, 2003). Based on the findings and suggestions from the studies, the researcher further modified the questionnaire in order to suit the research participants' English language level and improve the validity and reliability of the questionnaire, and most importantly, to make the questionnaire more relevant to the present research. In addition, 15 students from the Higher Diploma and the Associate Degree programmes were invited to respond to the questionnaire through group interviews in order to gain their feedback about the questionnaire. Community college instructors and the researcher's supervisors were invited to comment on the questionnaire so as to make sure the questionnaire is clear, purposeful, and precise. The questionnaire was then finalized and distributed to 637 students studying EAP at different levels.

The self-report questionnaire adapted from the Perceptual Learning Style Preference Questionnaire (PLSPQ) was developed by Joy Reid in 1984. The questionnaire was mainly developed to investigate second/foreign language learners' perceptual learning style preferences. The PLSPQ originally used a five-point scale: from 1 ("*Strongly agree*") to 5 ("*Strongly disagree*"), with 5 statements on each type of learning style. The PLSPQ was chosen to be adapted in this research is mainly because it is the most widely used of the three common survey instruments in the ESL/EFL field (DeCapua & Wintergerst, 2005; Wintergerst et al., 2001). Another

reason is PLSPQ has been normed on high intermediate or advanced ESL/EFL students (DeCapua & Wintergerst, 2005). However, some research (DeCapua & Wintergerst, 2005; Peacock, 2001; Wintergerst et al., 2001, 2003) questions the reliability and validity of the PLSPQ. The researcher therefore further adapted the questionnaire by rephrasing and deleting some statements, as well as the scale of choices, in order to improve the reliability and validity of the questionnaire and to make it more relevant to the research questions.

First, Reid (1990) points out that she encountered difficulties in obtaining acceptable internal consistency for the scales. To address the problems previously encountered, the adapted questionnaire uses a six-point scale: from 1 (“*Strongly Disagree*”) to 6 (“*Strongly Agree*”). This prevents students from selecting the middle or no committal response and encourages them to evaluate more precisely the statements and their feelings. Some students in this study reflected that they would have chosen the middle response for most of the answers for a five-point or seven-point scale, as they want to finish the questionnaire quickly.

Second, the wording of some of the statements was modified by providing more specific examples. Peacock (2001) reveals that some learners may have problems with the wording of the statements. For example, students may not understand the statement, “*I prefer to learn by doing something in class.*” The problem was also reflected by the student participants when the researcher asked them to comment on the first draft of the questionnaire. In this research, examples were added for some statements in order to make them clearer for the research participants. For example,

some students commented that the statement *“I learn more when I make something for a class project.”* was not clear, and the researcher therefore put an example *“Collecting and summarising readings for a class project.”* next to the statement so as to avoid misunderstanding of the statements. So the new item reads, *“I learn more when I make something for a class project. (E.g. Collecting and summarising readings for a class project.)”*. Another example is the statement *“When I do things in class, I learn better.”* The students found that the wording *“do things”* is ambiguous, the statement was then replaced by *“When I do things in class, I learn better. (E.g. Jotting down vocabulary meanings, instead of reading handouts given by teachers only.)”*. One more example is the statement *“I learn better by reading than by listening to someone”* was replaced by *“I think I understand language concepts (e.g. grammar) better with written notes than oral explanation.”* as some students found the phrase *“listening to someone”* confusing.

Third, although the PLSPQ was designed to investigate ESL/EFL learners’ language learning styles, some statements may not be relevant to Hong Kong students’ language learning. For example, the statement *“I enjoy learning in class by doing experiments.”* may not be applicable in Hong Kong English language classroom context. Students may be confused with the word *“experiments”* as they often do experiments in Science classes, but not EAP classes. The statement was then replaced by *“I enjoy learning in class by doing practical work. (e.g. Practising how to cite an article in class, instead of reading referencing manuals given by the teachers.)”*. The second example is the statement *“I learn better by reading what the teacher writes on*

the chalkboard.” It was replaced by *“I learn best by reading what the teacher writes on the board and/or PowerPoint presentations.”* as the use of computer technology is common in Hong Kong tertiary classrooms. The third example is *“I learn better when I make drawings as I study.”* Making drawings may not be common in EAP classrooms and students may have difficulty relating this statement to their learning. The researcher then added the example *“concept mapping / mindmapping”* which is more relevant to the EAP contexts.

A total of 18 statements from the PLSPQ have been modified by changing the ambiguous wording and adding concrete examples.

In addition, to make the questionnaire more relevant to this study, some of the questions related to learners’ background information were modified. Information about TOEFL scores was deleted while information about educational background, level of study and discipline were added to the questionnaire.

Furthermore, some student participants commented that the statements of the PLSPQ are too repetitive, which may cause boredom and affect their incentive to fill out the questionnaire accurately. For example, in PLSPQ, the statements *“I understand better when I read instructions.”* and *“When I read instructions, I remember them better.”* are very similar. Also, the statement *“I get more work done when I work with others.”* is similar to another statement *“In class, I learn best when I work with others”*. The researcher therefore deleted some repeated statements and reduced the number of statements from five statements in PLSPQ to four statements for each learning style category in order to make the questionnaire more concise. A

total of six out of thirty statements from the PLSPQ have been deleted.

Besides investigating the perceptual language learning style preferences of language learners, this study examines students' preferences for independent, dependent, analytic and teacher-modeling learning styles, which were commonly identified in the literature on learning and teaching styles. Those questionnaire statements are also included in the second part of the questionnaire. The following shows the example statements of those learning styles.

1. *Independent* learners – this type of learner prefers learning independently and prefers solving problems on their own first.

Example: I prefer to solve problems by myself first (instead of relying on teacher's explanation).

2. *Dependent* learners– this type of learner prefers learning in a teacher-centred approach that teachers have an authority role on establishing learning goals and offering knowledge.

Example: I learn better if teachers prepare lots of handouts for me.

3. *Analytic* learners – this type of learner prefers learning which requires high-order thinking and cognitive skills.

Example: I prefer teachers to allow me to analyze language concepts (e.g. grammar and vocabulary) through giving examples.

4. *Teacher-modeling* learners – this type of learner prefers teachers showing them how to think or do things by direct examples and illustration

Example: I learn better if someone can show me how I can apply different language concepts in different situations.

Before distributing the questionnaire, the researcher briefly introduced the questionnaire to the students and responded to some of the students' queries. Students were informed that completion of the questionnaire was voluntary and that the data collected would be confidential. They were given approximately twenty minutes to complete the questionnaire. The questionnaires were then collected by the researcher. Those students who wished to participate in in-depth interviews related to the study were asked to write contact information at the end of the questionnaire.

(ii) *Semi-structured interviews*

Semi-structured interviews were conducted with 60 student volunteers after the questionnaire survey (see Appendix E for the prompt interview questions). There are several reasons to conduct follow-up semi-structured interviews. Interviews can provide a rich source of data by asking participants more in-depth questions and allowing them to elaborate on their responses to questionnaires (DeCapua & Wintergerst, 2005; Gay, Mills, & Airasian, 2006; Wintergerst et al., 2002). At the same time, researchers can ask for clarification or explanation when the researcher requires more detail. Second, this can aid triangulation and thus improve the reliability and validity of the research (Cohen, Manion, & Morrison, 2011; Johnson & Onwuegbuzie, 2004; Lincoln & Guba, 1985). Semi-structured interviews were used

as open-ended questions allow research to focus on particular topics and provide flexibility for two-way communication.

The main objective of the first semi-structured interviews were to explore students' English language learning style preferences in EAP contexts further, in-depth, the possible factors which may contribute to their language learning style preferences and their response to community college instructors' teaching styles. The questionnaire may not fully reflect students' learning style preferences and also cannot explain all the possible factors. Semi-structured interviews can serve those purposes. The interviews were conducted in the language that each of the participants felt most comfortable with so that students would not be constrained by linguistic factors. Prior to the interviews, the researcher explained the purpose of the interview and provided an overview of the topics. Detailed notes were taken during the interviews and the interviews were tape-recorded, translated and transcribed in case a review was needed. The 30-minute interview took place three weeks after the completion of the questionnaires. The interview included topics such as their educational and cultural background, preferred ways of English learning in EAP contexts, how they describe their EAP teachers' teaching styles and their beliefs about the match between teaching styles and learning styles related to their language learning in EAP contexts. Appendix E shows the prompts for the semi-structured interviews.

3.7.2 Data collection from teacher participants

(i) *Questionnaire*

Teachers' second/foreign language teaching style preferences were examined by using a self-reported questionnaire based on the students' learning style questionnaire developed by the researcher (see Appendix D). The questionnaire was administered to 10 EAP teachers from different community colleges and ethnic backgrounds. The major aims are to explore community college teachers' teaching styles and their variables; and to provide data for investigating the match between learning styles and teaching styles. The self-reported questionnaire is divided into two parts. The first part asks teachers about their ethnic background, educational background and teaching experience. The second part asks teachers about their teaching styles using the same six categories (visual, auditory, kinaesthetic, tactile, group and individual) and categories of teaching styles identified by the researcher (i.e independent, dependent, teacher-modeling, analytic), as on the student questionnaire. Same as the student questionnaire, the teacher questionnaire uses a six-point Likert scale: from 1 ("*Strongly Disagree*") to 6 ("*Strongly Agree*").

The researcher briefly introduced the questionnaire to the teachers and responded to their queries. Teachers were informed that completion of the questionnaire was voluntary and that the data collected would be confidential.

(ii) *Semi-structured interviews*

The objective of carrying out interviews was to gain further in-depth information on teachers' teaching styles and their views towards the match between teaching

styles and learning styles in their language classroom (see Appendix F for the prompt interview questions). Same as the student interviews, teacher interviews allow the researcher to ask for clarification or explanation of their views, and improve the reliability and validity of the research. The interviews involved 10 teachers who were teaching EAP at different levels and from different ethnic background.

Prior to the interviews, the researcher explained the purpose of the interview and provided an overview of the topics. Detailed notes were made during the interviews which were tape-recorded, translated and transcribed in case a review was needed. The interviews were conducted individually. The 30-minute interviews included topics such as educational and cultural background, preferred ways of English language teaching in EAP contexts, and their views towards the match between learning styles and teaching styles.

3.8 Data analysis and presentation

The main data sources of the proposed study are from questionnaire results and verbal protocols (teacher interviews and student interviews). Questionnaire data was analyzed quantitatively, while interview data were analyzed qualitatively.

3.8.1 Quantitative data analysis

Questionnaire administration was done by setting up data files, including coding the data, numbering the questionnaires, and inputting the data. The Statistical Package

for the Social Sciences (SPSS) Version 17.0 was used to analyze students' responses towards the learning style preferences questionnaire and teachers' responses towards the teaching style preference questionnaire. The questionnaire has ten categories, with four questions for each category. To determine students' major/minor learning styles and teachers' major/minor teaching styles, the researcher adapted Reid's preference classification. There are four statements for each learning category in the questionnaire. The questions are grouped according to each learning style: visual (questions 1, 11, 25 and 33); auditory (questions 2, 19, 26 and 34); kinaesthetic (questions 3, 12, 20 and 27); tactile (questions 4, 13, 21 and 28); individual (questions 6, 15, 19 and 30); group (questions 5, 14, 29 and 35); independent (questions 7, 16, 31 and 37); dependent (questions 8, 17, 22 and 38); teacher-modeling (questions 10, 18, 24 and 40); and analytic (questions 9, 23,32 and 39). Each question has a numerical value (see Table 3.1).

Table 3.1. The Likert Scale of the Learning Style Questionnaire and the Teaching Style Questionnaire

<i>strongly agree</i>	<i>Agree</i>	<i>Somewhat agree</i>	<i>Somewhat disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
6	5	4	3	2	1

To identify the major, minor and negative learning/teaching style preferences, the numerical value of each learning/teaching style is added up. The scale of the

learning/teaching style preferences is presented in Table 3.2.

Table 3.2. The Scales of Major, Minor and Negative Learning/Teaching Styles

Learning/teaching style preferences	<i>Major</i>	<i>Minor</i>	<i>Negative</i>
Score	20-24	12-19	11 or less

A profile of results was established for each participant. The frequency distribution of questionnaire results was examined. The mean for each item was calculated and items with higher use were identified. The standard of $p < .05$ was used to determine the statistical significance of results. The effects of different variables on the learning styles was examined by using ANOVAs. Due to the uneven sample sizes, post hoc Tukey-Kramer tests were used to compare the all pairs of means of different groups of students. The questionnaire survey results from teachers could not be generated in this study. The reasons for this will be presented in the latter sections.

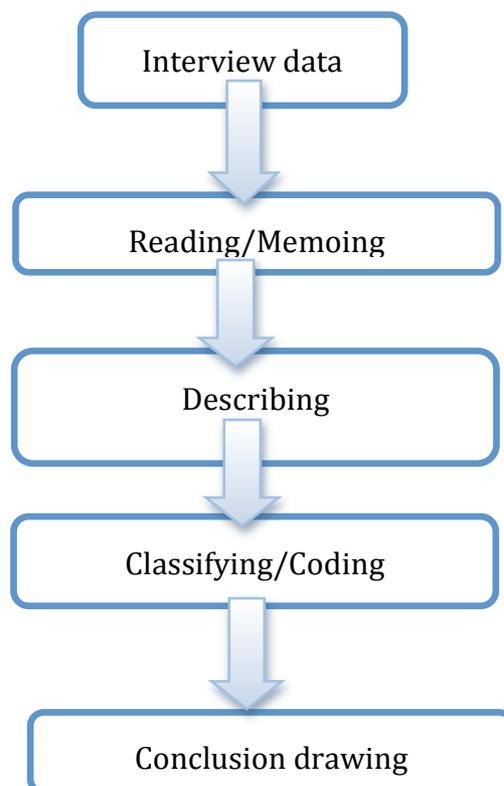
3.8.2 Qualitative data analysis

Grounded theory inquiry approach was one of the important analytic methods to investigate learning styles and teaching styles in this study. This approach allows researchers to use a practical and flexible approach to understand and interpret complex human experiences (Charmaz, 2003; Macfarlane et al., 2014). The role of the researchers is to develop theories inductively from the collected data, mainly through conversations and interviews. Grounded theory starts with inductive logic

that researchers first collect data, then analyse it logically and finally construct theoretical explanations from the ground up. Strauss and Corbin (1998, p. 5) suggest researchers being “flexible” and “open to helpful criticism” in this approach. In addition, researchers should present the information in a logical and consistent way in order to make it meaningful to the research stakeholders (Gage, Kirk, & Hornblow, 2009).

In this research, the qualitative data consists of students’ and teachers’ interview transcripts. All the interviews were tape-recorded, translated into English and transcribed. The analysis procedure includes reading/memoing, describing, and classifying/coding as suggested by Gays, Mills, & Airasian (2006). Figure 3.2 shows the procedures of analyzing data.

Figure 3.2: The Procedures of Analyzing Data



The first step was reading and writing memos about transcripts in order to get an overall picture of the data and identify potential themes of the data. Notes were written next to the transcripts. The next step was to examine the data in depth, which involved developing thorough and comprehensive descriptions of the participants and phenomenon studied. After that, data was categorized, coded and grouped into themes (classifying). The data was rearranged into different categories (e.g. different learning style categories) and data coded was then organized and integrated. Finally, conclusions were drawn with reference to the previous literature on learning styles and teaching styles.

3.9 Validity and reliability

Validity and reliability are essential for sound research, including both quantitative and qualitative research. There are two major types of validity: external and internal validity.

External validity refers to the degree to which the findings can be generalized to other setting and other populations. Although this research could not involve all community college students and teachers in Hong Kong due to limited time and resources, the research has included the two largest community colleges in Hong Kong, which offer EAP courses to students. McKay (2006) suggests that to enable readers to determine the transferability (external validity) and understand to what extent the findings can be applicable to other contexts, researchers have to provide a

complete description of the participants and context of the research (Firestone, 1993; Lincoln & Guba, 1985). Shenton (2004) therefore suggests that a good research report which can achieve external validity should clearly indicate the number of organisations taking part in the study and where they are based, the type of people contributing the data, the number of participants involving in the fieldwork, the data collection methods, number and length of data collection sessions, and the time period of data collection. In this report, the researcher has given a detailed description of the context and participants of the research – Hong Kong community college students and teachers’ learning styles and teaching styles in EAP contexts.

Internal validity refers to the degree to which the degree to which the data can be accurately interpreted (Brown & Rodgers, 2009). That is, the degree to which it has controlled for variables that may affect the outcome of the study. This research can achieve credibility or internal validity by carefully recording, analyzing and presenting data in a fair and unbiased way. Lincoln and Guba (1985) suggest several ways to achieve credibility, which includes triangulation, discussion with peers about the research and its design and assumptions, asking research participants to check the researcher’s interpretation of data. This study uses both quantitative and qualitative research methods to explore community college students’ and teachers’ learning and teaching styles so as to aid triangulation and collect in-depth information. At the same time, the researcher asked for research participants’ and her research supervisors’ feedback on the research instruments, which include questionnaires and interview prompts. Necessary changes, such as the format and question wordings, were made

in order to make instruments valid for the study. Additionally, checking with stakeholders in the research (member checks) and working with other researchers (peer debriefing) are essential for internal validity (Mertens, 2014). To ensure the credibility of the interview data, the researcher summarized what had been said and asked if the notes could accurately reflect the participants' position. Furthermore, the research invited her supervisors and colleagues to check the interpretation of data. This was done by sharing the drafts of the research reports and check whether the data and interpretation could be compatible with the research purposes, questions and processes.

Interviews were also conducted in order to check the interpretation of questionnaire data. Shenton (2004) also proposes that the researcher should be familiar with the culture of the organisations before collecting data. This can be done by consulting relevant documents, reviewing literature, and have preliminary visits to the organisations. Lincoln & Guba (1985) recommend researchers to develop "prolonged engagement" with the participants in order to have adequate understanding of the organisations and establish a relationship of trust with the participants. Prior to the field work, the researcher has reviewed literature on English language learning styles and teaching styles, as well as community college education in Hong Kong. At the same time, the researcher had opportunities to take part in some English language learning activities at a community college in Hong Kong for several years. The researcher has also established good relationships with some community college English lecturers and students. This helped to ensure that the data collected

could be presented and interpreted accurately under scrutiny. In addition, Shenton points out that all research participants should be allowed to refuse to participate in the research to ensure that the research only includes those who are willing to participate and offer data freely. Researchers should also establish good rapport with the participants so that the participants can provide data honestly.

Similar to validity, there are two types of reliability – internal and external reliability. Internal reliability refers to the degree to which the results are consistent if another researcher analyzes the same data. To determine the internal reliability of the questionnaire results, the Cronbach's Alpha test was used. Cronbach's Alpha estimates the internal consistency reliability by checking how the items on a test relate to other test items and the whole test.

The Cronbach's Alpha of the students' learning style questionnaire was found to be 0.91, which indicates a high level of internal consistency. Reliability tests were also conducted for each learning style individually (see Appendix G).

The Cronbach's Alpha of visual, tactile, and individual learning styles were 0.56, 0.58 and 0.52 respectively, which might be considered as low internal consistency in social sciences research. However, Tuckman (1994) states that $\alpha \geq 0.50$ is acceptable for such tests. Therefore, the alpha values of those learning styles are still acceptable for internal consistency in learning style survey.

The subscale of the auditory ($\alpha = 0.63$), kinaesthetic ($\alpha = 0.63$), group ($\alpha = 0.75$), independent ($\alpha = 0.67$), dependent ($\alpha = 0.62$), and teacher-modeling learning ($\alpha = 0.68$) styles appeared to have good internal consistency.

The Cronbach's Alpha ($\alpha = 0.70$) of analytic learning style also indicated good internal consistency. The greatest increase in alpha would come from deleting question 9, but removal of this question would increase alpha only by 0.01. The corrected item – total correlation (r) of question 9 was 0.36, which means the item correlated with the scale to an acceptable degree ($r = 0.3$). Therefore, question 9 was still retained in this survey.

Based on the results of the Cronbach's Alpha test, it could be seen that all questions appeared to be worthy of retention due to their good internal consistency and acceptable level of corrected item total correlation.

The internal reliability of teaching style questionnaire could not be examined as the teacher participants doubted the reliability of the use of questionnaire as a research instrument for investigating their teachings styles. The reasons for this will be explained in the following chapters.

External reliability refers to the extent to which the results are consistent if the study was replicated. To develop external reliability, researchers (Cohen, Manion, & Morrison, 2000) suggest that researchers implement test/re-test method by running the same tests or instruments twice and then check the correlation between the results of the first and the second tests. However, in this research, research participants' answers towards the questionnaire statements may have changed due to some dependent variables, such as students' level of English and the length of studying EAP. The changing nature of the phenomena can also be problematic in qualitative research (Fidel, 1993; Marshall & Rossman, 1999). In order to address the issue, Shenton

(2004) suggests that researchers report the processes clearly and explicitly so as to enable future researchers to replicate the work. This can also allow readers to assess to which extent the research processes can be followed in different contexts.

3.10 Chapter summary

This chapter has described the research framework with reference to the research aims. Research questions have also been presented in order to clarify the research focus. It also presents the research methods and procedures, including the explanation of how the researcher analysed the data. In addition, this chapter has also reflected on the validity and reliability of the research, which is essential for every research study. The next chapter will present the quantitative data collected in this research.

Chapter 4: Quantitative and Qualitative Results

4.1 Overview

This chapter presents the questionnaire results gathered in this research. In this study, the researcher administered two questionnaires (see Appendices C and D), which had similar questions, for both student and teacher participants respectively. The main aim of this was to compare the learning styles of students studying English for academic purposes (EAP) and the teaching styles of EAP teachers,

There were two main parts to the students' questionnaire. The first part consisted of questions related to student participants' demographic information, i.e. gender, year of study, programme, major field, place of origin, first and second language, type of secondary school attended, and highest qualification held when entering the programme. The second part investigated students' learning style preferences towards studying EAP. In this chapter, the results of the questionnaire survey are reported using descriptive data whereby the results are explained and presented using numeric descriptions and graphs. The following aspects of results are included in this chapter: mean scores and standard deviations for each learning style, the p values (level of significance) of mean differences between different groups of students (according to the demographic information) from one-way ANOVAs, and post hoc Tukey-Kramer test results which compared all pairs of means of different groups of students. This part attempts to answer research questions 1 and 2, that are listed in Chapter 2.

However, due to the low number of teacher participants, statistical analysis of

the teachers' questionnaire survey results could not be conducted effectively. The reasons for this are presented in this chapter as well.

This chapter also presents the qualitative findings from this research study, beginning with exploring the factors affecting Hong Kong community college EAP students' English language learning styles and their perceptions about learning styles and teaching styles. This is followed by examination of the factors influencing EAP teachers' English language teaching styles and their beliefs about learning styles and teaching styles. The qualitative findings attempt to answer research questions 2, 3, 4, and 5.

4.2 Quantitative results

4.2.1 Students' questionnaire survey results

4.2.1.1 Demographic information on student participants

A total of 637 English as a second/foreign language (ESL/EFL) students from two community colleges in Hong Kong participated in the study. The student participants were from Higher Diploma and Associate Degree programmes and were studying different major fields. All of them took EAP classes as part of their sub-degree programmes. Tables 4.1 – 4.4 summarize the demographic information of the participants.

Table 4.1: Demographic Information: Gender, Place of Origin, and First and Second Languages

Gender				
	Frequency	Percent	Valid Percent	Cumulative Percent
Male	309	48.5	48.5	48.5
Female	328	51.5	51.5	100.0
Place of origin				
	Frequency	Percent	Valid Percent	Cumulative Percent
Hong Kong	629	98.7	98.7	98.7
Mainland China	6	.9	.9	99.7
Non-English speaking country (except Hong Kong and China)	2	.3	.3	100.0
First language				
	Frequency	Percent	Valid Percent	Cumulative Percent
Chinese	636	99.8	99.8	99.8
Others	1	.2	.2	100.0
Second language				
	Frequency	Percent	Valid Percent	Cumulative Percent
English	637	100.0	100.0	100.0

Table 4.2: Demographic Information: Year of Study and Programme

Year of Study				
	Frequency	Percent	Valid Percent	Cumulative Percent
1	458	71.9	71.9	71.9
2	179	28.1	28.1	100.0
Programme				
	Frequency	Percent	Valid Percent	Cumulative Percent
Associate Degree	428	67.2	67.2	67.2
Higher Diploma	209	32.8	32.8	100.0

Table 4.3: Demographic Information: Major Fields

Major Fields	Frequency	Percent	Valid Percent	Cumulative Percent
Aviation	58	9.1	9.1	9.1
Business Administration	317	49.8	49.8	58.9
Dental Hygiene	21	3.3	3.3	62.2
Computing Studies	39	6.1	6.1	68.3
Life Sciences	56	8.8	8.8	77.1
Language and Humanities	87	13.7	13.7	90.7
Media, Cultural and Creative Studies	23	3.6	3.6	94.3
Social Sciences	21	3.3	3.3	97.6
Engineering	15	2.4	2.4	100.0

**Table 4.4: Demographic Information:
Type of Secondary School Attended and Qualifications on Entry**

Type of Secondary School Attended	Frequency	Percent	Valid Percent	Cumulative Percent
English-medium secondary school in Hong Kong	274	43.0	43.0	43.0
Chinese-medium secondary school in Hong Kong	347	54.5	54.5	97.5
International school in Hong Kong	4	.6	.6	98.1
International school in China	8	1.3	1.3	99.4
Local secondary school in China	2	.3	.3	99.7
Local secondary school in English-speaking countries	2	.3	.3	100.0
Qualifications on Entry				
	Frequency	Percent	Valid Percent	Cumulative Percent
Form 7 / Grade 13	270	42.4	42.4	42.4
Form 6 / Grade 12	274	43.0	43.0	85.4
Form 5 / Grade 11	4	.6	.6	86.0
Pre-associate degree / Foundation diploma	89	14.0	14.0	100.0

4.2.1.2 Students' learning style preferences

This section attempts to answer research question one:

What are the English language learning style preferences of Hong Kong community college students in EAP contexts?

To examine the preferred learning style preferences of students, descriptive means and standard deviation of the ten types of learning style preferences were computed. The one with the highest mean value was the students' most preferred learning style.

The means of the learning styles preferences are given in Table 4.5. The results shows that students preferred teacher modeling most, which had the highest mean value of 18.46 and a standard deviation of 2.50. The least preferred learning style was visual learning, which had the lowest mean score of 16.58 and a standard deviation of 2.47.

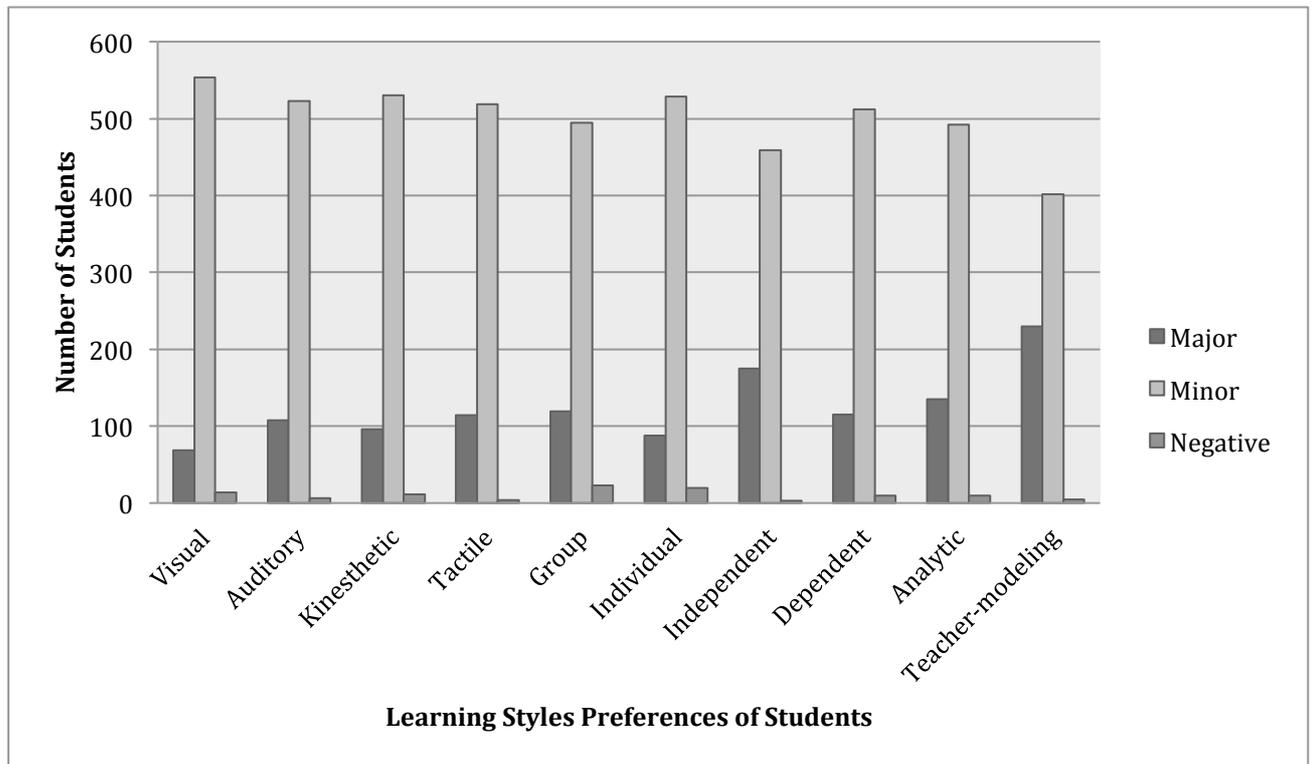
Table 4.5: Students' Learning Styles Preferences

	N	Mean	Std. Deviation
Visual	637	16.5793	2.46588
Auditory	637	17.3250	2.22823
Kinaesthetic	637	16.8995	2.50834
Tactile	637	17.3956	2.41533
Group	637	16.8430	2.79889
Individual	637	16.7473	2.35000

Independent	637	17.7159	2.51710
Dependent	637	17.2308	2.54305
Analytic	637	17.5306	2.53114
Teacher modeling	637	18.4631	2.50358

The preference mean score for each set of variables was divided into three categories, namely, major (20 – 24), minor (12 – 19) and negative (11 or less) learning styles. Figure 4.6 shows the major, minor, and negative learning styles of students. A large number of students had minor learning style modes.

Figure 4.1: Students’ Learning Style Preferences: Major, Minor and Negative



20 – 24 = Major Learning Style Preference

12 – 19 = Minor Learning Style Preference

11 or less = Negative Learning Style Preference

4.2.1.3 Learning style preferences and gender, year of study, programme, major field and educational background

This section attempts to answer research question two:

To what extent do different variables relate to Hong Kong community students' language learning style preference in EAP contexts?

One of the aims of this study was to investigate the possible factors of students' English language learning styles. In order to determine the interaction of the demographic factors (i.e. gender, year of study, programme, major field, educational background and future plan) and learning styles, a one-way ANOVA was run to find out the mean differences between groups (see Appendix H).

(a) Gender

A one-way ANOVA was conducted to compare male and female students' learning style preferences. The analysis indicated that male students have significantly greater preference for tactile, independent, and analytic learning than female students, $F(1, 635) = 7.454, p = 0.007$, $F(1, 635) = 10.226, p = 0.001$, and $F(1, 635) = 4.043$,

$p = 0.045$, respectively.

(b) Year of study

Statistical analyses show that the mean values of learning styles of Year 2 students, were generally higher than Year 1 students, except for group learning. Year 2 students preferred auditory, tactile, analytic, and teacher-modeling significantly more than Year 1 students, $F(1, 635) = 6.636, p = 0.01$, $F(1, 635) = 8.888, p = 0.003$, $F(1, 635) = 3.823, p = 0.05$ and $F(1, 635) = 6.501, p = 0.011$, respectively.

(c) Type of programme

In this study, both Associate Degree and Higher Diploma students were invited to participate in the survey. A one-way ANOVA was conducted to compare the mean differences of Associate Degree and Higher Diploma students. The analysis revealed that there were significant differences for kinaesthetic, independent, and teacher-modeling learning styles, $F(1, 635) = 6.595, p = 0.01$, $F(1, 635), p = 0.021$, and $F(1, 165) = 5.012, p = 0.026$, respectively. Associate Degree students indicated that they had significantly greater preference for kinaesthetic and independent learning, $M = 17.0771, SD = 2.3848$, and $M = 17.8762, SD = 2.54536$, respectively, than Higher Diploma students, $M = 16.5359, SD = 2.71391$, and $M = 17.3876, SD = 2.54536$, respectively. However, Higher Diploma students preferred teacher-modeling learning ($M = 18.7799, SD = 2.25946$) significantly more than Associate Degree students ($M = 18.3084, SD = 2.60305$).

(d) Major field

Statistical results indicated that Dental Hygiene major students had the lowest means for all learning style preferences. The one-way ANOVA demonstrated that there were significant differences for the visual, auditory, kinaesthetic, independent, and analytic learning. Post hoc Tukey-Kramer tests were conducted on all possible pairwise contrasts to find out the p value between different programmes. The following shows the results of the tests.

Visual learning

There were significant differences in the mean values of visual learning between the programmes as determined by one-way ANOVA [$F(8, 628) = 3.143, p = 0.002$]. The post hoc Tukey-Kramer test revealed that the mean value of visual learning style of Dental Hygiene major students ($M = 14.6667, SD = 1.82574$) was significantly lower than that of Aviation ($M = 17.1379, SD = 2.34295$), Business Administration ($M = 16.6593, SD = 2.35141$), Life Sciences ($M = 16.7856, SD = 2.43246$), and Language and Humanities ($M = 16.5977, SD = 2.87515$) majors students. In addition, Aviation major students had a significantly greater preference for visual learning than Social Sciences students ($M = 15.1429, SD = 2.65115$).

Auditory learning

The one-way ANOVA demonstrated significant difference between different programmes, $F(8, 628) = 2.517, p = 0.011$. The post hoc test indicated that the mean

value of auditory learning style of Dental Hygiene major ($M = 16.0952$, $SD = 2.30010$) was significantly lower than Life Sciences ($M = 17.9286$, $SD = 2.57157$) and Media, Cultural and Creative Studies ($M = 18.1739$, $SD = 1.74908$).

Tactile learning

Statistical analysis revealed that preferences for tactile learning differed significantly across the programmes, $F(8, 628) = 4.393$, $p = 0.000$. Tukey-Kramer post hoc test comparisons of the programmes indicated that Dental Hygiene major students ($M = 15.0476$, $SD = 1.82965$) preferred tactile learning significantly less than Aviation ($M = 17.7069$, $SD = 2.12759$), Business Administration ($M = 17.2713$, $SD = 2.35239$), Life Sciences ($M = 18.1607$, $SD = 2.54256$), Language and Humanities ($M = 17.7241$, $SD = 2.41935$), Media, Cultural and Creative Studies ($M = 18.0000$, $SD = 2.27636$), and Social Sciences ($M = 17.8571$, $SD = 2.24245$) majors.

Kinaesthetic learning

The one-way ANOVA demonstrated that significant differences existed between the programmes, $F(8, 628) = 4.512$, $p = 0.000$. Post hoc test indicated that Dental Hygiene major ($M = 14.6190$, $SD = 2.59762$) preferred kinaesthetic learning significantly less than Aviation ($M = 17.0172$, $SD = 2.59210$), Business Administration ($M = 16.9779$, $SD = 2.38059$), Computing Studies ($M = 15.8205$, $SD = 2.69377$), Life Sciences ($M = 17.6607$, $SD = 2.45895$), Language and Humanities ($M = 16.8279$, $SD = 2.35366$), Media, Cultural and Creative Studies ($M = 17.0435$,

$SD = 2.65396$), and Social Sciences ($M = 18.0000$, $SD = 2.75681$) majors. Additionally, it was found that Social Sciences and Life Sciences majors preferred kinaesthetic learning significantly more than Computing Studies major.

Independent learning

Significant differences in mean values for independent learning were found between different programmes, $F(8, 628) = 3.884$, $p = 0.000$. Post hoc test indicated that Dental Hygiene major ($M = 16.0000$, $SD = 2.19089$) preferred independent learning less than Life Sciences ($M = 18.5357$, $SD = 2.50791$), Business Administration ($M = 17.7413$, $SD = 2.51375$), Language and Humanities ($M = 18.0920$, $SD = 2.21849$), and Social Sciences ($M = 18.8571$, $SD = 2.74382$) majors. Also, Life Sciences students preferred independent learning significantly more than Computing Studies students ($M = 16.8718$, $SD = 2.69678$).

Analytic learning

Statistical analysis showed that significant differences were found between the programmes, $F(8, 628) = 2.915$, $p = 0.003$. Dental Hygiene ($M = 15.8571$, $SD = 2.68880$) major preferred analytic learning less than Aviation ($M = 18.1207$, $SD = 2.263969$), Life Sciences ($M = 18.0893$, $SD = 2.10002$), and Language and Humanities ($M = 17.7586$, $SD = 2.39168$) majors.

(e) Educational background

Type of secondary school attended

In this survey, there were 16 students, out of 621 students, who had studied secondary schools outside Hong Kong. The very unequal distribution of sample size may cause confounding results of ANOVA. Therefore, comparisons of mean values of students from English-medium secondary school and Chinese-medium secondary school in Hong Kong were made only. In general, the mean values of all learning style preferences for students from English-medium secondary schools were higher than that from Chinese-medium secondary schools, except dependent learning. The one-way ANOVA showed significant differences for auditory and independent learning styles, $F(1, 619) = 8.556, p = 0.004$, and $F(1, 619) = 4.804, p = 0.029$.

Qualifications on entry

In general, students who had Form 6 qualification had the lowest mean values for all learning style preferences, except group learning. ANOVA was then conducted to compare the means of learning style preferences of students, significant differences were found for auditory, tactile and group learning, $F(2, 634) = 6.374, p = 0.002$, $F(2, 634) = 3.994, p = 0.019$, and $F(2, 634) = 4.470, p = 0.012$.

Auditory learning

Post hoc Tukey-Kramer test indicated that students who had Form 6 qualification

($M = 16.9781$, $SD = 2.10169$) preferred auditory learning significantly less than students who had Form 7 qualification ($M = 17.5222$, $SD = 2.27918$) and students who completed Pre-associate Degree or Foundation Diploma programmes ($M = 17.7742$, $SD = 2.31314$).

Tactile learning

Post hoc comparisons showed that students who completed Pre-associate Degree or Foundation Diploma programmes ($M = 17.9032$, $SD = 2.4635$) preferred significantly more for tactile learning than those who had Form Six qualification ($M = 17.9032$, $SD = 2.46305$).

Group learning

The post hoc test revealed that students who completed Pre-Associate Degree or Foundation Diploma students ($M = 17.6344$, $SD = 2.64849$) had a significantly greater preference towards group learning than those who completed Form 6 ($M = 16.7518$, $SD = 2.81618$) and Form 7 ($M = 16.6630$, $SD = 2.79560$).

Teacher-modeling learning

The statistical analysis demonstrated that students who completed Form 7 ($M = 18.7148$, $SD = 2.51467$) had significantly greater preference towards teacher-modeling learning than those who had Form 6 qualification ($M = 18.1593$, $SD = 2.44467$).

4.2.2 Teachers' questionnaire survey results

In this study, with the aims of investigating teachers' teaching styles and comparing teaching styles and learning styles, a questionnaire for teacher participants was administered.. The researcher invited all teachers who taught EAP at the two community colleges to participate in the questionnaire survey by Email, but the response rate for the questionnaire survey was less than satisfactory. The small sample size (10 teacher participants) reduces statistical power, which may cause inaccurate and unreliable statistical results. Therefore, the results of the questionnaire survey from teachers are not presented in this paper. Although the response rate of the questionnaire was less than satisfactory and could not be presented statistically, the participants who completed the questionnaire were invited to participate in the interviews in order to investigate their teaching styles and perceptions towards students' learning styles in-depth.

There were two main reasons which caused the low response rate of the questionnaire survey. First, different from many Western countries which implement small class teaching, the class sizes of English classes in Hong Kong are relatively large – usually around 24 – 35 students per class. Therefore, there were less than 12 teachers who taught English for academic purposes in each college, though the number of student participants was quite large. Hence, the low response rate was caused by the limited number of teacher participants in this survey. The second reason was that some teachers commented that the questionnaire could not sufficiently

demonstrate their teaching styles as their teaching style differed when they taught different classes and levels. They reported that they found it difficult to choose the correct options in the questionnaire as they pointed out that they might have different answers for different EAP classes and levels of students. The next section will further present and explain teachers' teaching style preferences.

4.3 Qualitative results

4.3.1 EAP students' English language learning styles

In this study, 60 Higher Diploma and Associate Degree students agreed to attend a 30-minute group interview (4 or 5 students in a group) after completing the questionnaire. The students invited were from different programmes and graduated from different secondary schools, ranging from Band 1 English-medium secondary schools to Band 3 Chinese-medium secondary schools². They had different educational backgrounds - some had completed the HKDSE, while others had sat for the HKALE before they entered the College. In addition, their English language proficiency, which was reflected in college examination scores, ranged from "A" grade to "D" grade.

² The secondary schools in Hong Kong are categorized into three bands according to their academic standards. Band 1 schools have the highest academic standards and are regarded as the prestigious schools for elite students.

4.3.1.1 Factors influencing EAP students' English language learning styles

This section attempts to answer research question two:

To what extent do different variables relate to Hong Kong community students' language learning style preference in EAP contexts?

The study interviewees in this study identified five major factors which are related to their learning styles. These include:

- (a) English language proficiency
- (b) Educational contexts and nature of learning tasks
- (c) Cultural beliefs and values
- (d) Educational background
- (e) Teaching styles and learning styles of their former teachers

Factors related to students' English language learning styles

- (a) English language proficiency

Many student interviewees believed that English language proficiency might be related to their learning style preferences towards EAP.

Students who have higher language proficiency expressed that they preferred learning independently and individually, instead of relying on teachers and learning with peers. They believed that they had the ability to learn independently, and more importantly, they strongly believed that advanced learners should learn independently

and individually in order to further enhance their language proficiency. Students who preferred learning independently and individually said,

"I think at this level (college level) we can't rely too much on teachers because we know the basics already. I don't think learning in classroom and listening to teachers' explanations can further enhance my language ability. Advanced learners should be able to acquire language in daily life and should also be able to explore the language rules through authentic English texts by themselves."

"The best way to learn a language is to explore by ourselves. Of course, at the early stage, we need teachers' support, for example, when learning the basic vocabulary and language patterns. When we have attained a certain level, we should be able to explore the language by ourselves. The process of exploring can further strengthen our language ability."

Many high ability students had similar beliefs and some believed that they had higher language proficiency than other classmates, so that learning with others might not help them much. For example,

"It seems that other students can't help me much in English language learning. I don't think writing an essay with my classmates who have lower ability than me

can help my learning. I believe I have the ability to write an essay and finish a project... Explaining language concepts to other students may sometimes help my learning, but I still prefer learning individually most of the time."

On the other hand, students who have lower language ability tend to have stronger preference for group learning and dependent learning. Many of them pointed out that learning with others can enhance their language proficiency by learning from the strengths from others. Moreover, they felt more confident when doing a task with others before reporting or submitting their work. For instance,

"I like working with others in class activities, such as writing an essay and doing a presentation. I'm not good at English and I can't trust my language ability. I believe other students can help me and at the same time, I can use my strengths to help other students. I like this kind of learning environment. For example, I'm good at brainstorming ideas and my classmates can proofread my writing. I feel more comfortable to have my friends telling me the language errors rather than teachers giving me a big cross after I've submitted my work."

"I feel more comfortable to present or submit my work when working with others. Other people don't know I made the mistakes because I did the work with other classmates. It's less embarrassing."

"Everyone has both strengths and weaknesses. Maybe I'm good at organizing ideas and my friends are good at grammar. I can help my classmates organize ideas and at the same time, I can learn from them by asking them to help me proofread my writing. It's also more efficient."

Additionally, lower language ability students preferred to have more teachers' guidance as they lacked confidence in learning English and analyzing language patterns independently.

"To be honest, I don't trust my own ability. With teachers' guidance, I can make sure that I'm always on the right track."

"I know it's important to learn independently but I don't think I have the ability to learn English by myself. How can I know I'm on the right track without teachers' support? If you ask me to read the reference books by myself, I'm pretty sure that I can't understand the concepts fully even though examples are given. I may even fall asleep if you ask me to read the book by myself because I can't understand the language well."

"I think if I can achieve a certain level, I can learn independently. I can just learn English through movies and songs. At this stage, I don't think I have the

ability to do that. If you ask me to read an English academic text and learn the academic vocabulary, I may have to spend many hours looking up in the dictionary. You know, it's time consuming and boring. Although I've learnt how to guess meaning through contexts, I still have difficulty guessing the meaning because I don't understand most of the words in the texts."

Based on the interview findings, English language proficiency seems to be an important factor contributing to students' learning style preferences of EAP. Higher ability students have stronger preference towards independent learning and individual learning, while weaker students seem to prefer dependent learning and group learning due to their lower level of language proficiency.

(b) Educational contexts and nature of learning tasks

Many students commented that the educational system in Hong Kong is exam-oriented and the fact that they had been spoon-fed caused them focus more on grades, rather than learning outcomes. They considered that they therefore may have different levels of learning style preferences in different learning tasks.

Nature of Assessments

Nearly all student interviewees pointed out that the exam-oriented educational system in Hong Kong had influenced their development of learning style preferences. They believed that teachers should be familiar with the assessment format and relying

on them was the best way to achieve good academic results. They therefore sometimes had a high preference for dependent learning, especially when they had assessments. Take essay writing as an example, many students expected their teachers to explain the assignment requirements clearly (such as essay types and assessment rubrics), analyze different sample essays and highlight writing features for them. If possible, they sometimes expected their teachers to read their outlines and drafts and give them feedback before submission. Some said,

"At tertiary level, the lecturers are the examiners. To get a high GPA, of course I should meet their requirements. The GPA can determine my path and future development. If I don't rely on them and listen to their instructions, how can I get good academic results and get into university? I think my dependent style is actually caused by the exam-oriented and achievement-oriented education system."

"The education system in Hong Kong emphasizes exam performance. If I can't get good results, I can't get into university and get a good job. Started from kindergarten, I had dictations, quizzes and tests every week. If we want to perform well in those assessments, we've to listen to teachers and understand the exam requirements. Teachers have an important role in my learning, especially when preparing for public exams. It's impossible for us to discover the exam rules and tips by ourselves. Teachers have lots of experience in this area."

Most of the students believed that understanding their teachers' expectations and requirements well could help them get better grades. This caused them become dependent.

"The assessments were designed by our teachers. If we want to get a good grade, we should of course listen to our teachers. They might give us tips for exams. To a certain extent, I'm quite dependent."

"In the college, my lecturer is the one who marks my assignments. The only way to get good results is to follow my lecturer's instructions and guidelines, and understand my lecturer's requirements... sometimes I even asked my teachers to comment on my drafts before submission. I think understanding their expectations is very important."

Many community college students in Hong Kong put lots of effort into academic studies as they see the assessments in college as the last chance for them to get into university. They therefore have a high preference for dependent learning, especially when they have to be assessed.

Group activities and assessments

Nearly all higher ability students said they preferred to do assignments

individually because they could not trust other people's ability and worried that other students input might affect their academic results. Some students even complained that group assignments are unfair to students who have higher ability as they felt that many lower ability students were "free-riders" and they always had to finish assignments for them. In contrast, the lower ability students had a higher preference for group assessments as they believed the higher ability students could help them finish the tasks successfully and get better academic results.

"I don't like doing group projects with my classmates because I'm worried that they may affect my academic results, especially those lazy and/or lower ability students."

"We rarely do revision together. Many students do not want to share their notes with others because every student in the college is their competitor. We also never do assignments together because they worry that other students may copy their ideas. I think it's very common in Hong Kong, not only in this college. The competition is too fierce."

"If you ask me to write a 2000-word essay, of course I prefer to do it with other classmates. At least, they can help me proofread my writing and share the work. Maybe this can help improve my grades."

Interestingly, many student interviewees, including both higher ability and lower ability students, do not have strong opposition to group learning in normal class activities, which do not involve assessments, though some higher ability students believed group learning in class may not always be helpful for their learning. Some students said,

"It's okay to have group activities if I won't be assessed. I don't mind doing the tasks with other students. Maybe I can learn something from them."

"Group activities may be useful for us to a certain extent. For example, I like the games in class. We can't play the games individually. Individual learning may be quite boring sometimes. But the group tasks should not be related to assessments."

Based on the interview findings, it can be seen that students may have different levels of preference for group learning according to the nature of learning tasks. Many higher ability students generally have a higher preference for group learning for learning activities which do not involve assessments. On the other hand, many of them do not prefer to have group assessments.

Some students suggested that the tight learning schedule might also influence their preference for group learning. Hong Kong tertiary students usually have to enrol in 18 - 20 credit hours per semester, and most of the courses comprise both

continuous assessments (e.g. essays, presentations and projects) and examination. Some students may have part-time jobs after school. Many tertiary students may have difficulty in time management, especially at the end of the semester when they have to submit assignments. They therefore prefer to have individual work, rather than group project, as they believe that they can handle their work and manage their own time better if they can do the assignments individually.

"I don't like group projects. Everyone is busy with other assessments and part-time jobs. We also have different learning schedule. It's difficult to find suitable time to work and study together. If we work individually, we can do the assignments according to our own schedule. We don't have to check whether other students are available or not."

"It's very time consuming to work with other students. We've to spend lots of time discussing the work and have to make sure that everyone agrees with what we have discussed. If we are lucky enough and have responsible teammates, we can share our work and do the work efficiently. If we have lazy teammates, we may even have to spend much more time doing their parts. I think individual work is less time consuming and at least, I don't have to spend time discussing my ideas with my classmates and persuade them to use my ideas. We are too busy as our learning schedule is too tight."

Some students said they understood the advantages of group learning, but had difficulty to do that after class due to the limitation of time. They therefore had a higher preference for in-class group activities than after-class group work. They said,

"It's Ok to do the group work in class, but I don't like after-class group projects and assignments. It's very difficult to gather my teammates and work together. We are from different programmes and have different timetables and sometimes even have different study venues. Some students have part-time jobs and some of them have lots of extra-curricular activities. If we have to do a group project, we may have to discuss it through online chatroom or Facebook. We usually do different parts of the project individually and then combine the parts together before submitting the project. We sometimes don't even have time to read other people's work and then submit the project. We know that this is not a good way of learning and we understand the advantages of group learning well, but we don't have time to work together. It's also impossible to form study groups after class because it's quite difficult to find suitable time to study together."

In addition, many students preferred to work individually as they believed they could ensure the best quality of work. They found difficult to work with students who had poor learning attitudes and limited English language proficiency as they did not want to spend extra time to help them finish their work.

"It's hard to have a good division of labour. Some students are too weak in English and some students are very lazy. We may have to spend much time helping those students for group work and sometimes even have to finish the work for them. It's also difficult to contact them after class. For individual work, at least everyone has the same workload and we don't have to help others finish their work. It's less time consuming."

"Some students like doing their homework the day before the deadline. But I don't like burning the midnight oil with them. It's impossible to work with them because my schedule is fully packed already. I usually start my work at least two weeks before the deadline... In-class group activities are Ok for me because at least the teachers will monitor our groupmates' work and make sure that they are on task."

Syllabi and curriculum

Nearly all students interviewed felt that the education system in Hong Kong put too much emphasis on memorization of knowledge, instead of discovering language. Some commented that this caused them to be less independent in learning and hindered their analytical ability. They said they expected teachers to give them all necessary learning materials, such as handouts and learning exercises. Some students added that they expected their teachers prepare model answers for each question and

analyze the questions so as to help them memorize the knowledge easily.

"In public exam, most questions test students' ability of memorizing knowledge, though English focuses more on applications and skills."

"To prepare for English exam, my former school usually requires us to memorize the vocabulary and sentence structures. We were given a vocabulary list and lots of handouts about sentence structures. Sometimes I don't really understand the meaning well, but the English public exam usually requires students to use a wide variety of vocabulary and sentence structures. To get good grades in public exam, we've to use many difficult words and complex sentence structures."

"The education system in Hong Kong does not test students' ability on discovering knowledge. Students only have to memorize the knowledge from handouts prepared by teachers."

Some interviewees described the education system in Hong Kong as a spoon-fed one, which aims at preparing them for their examinations, instead of helping them to acquire and discover knowledge.

"I don't really know how to learn independently. I expect my teachers to give me lots of handouts and explain each question and all difficult words for me."

Although after I get into this College, I notice that we should not rely on our teachers too much, I still expect them to give me lots of handouts. If not, how can we prepare for the assessments?"

"I know that we shouldn't rely too much on our teachers because the best way of learning a language is to acquire it in daily life. But I feel better if teachers can give me lots of handouts and exercises because I used to learn in this way. For example, in an essay writing lesson, I expect my teacher to analyze the different parts of a good essay for me. "

"I started to be spoon-fed since I was a primary school kid. It's quite difficult for me to change my way of learning."

Furthermore, some students expected teachers to prepare all learning materials for them because they said they did not have time to find extra learning materials and discover knowledge due to the tight learning schedule and packed syllabi. Many students also expect teachers to analyze key language points for them as they find that they can learn more efficiently that way.

"Yes, I understand that the ideal way of learning is to learn independently and discover knowledge by ourselves. But I find that it's quite difficult to do that. We have to spend so much time at school and have to do so many assignments, we

don't have extra time to read extra learning materials and discover knowledge at library. We expect our teachers to give us the 'chicken essence' handouts which highlight the important points. The handouts should also be concise and easy to understand because I don't want to spend so much time checking the meaning."

Some students found that they had difficulty balancing workloads. Due to the limited time of studies, they could only rely on their teachers' learning materials and did not have enough time to find other learning materials by themselves. The packed learning schedule appeared to be an important factor affecting their learning styles.

"In secondary school, I relied much on my private tutors' handouts. The handouts were very concise and covered the important points only. The tutors also analyzed the language points for me. In secondary school, I studied 6 subjects and spent 18 hours per day on my studies. And now, I take 5 courses per semester and spend 10 hours on my studies and several hours on my part-time job. I don't think I have to find extra materials because I don't have time to read them and don't even have time to find them."

"Time is an important factor. If I only have to focus on this subject (EAP), of course I am willing to read more books and find more materials to enhance my learning. But for my situation, it's hard to do so."

(c) Cultural beliefs and values

Role of teachers

Some students suggested that the Chinese traditional culture may be related to their learning style preferences. The Chinese Confucius tradition stresses teacher authority and requires people to show their respect to their seniors. For example, many Chinese people see teachers as the source of knowledge and never doubt the academic ability and moral values of teachers. They reflected that their teacher-modeling learning styles might have originated from the Chinese Confucius culture.

"Although I was born in Hong Kong, the Chinese tradition still has influence on my learning. In the Chinese culture, we should show our respect to our teachers. We never doubt about our teachers' ability because we assume our teachers know all the things. So I always expect my teachers to be my role models."

"I think that's the Chinese traditional culture - sitting quietly and listening to teachers' instructions. We have to listen to teachers' instructions."

"At school, to be obedient is a way to show respect to teachers. We don't speak much in lessons and our main role is to listen to our teachers."

"Starting from primary school, our teachers expect us to listen and follow their instructions because we have to respect them."

Ways of acquiring knowledge

Many students pointed out that the Chinese culture of learning put much emphasis on memorizing knowledge, as Chinese people believe that the process of memorization can deepen learners' understanding of knowledge. After acquiring basic knowledge through memorization, learners can further develop and investigate knowledge independently. It is therefore common to have dictations and recitations in both primary and secondary schools in Hong Kong. Many student interviewees said they started learning through memorization when they were in kindergarten. They believed that memorizing knowledge can deepen their understanding and is also a way of establishing a solid foundation of knowledge. Analytical learning is not much emphasized at an early stage of learning as Chinese people generally believe that one should be able to analyze and investigate knowledge after acquiring the basic knowledge through memorization.

"We had dictations every week. It is a good way of learning vocabulary. In secondary school, the assessments mainly test our ability of memorizing knowledge. Maybe it's because we should lay a good foundation of knowledge before we get into university. My teachers didn't teach us the way of analyzing

language. We only have to memorize the sentence structures and functions and use them in exams. My teachers said when we get more advanced, we will be able to further expand the knowledge and analyzing things."

"My parents always emphasize the importance of memorizing knowledge. To get good academic results, we should have good ability of memorizing things. When we get older, we should further expand our basic knowledge and put it into practice. At an early stage, analytical thinking is not much emphasized. Maybe after we get into university, analytical thinking will become more important."

"I still remember a Chinese proverb said after reading ancient work for hundred times until we get familiar with that, we will be able to understand and reflect on the knowledge I think that's one of the rationales of Hong Kong or Chinese education. After memorizing the basic knowledge, we will be able to understand it and put it into practice. The first step is to get familiar with the texts by memorizing them and finally we will be able to develop our own thinking."

Although students generally believed that memorization is an important step in language learning, especially in vocabulary learning, many also pointed out that memorization might be more useful at the early stage of learning and having good analytical thinking skills is essential for learning academic English, which is a more advanced level of English language learning when compared to general English. For

example, many student interviewees said good analytical skills and critical thinking skills are important in academic reading. In order to understand an academic text fully, they have to guess the meaning of words and identify the implied meaning by analyzing the texts. Having good basic vocabulary knowledge is essential in order to help them use the academic reading skills effectively.

"In primary and secondary schools, we had to memorize the meaning of vocabulary and even the grammatical usage, such as tenses, like 'go, went, gone'. If we don't know the basics, how can we get to another stage? For example, in EAP lessons, we have to learn how to paraphrase and summarize a passage. If we don't understand the words and the grammatical structures, how can we understand the texts and rephrase the sentences? Of course, at this level, I don't think memorization is as important as before. When we have to write an academic essay, we have to use different sources. We have to check whether those sources are reliable or not, and whether the sources are suitable for our essay. To learn how to write an essay, we can't memorize the samples because it's plagiarism."

Students found that memorizing the basic grammatical structures and vocabulary is important at the basic level of English language learning. They considered EAP as a more advanced stage of English language learning, which memorization might not be an effective way of learning.

"Memorization is important in some areas, such as basic grammatical structures and vocabulary. EAP lessons focus more on advanced language skills. Paraphrasing, summarizing, using different citation formats, delivering academic presentations, writing academic essays and reports, are the skills that I acquired in EAP lessons. I don't think memorization is effective anymore. Take learning the citation formats as an example. There are so many types of sources, such as book chapters, journal articles, Youtube video, press release, newspaper articles etc. Is it really important to memorize them all? We can just google the format. Of course, we should understand the basics first in class, and then we can just follow the websites or guidelines."

The interviews show that students' learning styles may be different when they learn different aspects at different stages. Students believed that memorization might be essential when they learnt general English, but when they proceeded to a more advanced level, they might have a stronger preference for analytical learning.

Face (Mianzi) in Chinese cultural values

In the Chinese culture, face means personal esteem, prestige and reputation. Some students said they did not want to show their weaknesses in front of class and therefore had a stronger preference for individual learning. They were afraid that they may lose face if they make a mistake in front of the class. A student said,

“The concept of face in the Chinese society is important. We always try to avoid making mistakes by being quiet in class. I think that’s the main reason why we never form study groups. I know that forming study groups is very common in Western countries, but I don’t think it works in Hong Kong. Many students don’t want to reveal their weaknesses.”

“Even if I don’t understand the concepts in class, I won’t ask my teachers in class. It looks stupid if I raise a question which everyone knows the answer. I don’t like answering questions either because I think other students’ English is better than me. I feel bad sometimes.”

Self-oriented personality in the Chinese culture

Some added that self-oriented personality among Hong Kong Chinese might be related to their learning style preferences. In Hong Kong, competitions among students are very fierce. There are less than 20% of school leavers in Hong Kong can get into university. Many Hong Kong students treat their peers as competitors and believe that sharing resources with others, such as handouts, may affect their chance of getting into university.

“In Hong Kong, everyone concerns much about money and personal interests. I think that’s because Hong Kong is an international financial centre and

everyone has a strong interest in money. Academic qualifications are of course related to money. A university graduate of course can get better salary than a Form Seven graduate. To get into university, many students never work and study together because they don't want others have academic improvement. They never share notes. I'm now studying Business in this college and I find that this situation is very common among Business students. The higher ability students usually work together in group projects, and they usually ignore the weaker students. They know that other higher ability students can help them get better grades."

"In Hong Kong, everyone has a fast pace in working, walking and talking. If you stop and can't make a decision immediately, you may have lost a chance. In classroom, when the teacher is teaching a concept and you don't understand and ask your classmates, I don't think they want to answer you because they may worry that they will miss one or two points which are related to the exam. People in Hong Kong are quite individualistic sometimes."

(d) Educational background

This research study involved students from different educational backgrounds. Nearly 60% of students completed the HKALE curriculum while the others have completed the HKDSE curriculum. The interviewees were also studying different subject areas, which include Aviation Studies, Business Administration, Life Sciences,

Information Technology, and Dental Studies.

Hong Kong Advanced Level Examination curriculum

The HKALE aims to prepare students for their further academic studies and/or employment. Most of the subjects, such as Use of English and most of the Arts and Humanities subjects only have a one-time examination as the assessment, while some subjects, such as Science and Chinese Language, may have some continuous assessment components. Except for Science subjects, which have practical laboratory work, nearly all of the subjects have paperwork assessments only. Some students explain that the syllabi of the HKALE may have influence on their learning style preferences. They believe that the overemphasis on paperwork and examinations may limit them in developing a wide variety of learning styles.

"The way of learning under the HKALE syllabus was quite boring sometimes. The lessons mainly focused on paperwork and we had to write a lot in order to prepare well for the final exam. The Use of English syllabus aims to help students use English to communicate effectively in different contexts. However, the exam mainly focuses on paperwork, such as reading and writing. Even for the listening exam, we also had to read lots of texts, summarize the information from the recording, and use those information to write different types of texts. All of the tasks do not involve any group work or communicative activities. We just studied individually and wrote quietly in class."

"We just had monotonous work every day. That was write.....write.... and write. [...] English might be the most interesting subject because at least we had some oral practices in class. But the oral practices are also very boring. We just had to follow the exam instructions, read the passages and summarize them. The most interesting part might be the discussion part."

Hong Kong Diploma of Secondary Education curriculum

Students who took the HKDSE curriculum generally believe that the curriculum may help them develop a wide range of learning style preferences. The main reason is that the HKDSE curriculum requires students to develop different types of learning skills and students consequentially develop a wider range of learning style preferences.

According to the Secondary School Curriculum and Assessment Guide developed by the Hong Kong Education Bureau, the English Language Curriculum aims at developing learners' general and linguistic knowledge, generic skills (i.e. communication skills, collaboration skills, critical thinking skills, information technology skills, problem-solving skills, creativity, self-management skills, numeracy skills and study skills), and positive attitudes and values. In the new curriculum, students have to take 3 English elective courses, which include non-language arts electives (Workplace Communication, Social Issues, Debating and Sports Communication) and language arts electives (Drama, Short Stories, Poems and

Songs, and Popular Culture). Different from the HKALE Curriculum which focuses mainly on the explicit teaching of subject knowledge (i.e. grammar, the four language skills, vocabulary) and traditional paperwork, the Electives provide learners with opportunities to explore knowledge through different learning approaches and emphasize the development of generic skills. Instead of traditional paperwork, students have to demonstrate their learning achievements through different forms, such as a drama performance, a debate activity, a display or a portfolio consisting of student's work.

"We had to use different skills to prepare for the HKDSE exam. For example, we had to conduct a research study and write a long essay on a research topic for the Liberal Studies exam. We also had to do a great variety of tasks, such as writing lyrics for a song and having a drama performance, for the continuous assessments."

"I think the HKDSE system provides us with some opportunities to develop different skills, and eventually we can develop a wide range of language style preferences."

However, some students argued that the HKDSE system is similar to the HKALE syllabus that both emphasize written work.

"The main objective of the HKDSE system is to prepare students for further studies and/or work. The Education Bureau introduced this new education system because many employers find that the students in Hong Kong do not have enough exposure to the world. I don't think the HKDSE can help that because we still have exams and we still have to memorize knowledge. The only difference is we have a new subject - Liberal Studies. But I have no idea about this new subject because it's also new to the teachers. The only way for us to prepare for the exam is to memorize the facts. That means it's just the same as the HKALE."

"The new education system still focuses on memorization of knowledge. The main component of the assessments is still the final exam. We still have to sit in the classroom and listen to the teachers, and do our work individually."

In this research, due to time limitation, it may be difficult to determine how the new HKDSE influenced students' learning style preferences. It is clear that more research should be done on this area.

Study fields

Students interviewed were from different study programmes. They said their ways of acquiring knowledge in other subjects might influence their learning style preferences in EAP. For example, some students believed that studying Science helped them develop a higher preference for analytical learning style and independent

learning style.

“I studied Science in secondary school. I’m familiar with laboratory work and analyzing things. I developed logical thinking in Science. I’m able to use the skills I acquired in Science in other subjects. For example, I use my logical thinking and analytical skills to analyze the English language. I also found that practical work can enhance my learning.”

“The study of Science makes me understand the importance of analytical thinking. To discover knowledge, we should have good analytical skill and be sensitive to the world around us. Newton discovered gravity under an apple tree. If we are not sensitive to the world, we can’t improve the world. I always prefer analytical thinking, not only in Science subjects, but also in other subjects, including English.”

“I’m now studying Aviation Studies. In the programme, we’ve to take some Business courses, such as Management Studies. Business is a special subject. In secondary school, I just had to memorize the notes. Now, I understand that we can’t just memorize things if we really want to learn something. In Business lessons, we have lots of management real-life case studies. We can’t just memorize the notes and copy the business theories. We’ve to understand the theories and analyze the cases carefully. The programme has trained my

analytical ability... This is the same as English language learning. If we just memorize the phrases and vocabulary given by our teachers, we may not be able to use it in daily life. The process of analysis is important. It can deepen our understanding.”

Study environment and teaching approaches of students' secondary schools

Some students suggested that the schools they attended might have great influence on them. Some students interviewed had studied in both Chinese-medium secondary school and English-medium secondary school, while some had studied in international schools before they were admitted to the college. They said learning in different schools caused them to develop different learning style preferences.

A student, who transferred from an English-medium secondary school to a Chinese-medium secondary school in Form 5, identified the differences in learning approaches in the interview. He said,

“I studied in an English-medium secondary school from Form 1 to Form 5. Because of my unsatisfactory HKCEE results, I got into a Chinese-medium secondary school. I found that the teaching approaches were very different. It seems that EMI secondary school focuses more on independent learning and gives students more opportunities to explore different English texts. I think that’s because the students in EMI schools are more intelligent and have a higher standard of English language. But for the school I attended in Form 6 and Form

7, my teacher used Chinese to teach English. She translated the vocabulary for us and gave us lots of handouts. Of course, the students there were weaker. The teachers there may think that they don't have the ability to learn independently. I think if I were educated in a CMI school for my junior secondary education, I might rely much on my teachers. They gave us too much input. I think the best way to learn a language is to be able to explore by ourselves."

In the same interview, another student who had a similar educational background also said he had similar learning experiences.

"Yes, there's a huge difference. Some of my friends said the CMI teachers were too 'hard-working'. I don't think spoon-feeding is an effective way to learn a language."

A student who studied in an international school in Hong Kong said the way of learning in international school was quite different from the mainstream schools in Hong Kong. She said,

"In my school, there were lots of activities in each lesson. My school encouraged students to discover knowledge, not just sitting in the classroom. We actually moved a lot in class. Before I got into the international school, I studied in a local secondary school. The English lessons were quite boring. In contrast, the

international school designed lots of activities for us, such as role-play, games and field trips. I like this way of learning because I can use the knowledge right after I acquired it. It's more practical and less boring. Maybe it's called tactile learning or kinaesthetic learning according to your list..... Yes... and I think it's not common in mainstream schools. We also had problem-based learning. I think it's becoming more common in mainstream schools after the implementation of Liberal Studies. We had to do lots of projects. Of course, when I transferred from a mainstream school to an international, it took me a few months to get used to this type of learning. But when all subjects use this kind of learning approach, you've to get used to it."

(e) Teaching styles and learning styles of students' former English teachers

Most student interviewees said the teaching styles of their former English teachers had a very significant influence on their learning style preferences. They believed that their learning style preferences may be developed from their former teachers' teaching styles. For example, some students said their former English teachers adopted a relaxed approach which gave them much freedom in choosing the most appropriate learning approach, such as learning through reading newspapers or doing language exercises in class. Because of this kind of teaching style, many students started to develop independent learning and analytical learning. A student said,

“We enjoyed lots of freedom in English classroom. My former teacher did not teach much in class, instead he encouraged us to explore knowledge by ourselves. For example, he asked us to bring the recent news articles to school and we discussed that in class. If we didn’t understand the vocabulary, he encouraged us to look up the dictionary and discuss that with other classmates. We also highlighted some sentence structures that we hadn’t learnt before. By that time, I started developing independent learning and analytical abilities. I’ve get used to it.”

“I studied in a Band 1 secondary school. My teachers always assumed that we all had a good foundation of English already. They therefore did not teach us grammar in senior high school. They also assumed that we all should be able to learn independently, so they did not explain the language much. When we got into senior form, our teachers always asked us to do lots of public exam past papers and exercises and then they gave us the answer without explaining them. If we want to know the explanation, we have to read the grammar reference books and dictionaries by ourselves. If we really don’t understand that after reading the books and asking others, the last step is to ask our teachers. For me, I think it’s Ok to learn in this way.”

On the other hand, some students said that their former teachers adopted a teacher-centered approach in English lessons. Their teachers provided them with lots

of handouts and spent much time lecturing. Some students mentioned that they were given lots of vocabulary lists and were required to memorize them. They said they relied much on teachers' explanations and did not have training on language analysis. They therefore developed learning style preferences according to their teachers' teaching styles.

"My school teachers lectured a lot in English lessons. We had lots of handouts and language exercises. First, they explained the new language items, such as grammar, new sentence structures and vocabulary, and then showed the examples. Then, they would ask us to do the exercises. Every week, they gave us several pages of vocabulary and we had to memorize them. I think this can enhance my learning because I find this type of teaching is more solid and I know I'm learning something in each lesson."

"I relied much on my private tutor. My private tutor said public exam markers like reading essays which have lots of difficult vocabulary and complicated sentence structures. He therefore asked us to memorize lots of difficult vocabulary and sentence structures. He also selected some recent newspaper articles and highlighted the vocabulary for us. I like this kind of teaching because I don't have to do much, just memorize the important parts and sit for the exam."

“It really takes time for me to get used to the new approach of learning in this college. In the past, my role was to sit and listen in class. I didn’t have to do much. Now, I have to be more responsible for my own learning and find out the answers by myself. To be honest, it’s quite difficult to do that. You know, over the past 12 years, I learnt in this way (teacher-centered approach). It’s not easy for me to change my own learning style preference. But maybe one or two years later, my learning style preference may be different. I think it depends on the teaching styles of teachers.”

“I know that in many Western countries, discovering knowledge and independent learning are highly valued. But in Hong Kong, it seems that many Hong Kong teachers prefer their students sitting in classroom and listening to them. If all students are not exposed to other learning approaches, how can they develop other learning styles? I think that’s the main reason why many students may not have a strong preference on independent learning and analytical learning.”

Some students suggested an important Chinese traditional educational concept – academic inheritance (*shicheng* 師承). In Chinese society, teachers have a very important role in students’ learning, and even in their whole life. In addition, teachers are expected to be good role models academically and morally because students may imitate their teachers’ behavior and even their way of thinking. Students may be nurtured to have certain learning style preferences which may be similar to teachers’

learning style preferences as their teachers may share their way of learning with them through adopting the teaching approaches which match with their own learning styles.

“I do feel that teachers have an important role in my learning process. Inspired by my former teachers, I understand the importance of learning English and the effective ways of learning English.”

“In Chinese, a proverb says ‘Be my teacher for a day, be my teacher for a lifetime (一日為師 終身為師)’. Of course, it’s the 21st century already and it may not be applicable in some situations. But I still feel that my teachers have some kind of influence on my learning. The way they taught us has nurtured my way of thinking.”

“My teachers taught us in this way because they felt that that’s the best way to learn. I was nurtured under this kind of learning environment and of course, I’ve develop certain kinds of learning style preferences. Their teaching styles definitely have some influences on my learning.”

4.3.1.2 Students’ perceptions about the relationship between learning styles and teaching styles

This section aims to answer research question 5:

What is the relationship between learning styles and teaching styles in Hong Kong EAP classrooms at community college level?

The aim of this question is to identify the relationship between learning styles and teaching styles. Although this study could not explore the relationship between them quantitatively due to the lack of teaching style quantitative data, the researcher still tried to explore the possible relationship through qualitative methodology in order to investigate whether matching or mismatching learning styles and teaching styles could benefit English language learning in community college contexts. Interestingly, before the researcher asked the students about relationship between learning styles and teaching styles, many students had already identified that their former English teachers' teaching styles had a great impact on their development of learning styles and they found that their learning styles might eventually be similar to their former teachers' teaching styles. The related results have been presented in the previous section. The researcher then furthered the discussions by asking them their perceptions regarding the relationship between learning styles and teaching styles.

Many students said they preferred teachers whose teaching styles were similar to their learning style preferences.

“In secondary school, we were not allowed to choose our own teacher, class,

and time slot. But now, in college, we can choose the teachers who can suit me well. I don't like group activities. I won't choose those who like asking students to do lots of group work in class."

"I like teachers who can understand my need... For example, I'm quite exam-oriented and I prefer teachers who can prepare me well for exam and give me lots of useful handouts."

"I like teachers who can respond to my learning styles... and similar to my styles. It makes me feel easier to learn in a familiar learning environment."

Some students explained that they preferred English teachers who could have a good match between teaching styles and learning styles due to their English language proficiency.

"I feel more comfortable with teachers who can understand my styles. My English language proficiency is quite low. I don't want to spend time on adapting to a new learning environment which requires me to develop new learning styles. It's quite distracting!"

"I'm not confident with my English, but I'm now happy with my learning styles. I'm not sure what will happen if I have to be exposed to new styles."

“If my teachers’ styles are so different from mine, I doubt whether I’ve to ability to deal with the foreign language and the new styles at the same time. Luckily, at this stage, my lecturers still suit me well!”

Some students also commented that the limited time spending with their teachers in every semester cause them had a higher preference to teachers whose teaching styles could match with their learning styles well.

“Every semester is too short! We’ve to change our English lecturer in every 3 months. Sometimes it may take plenty of time for me to adapt to the new environment. When I start to get used to a new style, the semester may have ended already. A new teacher who has other teaching styles comes.”

“Sometimes I don’t like the tertiary system. I’ve to do the add/drop procedure in every semester in order to ensure I’ve the same teacher. I don’t want to adapt to the new environment in every semester. In secondary school, we had the same teacher for the whole year. Even though the teacher used some new teaching approaches, I still had time to get used to it. But now, we can only spend 3 hours per week with the lecturer and after 3 months, we have another lecturer.

However, surprisingly, some high language proficiency students said a mismatch

between their learning styles and their teachers' teaching styles may not cause a significant impact on their classroom learning, unless there is a large discrepancy between their styles and teaching styles which they cannot accept.

"I think every person, including teachers, should have his/her own styles. It's impossible to have a teacher who is the same as yours. In tertiary classroom, self-learning is very important. The role of teacher should be like a facilitator. They may sometimes bring new learning experiences to us."

"Tertiary learning is different from secondary schools. The teachers are from different countries, and have different backgrounds. As a tertiary student, we should be open-minded and welcome any new challenges. When we get to society, we can't force our boss to respond to our needs, and think of us all the time. The society is full of diversity."

"I find that the teachers in this college are very experienced. At this stage, I still can't find a teacher whose teacher styles are unacceptable to be. I'm also quite open-minded... little bit different might not affect me much. But I've heard of a classmate telling me that a teacher always had group discussions most of the time in every lesson and just asked them to come out and present. I don't think I can accept that because I think the lesson should at least have other components which are similar to my styles... at least the teacher can include some individual

work. That's totally out of my expectation of what an English lesson should be."

"It depends on how much difference my styles and their styles are. Some differences should be fine for me, but huge differences might be a problem for me, maybe most of my classmates."

The interview findings revealed that different students had different perceptions towards the relationship between learning styles and teaching styles. The student interviewees identified that English language proficiency and the length of time spent with their English teachers were essential factors related to their perceptions towards learning styles and teaching styles.

4.3.2 EAP teachers' English language teaching styles

This study cannot show the quantitative results of EAP teachers' teaching styles. The main reasons are presented in Chapter 4. Therefore, the researcher conducted several individual interviews with the teacher participants in order to gain a more detailed picture of their teaching styles. In the interviews, the teachers were asked to identify their general teaching styles, along with the possible factors which might influence their development of teaching styles. They were also asked to comment on their beliefs about students' learning styles. Responses from the teacher participants were then grouped into different areas to correspond with research questions.

4.3.2.1 English language teaching styles of Hong Kong community college teachers in EAP contexts

This section attempts to answer research question 3:

What are the English language teaching styles of Hong Kong community college teachers in EAP contexts?

Most of the teachers challenged the reliability and validity of the teaching style questionnaire developed by the researcher and said they had difficulty identifying their teaching styles through the questionnaire. All interviewees believed that conducting interviews would be a more effective way for them to explain their teaching styles. The main reasons they gave were that they believed that their teaching style might vary depending on students' learning styles, level of students, course objectives, and the learning culture of the college that they were teaching in.

A teacher who had 20-years of ESL teaching experience said,

"I think I'm a flexible teacher. Different students may expect their teachers differently. I know my job is not satisfying students' expectation, but I can't force them to adjust themselves in order to fit my teaching styles. We have to put ourselves into their shoes."

Some teachers added,

“It really depends on the learning culture. I was educated in America. To be honest, I like their educational philosophy. But I think it’s quite difficult to practise that in Hong Kong because students are not familiar with that. In Hong Kong, I still prefer the traditional way of teaching. It also depends on the level of students. For students who have high language proficiency, maybe I’ll have more teaching styles in order to help them learning in different ways. But for students who have limited language proficiency, I might have to use the teaching styles which they are familiar with first. I don’t think the questionnaire can really identify my teaching styles accurately.”

“My teaching styles vary a lot. I know you want to focus on EAP teachers’ teaching styles only. But EAP is still quite broad. Some EAP courses mainly focus on public speaking and listening and of course I would prefer auditory all the time, but won’t prefer visual. We’ve to refer back to the learning objectives of the course. Some EAP courses are for a specific group of students, for example Arts and Humanities students. Those students are not very active and sometimes quiet, I think I won’t prefer kinaesthetic teaching styles for those students. But prefer it for my Science class.”

“My teaching style is based on the curriculum and the intended learning

outcomes of the course. Some courses might expect students to learning independently, while some might prefer them to have lots of practical experiences. Teaching styles might be very personal....just like what you said... my own educational philosophy. But I think I can't stick to my own teaching philosophy all the time because we have to interact with the students. My teaching philosophy is to understand students' needs and based on their needs, I've to do something."

A teacher said he would adjust their styles based on the course evaluation comments from students.

"Every time after reading the students' feedback forms for my teaching, I keep on changing my styles. I do believe that students should be exposed to a wide variety of teaching styles. But I find that some students really have difficulty learning under some teaching styles. For example, I expect students to ask me questions when they have problems. But my students expect us to approach them and give them support. At the end, I gave up. Personally, I prefer independent teaching style... but in reality I still prefer to give them lots of handouts, tell them what they have to do...because this is what they expect."

The interview findings clearly showed that teachers reported that they vary teaching styles in different educational contexts. The teacher participants, including

the researcher, could not identify the specific types of teaching styles they had. It can be concluded that teachers' teaching styles are based on several factors. The next section will explain the possible factors which might influence their teaching styles.

4.3.2.2 Factors influencing EAP teachers' teaching style preferences

The section summarizes the responses given to the study's fourth research question:

To what extent do different variables relate to Hong Kong community teachers' language teaching styles in EAP contexts?

Teacher participants summarized that there were six factors influencing their English language teaching styles. The six factors included: teachers' personal learning style preferences; teachers' cultural and educational background; students' learning style preferences; students' English language proficiency; teaching areas and syllabi of EAP courses; and learning and teaching culture of the institution.

(a) Teachers' personal learning style preferences

Most of the teachers said their teaching styles were based on their personal learning style preferences. Some believed their personal learning style preferences could lead to academic success and expected students also could develop certain

learning style preferences that might be similar to their learning styles. They could develop their teaching styles according to their personal learning style preferences.

They said,

“I think my teaching styles are more or less similar to my learning styles.”

“My teaching styles may be based on my learning styles because I think that’s the best way to learn and I may adopt the ways of learning to my teaching. I hope my students can also be a successful language learner.”

“I’m using my own way of learning to help students to learn. For example, I think being critical is important in language learning, I may ask students lots of questions in class and encourage them to think.”

“When I read the questions in your questionnaire, I noticed I might tend to answer the questions based on my learning. Maybe this indicates that I teach according to my learning style preferences.”

“I’m more comfortable to teach in way which can match with my learning styles.”

As described in the previous sections on learning style preferences, teachers' learning style preferences were found to be related to other variables, such as their cultural and educational backgrounds.

(b) Teachers' cultural and educational background

There is very limited research about the relationship between teachers' cultural background and their teaching style preferences. Due to the limited number of research participants, this study cannot make conclusive comments about the teaching style preferences of teachers from different cultural and educational background using statistical data. However, the interviews suggested that teachers' cultural and educational background may be related to their teaching styles.

A mainland Chinese teacher who was educated in China said,

"Comparing my teaching styles with those English teachers in China, I find that English teachers in China spend much more time on vocabulary. They always encourage students to memorize vocabulary and language expressions. I think that's because of the Chinese culture. I do believe that memorizing is the basics of learning. But of course the students should also be able to use the language after memorizing the rules. "

Some Hong Kong Chinese teacher who received education in Hong Kong and

English-speaking countries said,

"In Hong Kong, many teachers like giving drilling practices. In the Western world, it may not be common because they focus more on communicative skills. A teacher who receives education in Hong Kong may not be the same as those who study overseas. People in Hong Kong have a strong belief that practice makes perfect, but their practices mainly are the drilling exercises. In Australia, I had more experience to use English communicate with others in class. Those experiences can clearly influence my way of teaching."

"I don't like the Hong Kong learning culture either. Language learning should have lots of interaction between teacher and learners. But it seems that many traditional Chinese teachers prefer their students to sit and listen. It's not common in the Western countries. Luckily my parents allowed me to study in Australia."

A Taiwanese teacher who was raised in America and the United Kingdom commented that the American educational system and teaching philosophy were different from the Hong Kong educational system. He said,

"In America, students wouldn't just sit here, copy the notes, and listen to the lecturers. They have to take an active role in class and have to think critically all

the time. Teachers won't guide the students step-up-step and have lots of scaffolding. But I notice that the students in Hong Kong are so different from the American students, they always wait for the answers and expect teachers to give them lots of guidance or even exam tips. It seems like they don't want to think. They also expect teachers to give them answers. As a Chinese, I believe sometimes the Chinese culture can really affect us. Luckily, I was educated in America and I understand how important critical thinking is. I believe students should also develop critical thinking. I think my teaching styles are greatly influenced by the Western culture. Sometimes I want to inspire them by using what I acquired from America.”

A British teacher said,

“Students should be given opportunities to talk. Many Hong Kong students are reluctant to speak in class. I think it's not common in my culture. In ESL teaching, we should always try our best to enable students to communicate.”

The interviews showed that teachers' educational and cultural background could affect their development of teaching styles. The learning styles they developed from the educational and cultural experience could eventually become their teaching styles. Understanding how they acquired knowledge may help to understand their teaching styles.

(c) Students' learning style preferences

In this research, many teachers reported that they were teaching according to the learning styles of students. They considered that their teaching styles might change unconsciously when they taught students who have different learning styles.

A teacher who had experience teaching in China said,

"Personally, I liked kinaesthetic learning and group learning when I was a student. However, I don't think my personal learning style preferences are directly related to my teaching styles. Many students do not like moving a lot in class, especially in China. At the beginning, I planned lots of group activities which required them to move a lot. Eventually, I found that it might not be effective for them because they were not interested in those activities. I started to develop other teaching style preferences"

Another teacher said,

"It's not practical to ask the students what they prefer, unless we do a research on that. We design the activities according to our experience. We know what activities can motivate students and what types of tasks are useful for their learning. The higher ability classes may have different learning style preferences"

from the lower ability classes. Even though I prefer a particular learning style personally, it may not be successful in some classes. That's why when I teach different students, I may have different teaching style preference."

A teacher said,

"My teaching styles may be related to students' learning styles. I think I may have different teaching style preferences when I teach different types of students."

In this interview, some teachers noticed when there is a mismatch of their teaching styles and students' learning styles, they will narrow the gap between their teaching styles and students' learning styles first and will gradually guide their students to develop other learning styles. Some teachers said,

"I think we have to provide students with an affective learning environment first. Students may feel anxious and frustrated if they find that they have difficulty working with teachers whose teaching styles do not suit their way of learning well. Once I can build a good relationship, I can guide them and design activities which help them develop the learning style preferences which they may not be familiar with."

"Some students may feel shy to work with other students as they used to learn individually when they were in secondary school. If I force them to work with others in the first few lessons, they may be very nervous and this will affect their learning. To help them develop group learning, I usually ask them to do their work individually, and then in pairs, and after they have developed good relationship with their classmates, they can do the group work activities. In contrast, some students may prefer group work and have difficulty working individually. I will guide them to develop individual learning style by designing some pair work activities and simple individual tasks."

Although this research cannot provide quantitative data on how students' learning styles affect teachers' teaching styles, the interviews showed that students' learning style preferences may affect teachers' teaching style preferences to a certain extent. When teachers find that there is a mismatch between their teaching style preferences and learning style preferences, they will eventually develop other teaching style preferences in order to provide students with an affective learning environment. At the same time, some teachers may even guide students to develop other learning styles by designing a variety of tasks.

(d) Students' English language proficiency

Many teachers suggested that students' English language proficiency might influence their teaching style preferences. They found that the lower ability students

might need more support and guidance from them, and they therefore had a stronger preference on dependent teaching style when they taught those students. They also avoided providing too much analytical work as this might discourage students from learning English when they find the learning tasks are too difficult. Teachers might also have a high preference on group learning for those students as usually those students may not have much confidence in English. In contrast, when teachers had to teach higher ability students, they might use a wider variety of teaching style preferences, when compared to lower ability students. They explained that higher English language proficiency students were more willing and had more ability to accept the teaching styles which do not match their learning styles well. They also found that higher ability students usually had a wider range of learning styles than lower ability students. The teacher participants explained,

"It depends on students' English language proficiency. For those students who have lower English language proficiency, they may be nervous and lack confidence when they do the English tasks in class. If I follow my teaching style preferences and force them to develop the related learning style preferences, they may not be interested in my lessons. I usually prefer to teach the lower ability students according to their learning styles."

"I think the higher ability students can learn individually and have a higher preference on tasks which require them to think. For the lower ability students,

they may require lots of support from teachers and their classmates. They also do not have much confidence to do a task individually. So, I usually encourage the lower ability classes to do the tasks in groups, especially the difficult ones."

"It's quite difficult to say which teaching styles I prefer because I have different teaching style preferences in different classes. When I teach the lower level students, I may have less teaching styles preferences. But then I teach the higher level students, I may have more, because those higher level students have developed more learning style preferences when they have more English learning experience."

Interview findings suggested that students' English language proficiency can influence teachers' teaching style preferences. Teachers may have a wider range of teaching style preferences when they teach higher proficiency students, but may have less teaching style preferences when they teach lower ability students. They also have different teaching style preferences when they teach different students. In this research, quantitative analysis could not be done to investigate the actual relationship between students' English language proficiency and teachers' teaching style preferences. However, there is evidence showing that English language proficiency may be related to teachers' teaching style preferences to a certain extent.

(e) Teaching areas, syllabi and course materials of EAP courses

This research mainly focuses on the teaching styles of teachers who teach English for Academic Purposes at community college level. Most research studies are about the teaching styles of teachers in general or ESL teachers. They may ignore the fact that teachers who teach different aspects of English (e.g. English for Academic Purposes, Workplace English, General English) may have different teaching style preferences. This study has limited the research area, focusing on EAP teachers only, and has found that EAP teachers may have different teaching style preferences when they teach different aspects of EAP: academic reading, writing, speaking and listening. More importantly, different syllabi in different colleges may have different foci on language skills. For example, a teacher explained that students usually have to take two EAP courses in the 2-year curriculum. The first-year EAP course focuses more on academic speaking and listening, while the second-year course may focus more on academic reading and writing. When they teach the two courses, they may have different teaching style preferences. Some teachers said,

"I'm teaching EAP courses in two colleges. The courses are of the same level, but the content is totally different. This college focuses mainly on academic writing skills, and little bit on academic reading. Another college that I am teaching focuses on the four skills. I find that I have different teaching style preferences when I teach the EAP course in different colleges. For example, in this college, I prefer visual more, and have less preference on the auditory one than another college which focuses on the four skills."

"The syllabus can influence my teaching style preferences.[...] In many colleges, the EAP courses usually focus on academic writing and reading, such as paraphrasing and summarizing, writing different types of academic essays etc. Some colleges encourage students to learn academic vocabulary, give academic presentations and participate in seminars. It's quite difficult to identify which teaching styles I prefer when I teach EAP. For academic writing, I won't prefer the auditory one, but prefer the visual one. For teaching academic vocabulary, I prefer both. That's why I didn't know how to fill out the questionnaire."

Other teachers also found that it is “horses for courses” when they teach EAP because the same set of teaching styles may not be effective in all EAP courses. It is important to adjust their teaching styles according to the syllabus and intended learning outcomes.

"I usually read the course outline first and then decide on my way of teaching. Personally, I believe it's important to have a wide variety of teaching styles. But sometimes I may have a higher preference on a particular teaching style than another one when I teach different aspects, such as reading and speaking."

"For academic writing, I prefer visual, tactile, individual, sometimes may be group, depending on students' preference. I also prefer dependent, analytical,

and teacher-modeling. Academic reading may be similar to academic writing, but I don't think teacher-modeling is useful. For academic listening and speaking, I prefer auditory, individual, group, independent, and analytical. Teacher modeling is also my major teaching style preference for speaking. [...] Different courses on EAP have different focus and key learning points. Some may focus more reading and writing, and some may focus more on speaking and listening. My teaching style preferences are based on what students have to learn."

"I think it depends on the content and the intended learning outcomes of the course. The course outline usually lists what students have to learn, including the skills they have to acquire, such as group learning, critical thinking, and individual learning. I usually prefer to teach according to the intended learning outcomes."

The interview findings show that teachers' teaching style preferences are to some extent influenced by the content of the syllabus. However, due to the limited number of teacher participants, it cannot identify the major and minor teaching style preferences of teachers when they teach different aspects of EAP using statistical data. Furthermore some participants stated that their teaching styles are directly related to the design of course materials provided by course coordinators. One teacher said,

"Some course coordinators may put more emphasis on individual learning,

while some may include more group activities. Many colleges usually require all teachers to follow the teaching materials closely for fairness. As a teacher, I've limited control on the materials. My teaching should be based on the materials provided. The course materials are usually related to the assessments designed by the course coordinators. We may have to extend or adjust our teaching styles little bit sometimes."

"I agree that how I teach is sometimes based on the materials provided. I do personally have my own preferences, but sometimes I may adjust little bit in order to make sure that my teaching styles could still help students fulfil the assessment requirements and finish the learning tasks."

(f) Learning and teaching culture of the institution

Many teachers in this study have experience teaching at different tertiary institutions in Hong Kong, the mainland China and overseas. They found that different institutions have different learning and teaching cultures, which are directly related to their teaching style preferences. For example, some teachers reported that some tertiary institutions emphasize much problem-based learning - students are encouraged to solve problems independently. As most of the students get used to this type of learning and they understand the advantages of problem-based learning approach, it is easier to promote independent learning and analytical learning in class. Teachers who teach in those institutions, therefore, have a strong preference for an

analytical teaching style and independent teaching style.

"The institution that I taught at before always emphasizes problem-based learning approach. All of the subjects, including Sciences and Humanities, require students to find out problems and solve the problems independently. In that college, I prefer problem-based learning because students can learn the most by solving problems themselves. However, I don't have a high preference on that kind of learning in this college because many students do not know much about it. If I use this approach in class, first the students may find it difficult to follow the lessons, second, they can't learn much because they don't have the skills to find and solve problems, third, they may say that they didn't learn anything in class because they have to solve the problems by themselves. I think it depends on the learning culture of the college."

"I think I've to follow the culture of the college. This college is a business college, which aims at training business professionals. There are some learning styles that I think business students should have, such as group learning and independent learning. I know that the college encourages teachers to implement collaborative learning in class. Many courses in this college require students to have group work activities. I, therefore, have a strong preference to group learning too. However, the college that I taught before did not have much group work."

"To a certain extent, my teaching styles are related to the learning culture of the colleges that I teach or taught. Ten years ago, when I was teaching at another college, I preferred independent teaching styles because of the college. But now, I find that my teaching styles have changed. I still think that independent teaching style is important, but I also prefer teacher-modeling. I find that students in this college expect teachers to give them lots of support, such as essay samples, and lots of handouts. If I don't do that, they may not be able to follow my lessons. Preparing lots of handouts and guidelines is the culture of this college. But anyway, I think this can enhance students' understanding of language. I think I am developing my teaching styles."

This study cannot provide conclusive evidence to show what kind of learning and teaching culture is related to a particular teaching style, due to the limited number of teacher participants. However, it can show that the learning and teaching culture of an institution may be related to teachers' teaching styles.

4.3.2.3 EAP teachers' perceptions about the relationship between learning styles and teaching styles

This section aims to answer research question 5:

What is the relationship between learning styles and teaching styles in Hong

Kong EAP classrooms at community college level?

As stated in the earlier section regarding to EAP students' perception towards the relationship between learning styles and teaching styles, statistical data on teaching styles could not be obtained and so this study could not find the relationship between learning styles and teaching styles quantitatively. Nevertheless, interviews were conducted to explore teachers' perceptions towards the relationship between learning styles and teaching styles regarding to English language learning. In the previous section regarding factors influencing teachers' teaching styles, some teachers identified their students' learning styles might be related to their development of teaching styles. This part will further explain teachers' perceptions about the relationship between learning styles and teaching styles.

Most of the teachers agreed that a good match between learning styles and teaching styles could help to build an affective learning environment.

"Students feel comfortable to learn in an environment which they are familiar with."

"If students find their styles match with teachers' styles, I think they may give high scores to those teachers in the learning experience survey."

"I'm not sure whether I'm trying to design activities according to my students'

styles or not. But I find that they are happier to have activities which suit their styles.”

“I think even for me, as an advanced language user, still prefer to have teachers could really know me well and could match me well.”

“My teaching is really up to my students.... I think students could learn efficiently in a happy and comfortable environment.”

At the same time, some teachers pointed out that differences between learning styles and teaching styles exist, but students could still learn effectively.

“Although I usually include activities which could match with students’ learning styles, I sometimes have some class activities which aim at helping students to step out from their comfort zone. As long as I give enough support or scaffolding to my students, they could handle it. I believe students should be able to learn in different environments.”

“My students are adults. I believe they have the ability to learn with someone whose styles are different from them. They should be flexible if they want to be successful in the society.”

“I think if the difference is moderate, that should be fine for them. Just make sure we can them support and help them step-by-step!”

“Whether the difference will affect their learning really depends on teachers’ teaching ability. A successful teacher should be able to bring new learning experiences to their students. Students may feel not comfortable at the beginning. But if you give them lots of encouragement and support, they should be able to tackle the challenges they have to face.

The interview results indicated that teachers generally believed matching learning styles and teaching styles could help build an affective learning environment, but also commented that some differences between learning styles and teaching styles could bring benefits to students. They also advised that teachers should provide support to students if they found that learning styles and teaching styles were mismatched.

4.4 Chapter summary

This chapter presents the qualitative and qualitative data collected from students and teachers.

The results of students’ questionnaire survey suggested that different groups of students have different learning style preferences when they study EAP. Additionally,

there were a number of factors, such as, gender, year of study, major field, type of programme, and educational background, that were related to their learning style preferences.

The student participants further reflected on their learning styles based on the questionnaire survey and identified the possible factors influencing their learning styles in the interviews. They also commented on their beliefs about the relationship between learning styles and teaching styles in relation to language learning in EAP classrooms. Due to the lack of quantitative data from teacher participants, the researcher could only collect data from interviews. The qualitative data collected is useful for understanding teachers' teaching styles and provides tentative explanations for why self-report questionnaire surveys may not be an appropriate research instrument for measuring teaching styles. In addition, this chapter also suggested factors influencing teaching styles and teachers' perception about the relationship between learning styles and teaching styles. The next chapter will explain and interpret both quantitative and qualitative data with reference to the learning and teaching style literature.

Chapter 5: Discussion

5.1 Overview

This chapter discusses both quantitative and qualitative findings with regard to Hong Kong community college students' learning style preferences and teachers' teaching style preferences regarding English for academic purposes (EAP).

As outlined in Chapter 3, this study aims to address five primary research questions. Those questions aim at:

- 1) identifying the English language learning style preferences of Hong Kong community college students in EAP contexts;
- 2) examining how different variables relate to Hong Kong community students' language learning style preference in EAP contexts;
- 3) identifying the English language teaching styles of Hong Kong community college teachers in EAP contexts;
- 4) investigating how different variables relate to Hong Kong community teachers' language teaching styles in EAP contexts; and
- 5) exploring the relationship between learning styles and teaching styles in Hong Kong EAP classrooms at community college level.

Findings from this study indicate that there are a wide range of factors that could be related to students' learning styles and teachers' teaching styles. The chapter will

discuss the interaction between learning styles and teaching styles. Findings are compared and contrasted with the literature on English language learning styles and teaching styles and are used to draw implications for classroom language learning.

5.2 Hong Kong community college students' English language learning style preferences in EAP contexts

Findings from the questionnaire survey indicated that students preferred teacher modeling most and preferred visual learning the least when they were studying EAP. Additionally, most of the students used minor³ learning style modes, including visual, auditory, kinaesthetic, tactile, group, individual, independent, dependent, analytic and teacher modelling learning styles.

As there are very limited previous research studies on learning styles of Hong Kong ESL/EFL students studying EAP, the researcher could only compare the findings with the previous research on Chinese ESL/EFL students in general. The research findings of this study are to some extent inconsistent with the previous findings on Chinese ESL/EFL students' English language learning style preferences.

Most of the learning style research (Chu, 2010; Jones, 1997; Melton, 1990; Park, 1997; Peacock, 2001; Reid, 1987) demonstrates that Chinese ESL/EFL students had

³ Major learning style (mean scores: 20-24) indicates learners prefer this mode of learning strongly and uses it for important learning. Minor learning style (mean scores: 12-19) indicates area where learners can function well. Negative learning style (mean scores: 11 or less) shows that learners may have difficulty learning in that way.

major preferences for some learning styles, such as kinaesthetic and tactile learning. However, in this study, large numbers of students chose minor, not major, learning modes. Reid (1998) explains that some participants, for example, Siberian and Japanese students in her study, might prefer to respond moderately to surveys and might not prefer to choose “*strongly agree*” or “*strongly disagree*”. It seems that most of the students in this study chose the “*moderate*” options. Similar to some studies on Chinese learners (Chu 2010; Peacock, 2001), very few students had negative learning modes, and there was no negative preference for any learning styles in general. This may demonstrate that most of the students had multiple learning styles, though many students chose minor learning modes.

Several learning style research studies (Chen, 1999; Chu, 2010; Jones, 1997; Melton, 1990; Park, 1997; Peacock, 2001 Reid, 1987) indicate that Chinese ESL / EFL students have a relatively higher preference for visual learning when compared with other sensory learning styles, and therefore these researchers may consider Chinese ESL / EFL learners as “*visual learners*”. However, it should be noted that those studies mainly focused on Chinese ESL/EFL students studying general English, instead of EAP. Different from these studies, which mainly focus on general English, findings from the current study show that visual learning had the lowest mean value. That means EAP students did not have a very strong preference for visual aids, such as PowerPoint slides, handouts and notes on the board, when compared with other learning styles.

Possible reasons for the above finding could not be found in the previous

literature as there are very limited research studies which compare students studying general English and EAP. Nearly all of the studies assume EAP is under the umbrella of English language education and that learners might have the same learning style preferences towards EAP and general English. One possible reason for the differences is that written language, especially academic English, is relatively more grammatically and lexically complex than the spoken language (Biber, 1988; Biber, Johansson, Leech, Conrad, & Finegan, 1999; Cook, 1997). For example, written language has more noun-based phrases, more nominalisations, more lexical variation, more long sequences of prepositional phrases and more attributive adjectives than spoken language. Therefore, EAP students who have just started learning academic English might have difficulty understanding and reading academic written texts, especially on their own. Students might, therefore, have a lower preference for visual learning.

In addition to this finding, students did not have a strong preference towards individual learning in this study. The results seem to be consistent with some research studies (Chu, 1997; Jones, 1997; Peacock, 2001; Winter, 1996) on Chinese ESL / EFL learners that Hong Kong students prefer a collaborative learning environment which could foster deep learning (Chan & Watkins, 1994).

Interestingly, the mean value for group learning ($M = 16.8430$) was close to that for individual learning ($M = 16.6013$) in this study, though students had a higher preference for group learning. It seems that these results contradict each other. Comparing the results with other research, group learning style was negative in Reid's

(1987) study and Melton's (1990), and minor in Jones (1997), Chu (1997) and Peacock's (2001) studies. The reason for this is not explained by those researchers.

To examine the reasons why this might be, the researcher asked the student interviewees to explain their preferences towards individual and group learning. Some students pointed out that their preferences were according to the nature of the learning task, the English language proficiency of their peers, and time constraints. For example, a student said that if time allowed they did prefer to form study groups or discuss the difficult topics together, rather than studying alone. Furthermore, some students said that if their peers had good language proficiency, they preferred to study together so as to foster deeper learning. However, they did not prefer to do group assessments, such as report writing and oral presentations, with students whose language ability was too low. Therefore, the results of this study may not be contradictory as students preferred group learning more than individual learning when time allowed and when they had peers who had similar or good language proficiency.

Among the ten learning styles investigated, the one students preferred most was the teacher-modeling learning style. That means students preferred teachers to give them lots of examples, show them how to do things or demonstrate ways of thinking, and apply language concepts in different situations directly. The new learning style item "teacher-modeling" was developed by the researcher in this study. The teaching style "personal model", which has the similar meaning of the term "teacher-modeling" in this study, was identified by Grasha's (1996) teaching style model. There is a dearth of studies that have investigated Chinese ESL / EFL students' preference

towards the personal model teaching style.

The student interviewees in this study explained the reason for this. They pointed out that the learning culture and the exam-oriented education system in Hong Kong might contribute to their high preference towards teacher-modeling learning style. In the interviews, many students mentioned that they expected their teachers showing them how to work out the answers or analyse the questions step-by-step as they had to ensure they could meet the standard of public examinations. In English writing classes, they preferred their teachers to show them how to analyse questions and brainstorm ideas. They also liked their teachers to show them good writing samples in order to understand the standard that they have to meet in examinations. Therefore, when they studied EAP at the tertiary level, they also preferred their teachers to show them sample assignments so as to understand their teachers' expectations.

In this study, the students also indicated that they had a high preference towards independent learning. The results of this study seem to be inconsistent with the picture portrayed by some earlier research on Hong Kong Chinese students' learning styles which describes those students as passive and dependent learners (Balla et al., 1991; Murphy, 1987; Pierson, 1996). In contrast, the findings confirm those studies (Chan, Spratt, & Humphreys, 2002; Gieve & Clark, 2005; Ho & Crookall, 1995; Jones, 1995; Lee, 1998; Littlewood, 1996) which indicate that Hong Kong students have a positive attitudes towards independent learning. The studies which show the unfavourable picture of Chinese students' reaction to independent learning usually depended on researchers' observation or teachers' response; while studies which

reported learners favoured independent learning usually involved self-report questionnaire survey designed for specific groups of students in specific contexts. Seemingly, the great contrast could be due to the differences in research methods. Students might have a high preference towards independent learning, but might not be able to show their learning style to their teachers and researchers due to some unfavourable situations, such as poor learning environment and curriculum design. Clearly, there is a discrepancy between students' own beliefs and teachers and researchers' beliefs towards students.

In addition to independent learning style, students had a high preference towards analytic learning style. Many western researchers (Biggs, 1996; Ballard & Clanchy, 1991; Carson, 1992; Connor, 1996; Cross & Hitchcock, 2007; Kumaravadivelu, 2003) describe Chinese learners' learning style as reproductive, rather than analytical. Those studies usually assume that memorization and analytical thinking are mutually exclusive. The questionnaire survey in this study cannot conclude whether students liked learning by memorization or not, but can conclude the learners in this study preferred analytical thinking in order to foster deep learning. This finding was consistent with some recent literature (Biggs, 1996; Chalmers & Volet, 1997; Chan, 1999; 2001; Kember, 2000; Kennedy, 2002; Mathias, Bruce & Newton, 2013; Tan, 2011; Tavakol & Dennick, 2010; Watkins, 2010) which challenge those stereotyped views on Chinese learners. Prosser and Trigwell (1999) point out that "deep learning approach" and "surface learning approach" could be simultaneously present during students' learning process. Some may argue that students in this study preferred

teacher-modeling more than analytical thinking and that the results might be contradictory, as students might follow the teachers' examples, without any in-depth thinking. The questionnaire survey findings can further confirm that teaching-modeling and analytic learning styles can co-exist in Chinese students' learning process (Jin & Cotazzi, 2006; Tweed & Lehman, 2002). In this study, the participants were at the beginning stage of learning EAP. Students in this study might have a higher preference towards teacher-modeling than analytic learning as they might prefer to consolidate their knowledge through following the models given by teachers more than analytic learning at this stage, though they still thought that analytic learning was important in learning EAP.

To sum up, the students in this study had multiple learning styles when they learnt EAP, though most of them indicated that they had minor learning styles, instead of major learning styles. The questionnaire survey also concluded that there was discrepancy between other learning style researchers' observation of Chinese students and students' own perception towards their learning styles. Many researchers assume that the Chinese Confucian culture has great impacts on Chinese students' learning styles, but ignored the fact that many factors, such as learning environment, educational curriculum and classroom practices, and so forth. could also have great influence on students' learning styles. Gieve and Clark's (2005) study on Chinese students studying in the UK found that learning context seemed to have the power to promote certain learning styles which contradicted the general expectations of Chinese learners. Littlewood (1999) also recognises that the influence of culturally

shared beliefs and practices on learning practices is moderated or even negated in individual differences. Therefore, this study also explored other possible factors, such as gender, educational background, and learning contexts, and so forth. which might be related to students' learning styles. Additionally, it was found that students' learning styles are complex, and might be flexible, that students might have different learning styles in different learning stages. It might be problematic to assume that students have certain learning styles at all learning stages. For example, in this study, students had both teacher modeling and analytic learning styles. Some researchers might consider that teacher modeling learning style as surface learning approach as students might simply copy or recite the knowledge from the authorities without much thinking, but this study showed that students also preferred analytic learning style. The reason for this might be students prefer to learn from the authorities first and then they use the knowledge they acquired from the authorities to start the next stage of learning – applying deep learning approach by analytical thinking. Therefore, more research can be done to investigate students' learning style preferences in different learning stages.

5.3 Factors influencing Hong Kong community college students' language learning style preferences in EAP contexts

5.3.1 Gender

The questionnaire survey showed that male students had significantly higher

preference for tactile, independent and analytic learning styles than female students. The findings were consistent with Oxford's (1995) research that males tended to be more tactile and analytical than females. It also confirmed several learning style studies (Amir & Jelas, 2010; Baneshi et al., 2014; Kraft, 1976; O' Faithaigh, 2000) that males had higher preference towards independent learning than females. Those studies explained that the process of socialization may contribute to the differences, but did not explain clearly why males or females preferred certain learning styles than the opposite sex. The student interviewees did not provide explanations on this. A number of researchers (Baneshi et al., 2014; Severines & ten Dam, 1997) explain that the differences in learning styles could be due to a great variety of factors, such as educational backgrounds and culture. Watkins and Hattie (1981) found that the differences between males and females vary across their study fields. The possible reasons for the differences might be more males than females study Science courses which promote tactile, independent and analytic learning styles. Although this study has provided information related to their major study fields at the community college level, but lacked the information related to their fields of studies in secondary school. It is possible that students majored in Science in secondary school, but chose to study other major fields other than Science at community college level. It is common that more males than females choose to study Science in Hong Kong. There are other possible reasons for the differences. This study, therefore, also explored other possible factors related to their development of learning styles.

5.3.2 Year of study

In this study, the mean values of learning styles of Year 2 students were generally higher than Year 1 students, except group learning. Year 2 students had significantly higher preferences for auditory, tactile, analytic, and teacher-modeling significantly than did Year 1 students. Most of the learning style studies compare the mean value of students according to their length of time studying English, but very few compare the year of study in a particular programme. All community college students have to take two English for Academic Purposes courses in order to meet the graduation requirements of the college. All Year 2 students in this study were taking the second English for Academic Purposes course when they participated in the survey, while Year 1 students just started taking their first English for Academic Purposes course. This implied that Year 2 students had more exposure to academic English than Year 1 students. The finding was consistent with Melton (1990) and Reid (1987) that the longer the students had studied English, the higher the preference means for auditory. Reid (1987) suggests that students might have more experiences with the language, and thus they become more comfortable with auditory learning. Another explanation provided by Reid is students become more auditory when they have adjusted to the English-medium academic classrooms.

The finding of this study also confirmed Zhang and Evans' (2013) research that students with more opportunities to learn a foreign language tended to have stronger preference in most categories of learning styles. They explain that with more exposure to learning a foreign language, learners tend to adapt their learning styles to meet the

increased demands of language learning. This might suggest that students' learning styles are changing and developing as learners go through the learning process.

We should notice that students had more exposure to other academic activities as well, not only English learning. For example, the Year 1 students in this study had studied at the tertiary level for a semester only, while the Year 2 students had been studying at the college for three semesters. Many Year 2 students found that they had to develop more learning styles in order to adapt to the academic life at tertiary level, which might be different from what they experienced in secondary school. One example is that the assessments at college required students to have analytical ability in order to further develop the knowledge, while the assessments in secondary school might just require students to memorize and understand the basic knowledge. At the same time, students had more exposure to academic English as both colleges used English as a medium of instruction in all courses, except the Chinese language courses. To adapt to the new academic life, students might start to realize the importance of developing different learning styles, especially when learning academic English, therefore, Year 2 students might have higher preference in most categories of learning styles.

5.3.3 Type of study programmes

In this study, both Associate Degree and Higher Diploma programmes students were invited to participate in the questionnaire survey. It was found that there were significant differences between the two programmes for kinaesthetic, independent,

and teacher-modeling learning styles. Associate Degree students had greater preference for kinaesthetic and independent learning styles, whereas Higher Diploma students preferred teacher-modeling learning styles significantly more than Associate Degree students.

Both Associate Degree and Higher Diploma programmes aim at equipping students with generic skills, knowledge in specialized disciplines and practical vocational skills, in order to prepare them for further studies at university or pursue career in professions successfully. Associate Degree programmes put more emphasis on general education while Higher Diploma programmes are more vocation-oriented.

There is no previous research comparing Associate Degree and Higher Diploma students' learning style preferences. The main reason is Hong Kong is the one of the few places in the world which offers both Associate Degree and Higher Diploma programmes. In addition, the Associate Degree programmes in Hong Kong have been established for less than 15 years. Very little research has been done on English language learning of community college students in Hong Kong. Hence, no previous literature can be found to compare the findings of this study.

Higher diploma students, who focused more on vocational education, preferred teacher-modeling more than Associate Degree students, might be attributed to the courses they studied focus more on practical skills. As many practical skills might be difficult for students to understand or cannot be found on textbooks, the lecturers usually explain the practical skills explicitly by giving examples or real demonstration so that students can follow the examples or demonstration easily in real-life situations.

For example, the Higher Diploma in Translation and Interpretation programme focuses mainly on practical knowledge and hands-on training in translation and interpretation in different fields, such as financial translation and legal translation. Teachers usually show them a range of examples with detailed analysis on how to translate a text accurately. Not unlike other vocational based courses, the Higher Diploma students might expect their EAP teachers to show them how to use the language by giving examples. This might imply that the nature of the programme they attended might affect students' learning style preferences.

Interestingly, Associate Degree students preferred kinaesthetic learning style significantly more than Higher Diploma students. Compared with Associate Degree students, Higher Diploma students had more opportunities to have kinaesthetic learning in other courses as the Higher Diploma programmes focused more on practical skills and students had more opportunities to actively participate in classroom physical activities which involved a combination of stimuli, such as field trips and role-playing. On the other hand, the courses offered by the Associate Degree programmes had less learning activities which required students to move around in or outside classroom. The reason for the high preference on kinaesthetic learning cannot be identified.

5.3.4 Study fields

This study was consistent with previous research (Kolb, 1981; Melton, 1990; Peacock, 2001; Reid, 1987; Vermetten, Lodewijks, & Vermunt, 1999) that significant

differences between different disciplines could be found for several learning styles: visual, auditory, kinaesthetic, individual, independent, and analytic learning.

Results indicated that Dental Hygiene major students had the lowest means for all learning style preferences, and Life Sciences students had the highest means for all learning style preferences, except individual learning. There was no previous research which compared Dental Hygiene major students with other disciplines. The mean difference between Dental Hygiene and Life Sciences students were pronounced. This is a curious discrepancy given that Dental Hygiene students would be expected to have considerably more human interactions than their Life Sciences counterparts.

However, it was found that previous research (Melton, 1990; Peacock, 2001; Reid, 1987) on other disciplines' learning styles did not match well with the present study. For example, science students had stronger preference for group styles and Engineering and Computer Science students were more tactile than Humanities students (Peacock, 2001; Reid, 1987). In addition, Language and Humanities majors had stronger preference to kinaesthetic learning than Science/Medicine and Business students (Melton, 1990).

There are several possible reasons for the differences. Melton (1990) states that the students in her study were assigned to their programme according to their public examination results or personal connections, and students could not select their interested majors based on their preference. In her study, only one significant difference could be found and she described that finding as "inexplicable" (p. 41). However, the students in this study chose their majors according to their preference,

though their academic results were also an important admission criterion. Another possible reason is students from the same disciplines, but learning in different countries, might have different ways of learning. For example, Reid's (1987) study mainly focuses on ESL students studying in U.S. The Business students' ways of learning in US might be different from the Business students in Hong Kong. Other possible reasons might be attributed to a variety of factors, including sample size, programme types, and prior academic experiences.

The interview findings may provide further explanations on the relationship between study fields and learning styles. It was found that students developed their learning styles when they studied other subjects. When they learnt EAP, their English language learning styles were then eventually influenced by the learning styles they had in other subject areas. In short, students' learning styles in EAP were closely related to the subjects they were taking. For example, the student interviewees said they developed analytical learning styles when they learnt Science and they therefore had a high preference on analytic learning when they learnt EAP. Many students tended to develop certain learning style preferences in EAP when they found that those learning styles could successfully help them meet the academic requirements of other subjects. The interview findings may suggest that students' learning styles in EAP are closely related to their study fields.

5.3.5 Educational background

Type of secondary school attended

This research study compared the learning style preferences of students from different educational background. Students who graduated from English-medium secondary schools had higher mean values of most of the learning style preferences, except dependent learning, than those from Chinese-medium secondary schools. Additionally, students who had Form 6 qualification had the lowest mean values for all learning styles, except group learning, when compared with students who had other qualifications. There is no previous research which compared the learning styles of students from the educational background that the researcher chose. The reason might be the learning style research studies conducted in Hong Kong mainly focused on university students who had high English proficiency and most of the university students in Hong Kong graduated from English-medium secondary schools. The research participants of this study were all sub-degree students who had lower English proficiency than the university students. Moreover, the 3-3-4 education system was newly implemented and there is a lack of research which compares students who studied the new curriculum with those who studied the old system.

Students who studied English-medium secondary school had higher mean values of learning styles in general might be attributed to the fact that they all studied in a learning environment in which required them to use English in both academic and non-academic contexts. Students might have more opportunities to be exposed to different teaching styles in English language contexts and develop more English language learning styles accordingly than those who graduated from Chinese-medium

secondary schools. Reid's (1987) studies on ESL students' learning styles found that non-native speakers who had lived and studied in the U.S. for a longer period of time tended to have closer preference means of native speakers of English. She concludes that students might adapt their learning styles in order to meet the demands of the educational system. This study might be able to confirm Reid's finding that students tend to adapt their learning styles or try to further develop more learning styles in order to meet the demands of the education system which requires them to use English in all learning contexts.

Those who completed secondary studies in English-medium schools had lower preference to dependent learning than those who were from Chinese-medium schools. The possible reason is most of the students from Chinese-medium school had lower English language proficiency than English-medium schools students and students needed more support from teachers than English-medium secondary school students. They, therefore, might rely on their teachers' support more than English-medium secondary school graduates.

The interview data of this study showed that students' learning styles might vary under different types of schoolings. The student interviewees compared their learning experience in different schoolings and found that their learning styles changed when they transferred to another school which adopted different teaching approaches. For example, a student in this study compared the learning approach in mainstream local schools and international schools. He found that international schools used more kinaesthetic, tactile and analytic learning approaches in English language learning

than in mainstream local schools. Another student said the English-medium secondary schools were less “spoon-fed” and encouraged more independent learning in English language learning than Chinese-medium secondary schools. This might suggest that even though students are from the same country and have the same culture could still have different learning styles due to the complex educational system of a society. Style researchers should have a good understanding of the educational systems, instead of focusing on the culture of learners only.

The research findings of this study indicate that the type of schooling learners had might influence their development of learning styles. This study originally included students who received secondary school education from other types of schooling besides local secondary schools in Hong Kong. However, due to the low number of research participants graduating from other types of secondary schools, the researcher did not compare the mean values of learning styles with local secondary school graduates. This study therefore, could not conclude how different types of schoolings affect students learning styles. Additional research should focus on the relationship between different types of schoolings and students’ learning style preferences.

Qualifications on entry

There is no previous research which compares the English language learning styles of tertiary students with different educational qualifications on entry. The reason is the 3-3-4 academic structure (six-year secondary education) was newly

implemented when this study was conducted and the old 7-year secondary school curriculum was still practising. All tertiary institutions, including universities and community colleges, at that time admitted both the candidates of the HKALE (the new educational system) and HKDSE (the old educational system). The double cohorts enabled the researcher to compare students at different entry levels. Additionally, the community colleges in Hong Kong accept students from different educational background, which includes local and international students who have completed secondary education, or Foundation Diploma / Pre-associate degree programmes. Therefore, this study could compare students' learning styles based on their qualifications on entry to the Associate Degree or Higher Diploma programmes.

The results indicated that those who had Form 6 qualification had the lowest mean values for all learning style preferences, except group learning. It was also found that Foundation Diploma / Pre-associate degree graduates preferred tactile and group learning significantly more than Form 6 graduates. It is possible that the Foundation Diploma / Pre-associate degree graduates had experienced tertiary studies, which put much emphasis on group work and hands-on experiences in classes and assessments, earlier than Form 6 graduates. Many secondary school graduates might not have had so many opportunities for group learning as they focused more on individual work in both school assessments and public examinations. On the other hand, most of the tertiary institutions include copious opportunities for group work in class work and assessments. Those who had completed Foundation Diploma / Pre-associate degree students should have more experiences in group learning more

than secondary school fresh graduates. In addition, all community colleges which offer Foundation Diploma / Pre-associate degree programmes aim at preparing students well for their career development and further studies, and so they encourage experiential learning and provide lots of practical hands-on experiences. Most of the courses promote experiential learning by requiring students to tackle real-life challenges by using the knowledge they have acquired in class in order to enable them to put theories into practice. During the learning process, students are given plenty of time to discuss, discover and create knowledge with other students. For instance, to help students understand how to conduct research, students may be asked to design their own questionnaires, go to different places in Hong Kong to interview tourists and present their findings to the class as parts of their assessments. Continuous assessments are commonly conducted to determine students' abilities. On the other hand, most of the secondary schools focus much on students' public examination achievements, many senior secondary school students spend most of the time on examination drilling practises.

Although the new academic structure encourages teachers to provide a wide variety of activities for students to learn English such as lyrics writing and role-playing, most of the teachers still focus on examination skills as the final public examination is the only criterion which can determine whether the students can gain admission to universities. Many secondary school students lack the opportunities to experience and use English in real life situations. As secondary school graduates did not have much experience in tactile and group learning, students might not be able to

develop those language learning styles.

The researcher interviewed students who studied the HKALE curriculum (the old curriculum) and the HKDSE curriculum (the new curriculum). The student interviewees compared the assessment components and the content of the syllabi and concluded that the whole curriculum highly related to their learning styles. The interview findings could further explain and confirm the quantitative findings of this study. Those who studied under the HKALE commented that the English syllabus focused much on individual written work. Students who studied under the HKDSE curriculum said the new curriculum required them to study a wide range of electives such as language arts electives and non-language arts electives, which encouraged them to develop different learning styles. They suggested that the variety of learning activities is related to their development of learning styles. Compared with the new curriculum, the old one might limit their development of learning styles due to the lack of variety of learning activities and syllabus contents. This might conclude that curriculum planners should have a good awareness on how the assessment methods and the syllabus content affect the development of learning styles. Though it seems that students favoured more the present curriculum due to the wider variety of learning activities and syllabus contents, it should be noted that they also commented that the new curriculum still put much emphasis on individual paper-work assessments. Curriculum planners in Hong Kong should also review the syllabi and maximize the opportunities for students to further develop their learning styles.

This study might conclude that students' learning experience under different

educational systems can affect their development of learning styles. Studying under an education system which emphasizes group learning and tactile learning can help students develop those learning styles, and examination system can encourage students to develop certain styles as students may adapt their learning styles in order to achieve academic success.

5.3.6 English language proficiency

Much of the recent literature has not examined the relationship between students' language proficiency and learning styles, but most of the language learning literature focused much on the relationship between language proficiency and language learning strategies. The literature review chapter has explained the differences between language strategies and learning styles. Research on language learning strategies usually suggested that students who had higher language proficiency tended to use the high efficacy language learning strategies. Most of the studies did not statistically investigate the correlation between English language proficiency and language learning styles. The qualitative findings of this study indicated that students who had high language proficiency had certain learning styles. The stronger students believed advanced language learners should be able to learn independently. They found that when they attained certain language level, they should be able to discover the language by themselves. The process of discovering language by themselves enabled them to deepen their knowledge and enhance language learning, especially when they learnt EAP, which is more advanced than General English. They also

found that group learning might not be effective with students who had lower language proficiency than them. The lower language proficiency students preferred group learning and dependent learning as they were not confident to learn by their own. They also felt more comfortable to work with students who had higher language proficiency.

The findings seem to be consistent with Peacock's (2001) findings that less proficient learners prefer group learning significantly. In addition, Wong and Nunan's (2011) study also indicates that the more and less effective language learners differ significantly. This research could further confirm their study that more effective learners tend to prefer independent learning in order to have more control of their own learning, when compared to less effective language learners. However, it should be noted that successful language learners might have different learning styles in different learning stages. The learning styles they may have now might not be necessary to be related to their learning success. It is possible that students developed those learning styles when they became advanced learners, but had other learning styles at the early stage of learning. The interview data could only conclude that students who had different language levels might have different preferences towards learning styles.

5.3.7 Educational context and nature of learning tasks (Assessments vs. non-assessments)

There are limited research studies investigating the influence of educational

context on students' learning styles as it is difficult to compare the development of learning styles under different educational contexts. Littlewood (2000, p. 32) found that his Chinese international students who took courses in the UK and USA had difficulties adapting to the "class discussion style" due to their expectations to classroom environment. Based on Littlewood's observation and previous literature, he carried out a survey about students' beliefs towards teachers' roles in class. Interestingly, the results shows that Hong Kong students' actual classroom behaviour (being passive and obedient) did not reflect the roles they would actually like to adopt in class. He concludes that educational contexts students is one of the possible factors influencing students' learning styles and therefore suggests researchers to explore further how educational contexts, besides cultural factors, could influence students' learning styles. Wong (2004) examines whether Asian students' learning styles are culturally based or education contextual based. His study reveals that students are highly adaptive for learning. The educational contexts that they are exposed to could influence their learning styles. This study could further fill the gaps in learning style research by exploring students' beliefs towards the influence of educational system on their learning styles. The interview findings of this study were consistent with Wong (2004) and Littlewood's (2000) arguments that educational contexts could greatly affect students' learning styles.

This study revealed that students' learning style preferences were based on the nature of educational system. In order to achieve academic success, many students tried to fit in the educational system by developing certain learning styles. In short,

students might prefer other learning styles if they were exposed to other educational contexts. The interviews revealed that the examination system, curricula and syllabi might influence students' learning styles.

Students' perception towards assessments

The student participants pointed out that the exam-oriented educational system significantly influenced their learning styles. Most of the student in the study aimed at entering university after graduation as they believed that graduating from university could bring them a brighter future. Biggs (1992) explains that Hong Kong students are highly achievement-oriented might be related to the fierce competition for the limited tertiary places. The high-stakes testing dominates Hong Kong students' education life (Romanowski, 2006). Public examinations have become the motivation for learning and the emphasis of examinations has become a characteristic of the Hong Kong education system (Lee, 1996a). The washback, which refers to the influence of testing on teaching and learning in applied linguistics (Alderson & Wall, 1993), is always greatly emphasized and always investigated in the field of both general education and language education. Several research studies indicate students' ways of learning are based on the types of assessments. For instance, Anderson, Muir, Bateson, Blackmore and Rogers (1990) carried out a survey examining the effects of narrowing down to the topics the tests that were most likely to include, and found that students tended to adopt a memorization approach, instead of critical thinking.

The findings of the present study seemed to confirm those research studies that

students tended to learn according to the assessment formats. In Hong Kong secondary schools, students' academic performance is mainly determined by the high-stakes "one-off" public examinations, though a very small percentage was based on school-based continuous assessments. In community colleges, students' grades are comprised of both continuous assessment and end-of-term examination performance. Different from the secondary school public examinations which were all organized by the government, assessment formats and questions in community colleges were all designed by the teachers who taught the courses. In order to achieve higher grades for admission to universities, many students tried to satisfy their teachers' requirements by relying much on teachers' instructions and explanations. They also expected their teachers to give them clear guidelines on every task. For example, a student in the interview said he expected his teachers to give them lots of exam tips and even feedback for his draft assignments before submission. Another student participant said he was "forced" to become a dependent learner under the exam-oriented and achievement-oriented system. The education system which emphasizes students' grades might influence their ways of learning. The student who said he was "forced" to be dependent showed that he might prefer dependent learning style under the Hong Kong education system, but in fact he might prefer another learning style if he could choose to study under another education system.

The students in this study were required to report their learning style preferences when they studied EAP through questionnaire surveys. The items, "independent learning style" and "dependent learning styles", in the questionnaire seemed to be

contradictory in nature. The results, however, showed that the difference between the mean values of both items was very small (mean values of independent learning style: 17.72 and dependent learning style: 17.23). The interview findings could explain the “contradictory results” that students might prefer dependent learning styles in certain learning situations, but at the same time, they preferred independent learning styles in other learning contexts. The findings also suggested that students’ learning style preferences might change in different educational contexts. It would be interesting to compare students’ learning style preferences under different educational contexts. For instance, do students change their learning style preferences if examination grades are not the main criteria of assessing students’ academic competence? Would students have more flexibility to develop more learning styles if teachers assess students’ learning outcomes by using pass/fail assessments, which are common in postgraduate education? Do students who aim at studying for assessments (extrinsic motivation) differ from those who study for learning (intrinsic motivation)? Nonetheless, there is a lack of learning style research which could fully answer those questions as the assessment system in Hong Kong still aims at selecting the most competent students (those who performed satisfactory in examinations) for further education. It is recommended that future research could explore the relationship between assessment system and learning style preferences. In order to explore the relationship between assessment and learning styles, the researcher furthered the discussion of assessments by interviewing them their beliefs towards group activities.

Group activities and assessments

Hong Kong Chinese learners are characterised as high on collectivism, but low on individualism, have a good sense of belonging to social groups and prefer working together in groups, under the Chinese Confucian philosophical system (Hofstede & Bond, 1984; Hofstede, 1980; Trompanaars, 1993). On the other hand, it has been argued that the Chinese Confucius also emphasized individuality in learning and aimed at cultivating people to be independent and reflective learners (Kennedy, 2002; Lee, 1996). In addition, some studies show that the ways learners working together might be different from the Western's views towards group or cooperative learning. They conclude that Chinese ESL/EFL learners might not prefer the ad hoc small-group work in classroom, but prefer to form study groups outside classroom which are constant for a rather long period of time. The students in this study, however, viewed group work in another way – from the assessment perspective.

The student interviewees did not mention whether the Chinese culture was related to their preference towards individualism or collectivism or not, but explained their preference was based on the nature of the tasks – will the group work be assessed formally? Most of the high achievers in the interviews said they preferred individual work, while the low achievers preferred group work for assessments. Surprisingly, both groups did not have strong opposition to group work activities for classwork. The interesting findings show that students' learning style preference might possibly be related to the nature of tasks and level of students. Many high achievers worried that the weak or lazy group members might lower their grades. In

contrast, the low achievers believed other group members could help them get a better grade.

Time management was a concern that students had. Most of the students found that after-class groupwork might require them to spend extra time on collaboration. Due to the tight learning schedule and different class timetable of group members, many students did not prefer to work in groups outside class. They found that working individually could save the time to contact other group members, meet with them, and ensure the quality of work. However, they could still see the advantages of group learning and believed they could learn from others through groupwork. They, therefore, preferred non-assessed group work which they did not have to spend too much outside class rather than outside-class group assessments. Referring to the questionnaire survey, the two items, “group learning styles” and “individual learning styles” might look contradictory. Nevertheless, the mean values of both items were quite close (group learning style: 16.84, and individual learning style: 16.60). Similar to independent and dependent learning styles, students might prefer group learning style and individual learning style in different tasks and under different situations. Many researchers used the cultural factors to explain Chinese students’ preference to individual and group learning, but neglect the importance of students’ study goals, the nature of tasks, and the possible educational challenges that students are facing. More research can be done in this area in order to examine what factors might influence students’ preference towards group learning and individual learning.

Syllabi and curriculum

All of the student participants in this study commented that the spoon-fed curriculum in Hong Kong emphasized the memorization of knowledge, instead of discovery learning, and the objective of the curriculum was to help students overcome the next assessment hurdle at different stages. The interview findings were consistent with Tang and Biggs (1996) and Wong's (2004) discussion on learning and teaching styles in Asian classrooms, where students were required to memorize knowledge. Tang and Biggs (1996) found that students in Hong Kong were trained to meet examination requirements. The student participants pointed out that the tight learning schedule and packed syllabi both in the Hong Kong Diploma of Secondary Education curriculum and community college curriculum caused them unable to spend extra time on discovering knowledge. They preferred their teachers give them the necessary learning materials for public examinations. In addition, the examination questions usually required candidates to recite knowledge, instead of asking them to investigate and solve problems. The students therefore agreed that their dependent and teacher-modeling learning styles might be developed from the spoon-fed education system which required them to memorize knowledge in limited time.

Tang and Biggs (1996) found that students still could maintain a deep learning orientation in a "highly surface-oriented assessment" (p. 179) when they were developing test-taking strategies due to their cultural dispositions. They explained students in Hong Kong could react to the learning environment specifically and contextually. This might go towards explaining why students had a high preference

for analytic learning (mean value: 17.53), though they preferred both dependent and teacher-modeling learning styles. Despite the fact that the student interviewees did not relate analytic learning to the curriculum, their preference to analytic learning might be derived from the learning process during examination preparation. In the process of examination preparation, students might rely much on teachers' explanations and memorization of knowledge at the beginning stage, and then will eventually move on to develop deep-oriented learning through analytical thinking.

This study, unfortunately, was not specifically planned to explain students' learning styles in different learning stages, especially when they prepared for examinations. If it had, the findings might conclude that students' learning styles were developed from the design of curriculum. The curriculum in Hong Kong is always characterized as tight and packed. Even though teachers plan lots of high-order learning activities to stimulate students' thinking ability, they might sometimes lack the time to implement them in class as they have to cover the syllabus so as to prepare students well for examinations. Students also might not prefer those high-order learning activities as they have to spend much time on finding information than memorizing knowledge. In most community colleges, curriculum planners usually include continuous assessments such as projects and laboratory experiments, in order to help students develop different types of research skills. However, before receiving tertiary education, students still have to go through the process of memorizing knowledge to meet the public examination requirements for further studies. Although previous research studies show that students could develop high-order thinking

through the process of examination preparation, they might still have fewer opportunities to experience deep learning. More importantly, some weak students might get used to the learning styles they developed in secondary school education, and had difficulty adapting to the new learning environment which requires them to employ deep-related strategies. Most of the student interviewees were Year 1 students and they were still adapting to the new learning environment and thus, they did not mention much whether there were any differences in learning styles when compared with secondary and tertiary education.

Based on the above analysis, it can be concluded that the education system students are having and had might influence their learning styles. This study found that Hong Kong students were adaptive in different learning contexts. Their learning styles were mainly based on the learning tasks and goals of education. Further research could be done on how students respond to different educational contexts, such as different educational systems.

5.3.8 Cultural beliefs and values

The interview showed that students' cultural beliefs and values were closely related to their learning styles. The findings were in line with several scholars' studies (De Vita, 2001; Hofstede, 1986; Jordan, 1997; Kennedy, 2002; Littrell, 2007; Oxford & Anderson, 1995; Rossi-Le, 1989; Stebbins, 1995). Nelson (1995) points out that learners were not born to have certain learning styles such as visual and kinaesthetic, they learnt how to learn through family and the society. Those researchers warned

that misunderstanding students' cultural learning styles may cause academic failure. The interview findings showed that students' cultural beliefs towards effective learning and role of teacher might contribute to their development of learning styles.

Role of teachers

Most of the student participants pointed out that the Chinese Confucius culture assumes teachers as the most authoritative source of knowledge. In the Chinese culture, students are expected to obey the teachers and should avoid challenging their wisdom and knowledge. They therefore had a high preference to teacher-modeling style. The findings were consistent with the previous learning styles studies (Chan, 1999; Kennedy, 2002; Murphy, 1987; Pratt, Kelly, & Wong, 1999; Tweed & Lehman, 2002), regarding to Hong Kong and Chinese students' cultural beliefs. Some researchers (Ho & Crookall, 1995; Tsui, 1996) even believe that this might cause obstacles to students' learning in the long term. This cultural belief can be reflected in the ancient Chinese educational philosophy literature. According to the Analects of Confucius / *Lunyu* (論語), a famous Confucian classic in Ancient Chinese, "study" means finding a good teacher and imitating their words and deeds (Rieger, 2006). A good teacher should have good moral values and be familiar with academic ancient work. Teachers also have the responsibility to be a good role model academically and morally. Moreover, obeying and respecting teachers and parents are the basic moral values people should have. In addition, the Confucian code of conduct, *Wu Lun* (五倫), which was also called the *Five Constants* or *Five Cardinal Hierarchical*

Relationships, requires that one should always obey and respect the higher hierarchy. The relationships include: between the government and citizens, between parents and offspring, between husband and wife, between older and younger siblings and friends (父子有親，夫婦有別，君臣有義，長幼有序，朋友有信。). Despite the fact that many people believe Hong Kong people's cultural and national identity is declining and are unaware of the Confucian influence on education, many Confucius beliefs are still widely accepted in the Hong Kong society.

Some non-Chinese educationalists characterized Hong Kong Chinese as quiet and passive students (Bradley & Bradley, 1984; Hu, 2002; Samuelowicz, 1987) and are not willing to express ideas or ask questions in class. Some might even misunderstand that the Chinese students are not willing to learn and think (See Chapter 2). The misunderstanding can sometimes adversely affect teacher-student relationship and the classroom learning environment. The findings of this study can explain why they may not be as active as Western students in class and how important the role of teachers is among Chinese students. In language learning classroom, the Confucian characteristics may be obstacles for students as they believe sitting and listening to their teachers quietly are a kind of respect to their teachers. They may not want to step out from their comfort zone in order to have more interaction with their teachers in class. Teachers should build an affective classroom environment and help them escape from the maze of cultural expectations. In addition, teachers should develop an awareness of cultural influences in order to help students learn effectively.

Ways of acquiring knowledge

The interview findings showed that students had to go through different stages when acquiring knowledge. Some Western teachers found that students in Hong Kong were not analytical learners as they focused much on memorization. The student participants, however, emphasized the importance of analytical learning in EAP class and explained the relationship between analytical learning and memorization of knowledge in English language learning.

Many research studies (Biggs, 1996; Ballard & Clanchy, 1991; Carson, 1992; Connor, 1996; Kumaravadivelu, 2003; Cross & Hitchcock, 2007) investigating Chinese learners' ways of acquiring knowledge found that memorization of knowledge or rote learning played a significant role in the process of learning and that memorization can help deepen the acquisition of knowledge. Biggs (1996) distinguishes rote learning between repetitive learning. He explains that Chinese learners prefer repetitive learning, that is, they memorize in order to further enhance their understanding and lead to higher cognitive outcomes, while rote learning refers to mechanical memorizing without understanding. Marton, Dall'Alba and Tse (1996) explore the relationship between memorization and understanding among Chinese learners and also discovered that students developed understanding through memorization and repeating. The results of this study seem to be consistent with those research studies which suggest Chinese students tend to memorize knowledge for deep learning.

Many students pointed out that the traditional method of learning –

memorization was deeply rooted in their early learning experiences. In language learning classrooms, besides grammar drilling practices, learners were required to memorize vocabulary, grammatical patterns, and even sentence structures. They believed this type of learning was essential at the early stage of language acquisition, when they were not familiar with the language and had limited vocabulary knowledge. This way of learning was also commonly applied in learning their mother tongue, the Chinese language. The results matched with Rao and Sachs' (1999) findings that Hong Kong students believed memorization of knowledge is one of the higher-order metacognitive skills and Lee's (1996b) conclusion that memorization is as important as understanding, reflecting and questioning in the Chinese learning culture.

The relationship between understanding, memorizing, reflecting and questioning was in fact reflected in the Chinese Ancient Confucian classics. The Confucian classic *The Great Learning* (大學) emphasizes the process of investigating knowledge (*gewu* 格物), and many Chinese philosophers explain that learners have to understand and memorize the basic principals before introspection. In addition, a Chinese ancient Confucianist *Zhu Xi* (朱熹) also advocates learning is a gradual sequence in which consists of intensive reading of texts and reflective thinking. The interview findings fully reflected what Hong Kong learners' beliefs towards different stages of learning. Although most of the literature which studies Chinese students' way of learning was outside the field of language learning, it seems it can explain how Hong Kong EAP learners learnt. Most of the student participants agreed that memorization is important at the early stage in English language learning, but they also pointed out that

understanding, thinking and investigating are more important at the higher level of English language learning, especially when they learnt EAP. For example, to understand an academic journal article, they should acquire the basic vocabulary knowledge by memorizing the meaning of words before guessing the meaning of the text and reflecting on it. They generally believed that memorization of basic knowledge was essential for proceeding to advanced learning. Their belief was consistent with the Chinese traditional belief of learning – memorizing knowledge (e.g. vocabulary and grammatical usage) at the early stage, and when they have a deep understanding of a subject, they can proceed to a more advanced stage, that is analyzing and investigating knowledge by using the basic knowledge they acquired. In Western countries memorization of knowledge was equated with rote learning (without understanding). This study could provide evidence to educationalists that they should be aware of cultural differences and understand how a culture affects students' learning style. The findings could also explain several studies' findings (Flynn, 1991; Mullis et al, 2004; OECD, 2007; Sue & Okazaki, 1990) that Chinese learners performed better than their Western counterparts even though they memorized knowledge.

Face

The interviewees mentioned an important Chinese concept – face, which refers to personal esteem and prestige in the traditional Chinese society. Previous educational literature (Bond, 1996; Kennedy, 2002; Nelson, 1995; Tsui, 1996) on Chinese

learners usually related the concept of face with their learning. This research finding of this study confirmed the previous studies that conclude that students avoid making mistakes in front of others by keeping silent in class, but seemed to be inconsistent with the previous studies which argue that Chinese students favoured group learning due to the Chinese culture. Some students said they disfavoured group learning was because they had to avoid making mistakes in front of others. They therefore did not have a strong preference to group learning in class. The interview findings seem to be in contrast with the quantitative data of this study that some students still favoured group learning sometimes. The student interviewees discussed the concept of face mainly in classroom context, but not outside classroom. The major difference between in-class learning and outside class learning is that students may find making mistakes in front of the students who they know well would be less embarrassing than making mistakes in front of the whole class. Although in the interview they said they did not prefer group learning in classroom, it does not mean that they do not prefer group learning in all learning contexts. The student interviewees did not mention much about the relationship between the concept of face and learning styles, but can conclude that the concept of face is related to students' learning styles in different educational contexts.

Self-oriented personality

The student interviewees suggested that Chinese people have a strong self-oriented personality. Western researchers defined “self-oriented” or

“individual-oriented” as personal, individual, independent, and private, and involved personal needs, rights, competitions and strivings (Kashima & Hardie, 2000; Yang, 2004). Several studies (Lu & Yang, 2006; Lu, 2008) on Chinese learners reveal that both collectivism and individualism co-exist in the modern Chinese society due to the great influence of the Western culture. However, those research studies only use statistical data to explain the existence of individualism, but do not give further qualitative data on how Chinese people view individualism. The Hong Kong Chinese students in this study commented that the fierce competitions among students and the stressful environment in Hong Kong made them have a strong feeling towards individualism. They believed that their classmates are potential competitors, especially in community college. Due to the great competition in school learning, they might avoid to share their resources or academic achievements with other students sometimes. In addition, living in the stressful and fast-paced environment in Hong Kong could cause them develop self-oriented personality. They found that they had strong preference towards individual learning style might be because of the general competitive environment in Hong Kong.

5.3.9 Teaching styles of students' former English teachers

In this study, the researcher could not investigate the student participants' English teachers' teaching styles and identify the correlation between students' learning styles and teachers' teaching styles statistically. However, many interviewees commented that their former English teachers' teaching styles might be directly

related to their learning styles. Some literature (Cotazzi, 1990; Ehrman, 1996; Felder, 1995; Jones, 1997; Littlewood, Liu & Yu, 1996; Oxford, Hollaway & Horton-Murillo, 1992; Peacock, 2001; Reid, 1987; Stebbins, 1995; Tuan, 2011) suggested teachers to match their teaching styles with students' learning styles in order to provide students with an affective learning environment and enhance their learning. On the other hand, some researchers (Felder, 1995; Kolb, 1984; Oxford & Lavine, 1992) found that the "matching theory" might not be feasible as those empirical research studies may not be clearly defined. A number of researchers (Kinsella, 1995; Li & Qin, 2006; Littrell, 2006; Melton, 1990; Oxford & Hollaway, 1992; Peacock, 2001; Reid, 1987; Sprenger, 2003; Tuan, 2011; Willing, 1988; Zhou, 2011) pointed out that adopting a multi-style approach can accommodate learners' needs and help extend students' learning styles. Those research studies usually encouraged teachers to adapt their teaching styles in order to suit students' needs (match or intentionally mismatch with students' learning styles).

There is limited research showing that students adapt or develop their learning styles which may eventually match with teachers' teaching styles. Yu's (2012) longitudinal study investigating the relationship between teaching styles and learning styles finds that teachers' teaching styles and learning styles influence the instructional methods and the design of learning activities. The learning tasks usually require learners to employ certain learning styles. Students then gradually change their learning styles in order to adapt to the learning environment. This study can further confirm Yu's study that students eventually match their learning styles with

teaching styles. Most of the previous literature assumes that teachers' teaching styles should be more flexible than students' learning styles and teachers should adapt their teaching styles by matching or mismatching students' learning styles. The findings of this study may suggest that students' learning styles have a high flexibility and can be changed and influenced by teaching styles, besides demographic factors such as students' gender and culture. It leads to the question of whether it is necessary to match or mismatch learning styles with teaching styles deliberately in order to enhance language learning. In addition, it may be interesting to find out to what extent learning styles can be changed and influenced by teaching styles. For example, if there is a significant difference between learning styles and teaching styles, can the learning styles be eventually be matched with teaching styles in a period of time? This study, unfortunately, cannot measure statistically to what extent the difference between learning styles and teaching styles is in order to have an unintentional match between them in classroom learning. The findings may be useful for style researchers to investigate the relationship between learning styles and teaching styles, and understand how to enhance classroom experiences and maximize academic outcomes.

5.3.10 Summary

This study found that the EAP students in Hong Kong community colleges had multiple language learning styles. The quantitative and qualitative results of this study indicated that several factors were significantly related to students' language learning styles. Some research studies conclude that certain cultural groups of students may

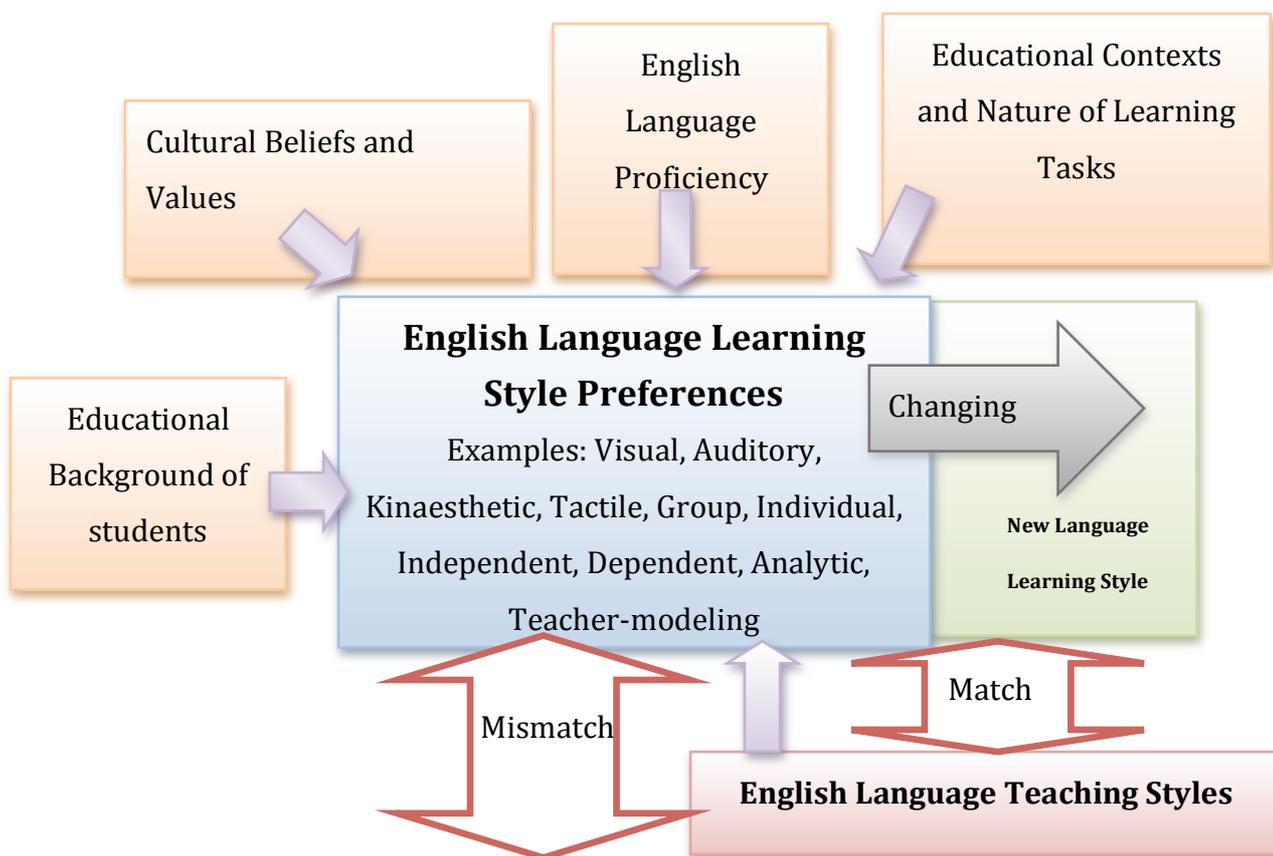
have certain language learning style preferences. For example, Chinese students generally favour collectivism and should have a high preference towards group learning. The results of this study, however, show that the development of learning styles is complex and flexible. Although this study focused on Hong Kong community college students' learning styles only, it can be seen that different students from the same cultural background and study under the same education system might have different language learning style preferences.

The research findings seem to be consistent with the previous literature on the nature of learning styles (Curry, 1953, 1957; Dunn, 1990; Ehrman & Oxford, 1990; Gagne, 1985; Honey & Mumford, 1984; Kinsella & Sherak, 1998; Kolb & Kolb, 2005; Reichmann & Grasha, 1974; Sternberg, 1994). Learning styles are flexible and can be influenced by both internal and external factors. The internal factors identified in the interviews include educational background, cultural beliefs and values, and English language proficiency of students. The external factors include teaching styles, educational contexts and nature of learning tasks.

The previous research shows that teachers should adopt a learning-style approach which should either match or mismatch their teaching styles deliberately in order to enhance students' language learning. The results of this study show that students' learning styles have a high flexibility that they may eventually match with teaching styles when students have to meet the academic requirements and complete the required tasks successfully. The findings are consistent with several previous studies on the nature of learning styles (Cassidy, 2004; Hadfield, 2006; Holec, 1987;

Little & Singleton, 1990). In short, even though there is a mismatch between learning styles and teaching styles, students may unconsciously adjust their learning styles and match with teachers' teaching styles. After a period of time, students may develop learning styles which are similar to their teachers' teaching styles. Figure 5.1 gives a summary of the quantitative and qualitative findings of the research regarding to students' learning styles.

Figure 5.1. Different Factors Influencing EAP Students' Learning Style Preferences



5.4 English language teaching styles of Hong Kong community college teachers in EAP contexts

This researcher tried to distribute a teaching style questionnaire which was similar to students' questionnaire to EAP teachers. When discussed the questionnaire items with the teachers, it was found that most of the them had difficulty identifying their teaching styles through the questionnaire. Teaching style is instructor's natural, habitual and preferred way of presenting new information and teaching language skills in classroom. Many teachers reflected that they might have different teaching styles in different EAP classrooms. For example, a teacher said she might prefer to use independent teaching style in classes which have higher English language proficiency, but might have other teaching styles with classes which have lower English language proficiency. In addition, another teacher said his teaching styles were based on the learning culture of students and colleges. He might have different teaching styles in different classrooms. They therefore questioned the reliability and validity of teaching style questionnaires and argued that they might have different questionnaire results for different classes.

There is a range of teaching style research studies (for example, Cook, 2008; Opendakker & Van Damme, 2006; Leung, Lue, & Lee, 2003; Peacock, 2001; Salem, 2001) using questionnaires as the main research instrument and some researchers have developed some questionnaires for teachers and other researchers to understand their teaching styles. Those research studies usually concluded that teachers from different educational background preferred different teaching styles. For example, Peacock's (2002) study shows that ethnic Chinese teachers preferred auditory teaching style, but it was negative for Western teachers. Many teachers also favoured

kinaesthetic and group teaching styles, but strongly disfavoured tactile and individual styles. However, they rarely compared the same teacher's teaching styles in different classrooms. In short, there is a dearth of research that studies whether teachers would change their teaching styles in different educational contexts. For example, Peacock's (2002) study did not investigate whether teachers would have different teaching styles when they teach in different classrooms or even institutions. They might prefer to use tactile teaching style for students who need or prefer lots of hands-on experience. Although the present study could not show the quantitative results of Hong Kong EAP community college teachers' teaching styles, the comments from the teacher participants might be useful for teaching style researchers to reflect on the reliability and validity of teaching style questionnaires.

This study did not aim at evaluating the validity and reliability of the previous teaching style research statistically, but could conclude that the previous teaching style research might not be able to identify teachers' teaching styles accurately based on the questionnaire surveys. It could also further confirm Akbarzadeh and Fatemipour's (2014) study that teachers could not identify their teaching style preferences accurately by using questionnaire surveys. They observed that there was a discrepancy between their actual teaching and their questionnaire responses. However they did not explain the reason for the discrepancy. The interview results of the study might be able to explain why they could not respond to the teaching style questionnaire accurately.

Future style researchers should consider the flexibility of teaching styles and

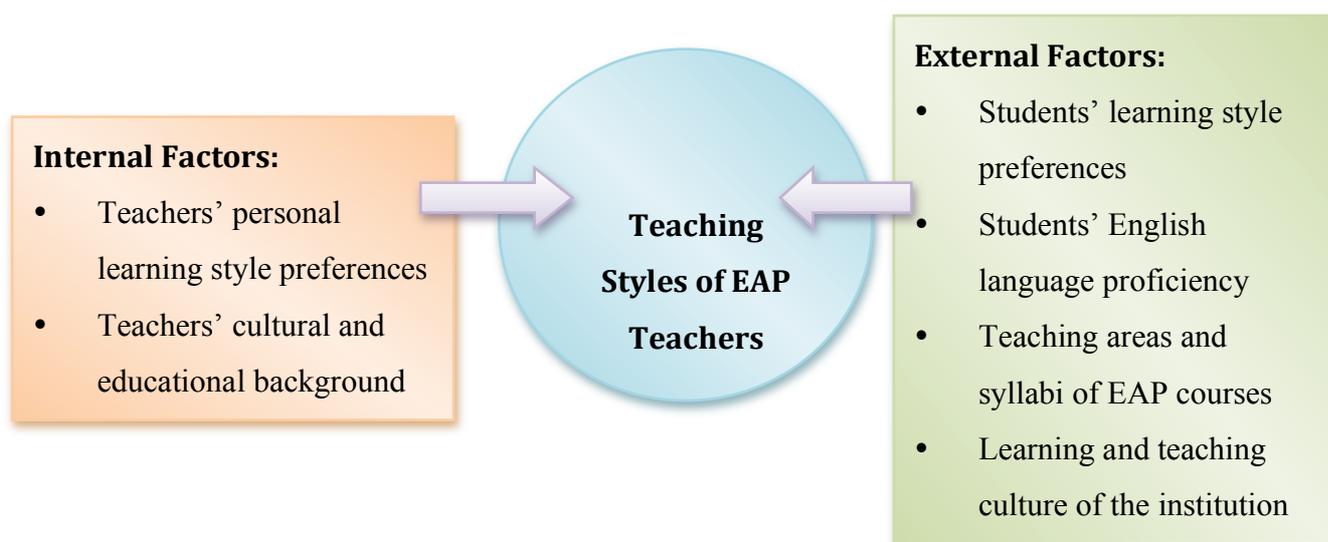
further evaluate the validity and reliability of questionnaire surveys. After discussing the issue of research instruments, all research participants agreed that conducting interviews the most suitable way to explore teachers' teaching styles more accurately as interviews are more flexible, which suits the flexible nature of teaching styles. In addition, it was found that teachers' teaching styles were complex and could change in different educational contexts. Teaching style researchers should find other ways such as using case studies and longitudinal studies, to investigate teaching styles. Additionally, researchers should further investigate the reliability and validity of different teaching style research instruments. The researcher, therefore, conducted several interviews to explore teachers' teaching styles in order to have a better understanding of Hong Kong EAP teachers' teaching styles.

5.5 Factors influencing Hong Kong community college teachers' language teaching styles in EAP contexts

The factors reported by the teacher participants could be categorized into internal and external. Internal factors refer to those that the individual teacher brings with him/her to the particular teaching situation. These include: teachers' personal learning style preferences, and their cultural and educational background. External factors refer to the characteristics of the particular language learning situation. The possible factors include: students' learning style preferences, students' English language proficiency, teaching areas and syllabi of EAP courses, and learning and teaching

culture of the institution. Figure 5.2 summarizes the relationship between teachers' teaching styles and different factors.

Figure 5.2: Internal and External Factors Influencing EAP Teachers' Teaching Styles



Most of the teaching style literature focuses on the internal factors and commonly believed that “teachers teach the way they learnt” (Dunn & Dunn, 1979, p. 239). In short, teachers' learning styles are aligned with their teaching styles. In the previous section on learning styles preferences, it was found that a learner's cultural and educational background might be related to learning styles. That means teachers' cultural and educational background, and their own learning style preferences are related to their teaching styles. Therefore, most of the present literature focuses on different internal factors such as gender, cultural and educational background influence teachers' teaching styles. This study, however, found that teachers' teaching styles were flexible and could also be influenced by external factors which might vary in different EAP classrooms. Their teaching styles might change instantly when they

had to switch to another classroom where students had different learning styles and English language proficiency, and study different language areas and syllabi in different institutions. Therefore, this study suggests that teachers might have different sets of teaching style preferences in different classrooms and may switch from one set to another based on different external factors. It might be difficult to identify exactly what teaching style preferences teachers have. The following section will explore the relationship between teaching styles and different factors.

5.5.1 Teachers' personal learning style preferences

The interview findings of this study revealed that teachers' personal learning style preferences developed from previous learning experiences influenced their beliefs towards teaching. The data supported Dunn and Dunn's (1979) findings that "teachers teach the way they learnt" and confirmed several studies (Avery, 1985; Gregore, 1979; Kasim, 2012; Pajares, 1992; Witkin, 1973) related to teachers' learning experiences and their teaching styles. They generally believed that their learning style preferences which led to their academic success and hence would expect students to develop those learning styles by designing different activities. Another reason for teachers to develop teaching styles according to their personal learning styles might be they feel more comfortable to teach with the styles which they prefer and are familiar with. The styles which they prefer were established by the time they received education in different levels such as in secondary school and university. In addition, their learning styles were formed in accordance to their

personal cultural and educational background, which was similar to what have been discussed in the earlier parts of this chapter.

The teacher interviewees in this study did not explain how they developed their learning styles in depth as the interview questions focused mainly on their teaching styles. Therefore, they only explained that their cultural and educational background contributed to the formation of their learning styles, which in turn became their own teaching styles. The next part will discuss how teachers' educational and cultural background related to their teaching styles.

5.5.2 Teachers' cultural and educational backgrounds

This study included teacher participants on this study who were raised and educated in different regions, and countries such as Hong Kong, the mainland China, Taiwan, United Kingdom, United States, and Australia. Most of the participants had experience of receiving education in different countries. For example, a participant received primary and secondary education in Hong Kong, but went to university in the U.S. It might be difficult to differentiate culture and educational background as they are related. All participants agreed that the learning cultures vary in different regions and countries. As a result, they developed their own teaching styles based on the previous educational experience they had in different places. This study could not conclude which countries such as the Western or the Asian countries would contribute to which teaching styles due to the limited number of teacher participants and their complex cultural and educational background. However, this study could show that

cultural and educational background is closely related to their teaching styles.

The findings of this study were consistent with Peacock (2001) and Ryans (1970) that teachers from different ethnic and educational background might have different teaching styles. For example, a Hong Kong Chinese teacher who received education in Hong Kong and Western countries pointed out that the Western culture may focus more on critical thinking and expect students to take an active role in class, while the classroom in the Chinese culture may be more teacher-centred and have less interaction in class. Being educated under different cultures may influence teachers' teaching styles. This study, unfortunately, could not find out the Hong Kong Chinese culture of English language teaching as many research participants did not receive higher education in Hong Kong, or in Asia. Although some teachers were educated in Hong Kong, they were usually taught by the Western teachers in higher education, as most of them majored in English literature or English language education. However, they could still point out the differences between the teaching styles of the Chinese culture and the Western culture. They all agreed that cultural and educational background could definitely influence teachers' teaching styles. The results can conclude that understanding where teachers received education could help us understand what teaching styles they might have. Another important implication that can be drawn from our findings is that teacher trainers play an essential role in the development of teachers' teaching styles and should therefore pay attention to their own teaching styles.

5.5.3 Students' learning style preferences

In this research, many teachers found that they taught according to the learning styles of students. Previous teaching style research suggests that teachers should understand students' learning style preferences and match students' learning styles deliberately in order to enhance language learning. Students might be plagued by anxiety if mismatches occur. In addition, some research findings advised teachers to help students develop more learning styles by mismatching their learning styles deliberately. Those teaching implications suggested by the style researchers seem to be able to reflect the reality in classroom learning. Teachers tend to reduce students' learning anxiety by changing their teaching styles in order to match with students' learning styles and help students extend their learning styles by mismatching deliberately.

The findings from this study suggested that many teachers changed their teaching styles when they found that their students had problems adapting to their teaching styles. Their teaching styles might eventually be similar to students' learning styles after a period of time. In addition, when teachers found mismatch between teaching styles and learning styles existed, they would narrow the difference and help students extend their learning styles by designing activities which would gradually help them develop other learning styles.

The results might imply that teachers might have different teaching styles when they teach students who have different learning styles. Hence, their teaching styles could vary in different classrooms. In order to narrow the gap between teaching styles

and learning styles, teachers would change their teaching styles, and at the same time they might help students change their learning styles.

Most of the recent literature offers suggestions to teachers based on the learning style research style research. However, there appears to be few studies show how teaching styles change in response to different learning styles. The findings of this study indicate future teaching style research should focus more on the flexibility of teachers' teaching styles in different classroom settings and its relations to students' language learning.

5.5.4 Students' English language proficiency

This study revealed that students' English language proficiency was related to teachers' teaching styles. Teachers might tend to use certain teaching styles for different levels of students in order to enhance students' language learning. For example, the teachers in this study pointed out that they might prefer teacher-modeling for lower language proficiency students, but preferred less for advanced students. There is a lack of research which investigates the relationship between students' language proficiency and teaching style preferences. This research might indicate that teachers' teaching style preferences vary in different levels of language classrooms.

In addition, for advanced students, teachers might allow greater differences between teaching styles and learning styles as they believed stronger students should be able to adapt to new learning environment and accept unfamiliar teaching styles

easier than lower ability students. Therefore, many teachers pointed out that they had more types of teaching style preferences for higher ability classes than less advanced classes. Most of the current literature focused much on whether a mismatch/match between teaching styles and learning styles would enhance students' language learning, but they did not consider the flexible nature of teaching styles in classroom learning. Future research could further explore what teaching style preferences teachers have for different levels of students and how teachers vary their teaching styles in different classrooms.

5.5.5 Teaching areas, syllabi and course materials of EAP courses

The teacher interviewees reported that they preferred different teaching styles when they taught different language areas of EAP. Most of the teaching style research usually investigated teachers' teaching styles based on their subject areas, such as English language and Physical Education. Those studies usually disregard the fact that there are different learning areas in a particular subject. For example, teachers may teach General English and EAP differently. EAP involves a mixture of language skills such as academic reading skills, note-taking skills and academic reading skills, whereas General English focuses on the use of English for general purposes. Most of the tertiary institutions require students to take different levels of EAP courses in order to prepare them well for their academic studies. Some EAP courses may focus on certain language skills only and students are required to take those courses in different semesters. Table 5.1 shows the English curriculum of one of the community

colleges involved in this study.

Table 5.1. An Example of EAP Curriculum and Syllabi

Courses	Skills
English for Effective Communication	Academic reading, writing, and presentation skills
English for Public Speaking	Academic seminar and presentation skills
English for Academic Purposes	Research writing

The interviewees stated that they had different teaching style preferences in courses which had different intended learning outcomes. The syllabi of different courses were different that students were required to meeting different learning objectives. For example, the academic speaking courses might focus more on auditory learning and had fewer opportunities to have visual learning when compared to academic writing courses. The advanced EAP courses might encourage learners to be independent learners, while the elementary EAP courses might involve more teacher-modeling teaching style. Hence, teachers might vary their teaching styles according to the syllabi and course requirements.

In addition, how teachers teach their students can sometimes be restricted by the teaching materials and curriculum set by the college. As teachers have to help students to fulfil the assessment requirements of the courses, they may have to follow the materials closely, including the activities set by the course coordinators. As a result, they may have to develop teaching styles according to the materials give by the

college and the curriculum set by the college. The finding was consistent with Crookes's (1997) arguments that teachers sometimes have little control of the course materials and how they teach is highly related to the course materials, curriculum and school structures.

It might be difficult to determine which teaching styles EAP teachers preferred due to the large variety of EAP courses in terms of material design and teaching areas. The previous research might conclude that English teachers from certain countries might prefer some teaching styles. It is questionable to conclude whether the teachers preferred certain teaching styles because of their culture.

5.5.6 Learning and teaching culture of the institution

This study shows that teachers may vary their teaching styles with reference to the learning and teaching culture of the institution. It appears there is limited research that has investigated how the learning and teaching culture of an institution relates to teachers' teaching styles as it is difficult to compare how teachers change their teaching styles in different institutions. Most of the teacher interviewees of this study have extensive teaching experience in tertiary education. Some of them are teaching on part-time basis at different colleges. The teachers found that they might change or further develop their teaching styles when they taught at different colleges as they had to ensure that their teaching styles could match with the teaching and learning culture of the college. For example, some colleges might promote problem-based learning in all courses and encourage students to be independent learners. Teachers teaching at

those colleges may have higher preference to independent and analytical teaching styles as it is easier for students to accept those teaching styles in language learning after they get used to that in other courses. However, when they have to switch to another institution in which most teachers have teacher-modeling teaching styles, they may tend to adjust their teaching styles as they may worry that students are anxious to the teaching styles which they may not be familiar with. The interview results may show that when teachers have more exposure to different teaching cultures, they may tend to change their teaching styles, or some teachers may even further develop their teaching styles. Most of the research studies focus on the individual teachers' teaching styles, but there is no research that examines how the teaching culture of an institution could affect teachers' teaching styles. The results imply that curriculum planners and school policy makers in an institution play important roles in the development of teachers' teaching styles which is directly related to students' language learning.

5.5.7 Summary

The qualitative data collected from teachers suggested that teaching styles are not stable and might vary in different educational situations. Both internal and external factors could influence teachers' development of teaching styles. Internal factors include teachers' personal learning style preferences, and their cultural and educational background. Teachers developed their teaching styles based on their personal learning experience and cultural background. External factors include students' learning style preferences, students' English language proficiency, teaching

areas and syllabi of EAP courses, and learning and teaching culture of the institution. The external factors can cause the teachers to extend or change their teaching styles. The results of this study might suggest that teachers may have various sets of teaching styles in different classrooms and institutions.

5.6 Relationship between learning styles and teaching styles in Hong Kong EAP classrooms at community college level

Student interviewees in this study found that their former teachers' teaching styles can influence their learning styles and their learning styles may eventually become similar to their teachers' teaching styles. The researcher then further explore the relationship between learning styles and teaching styles by asking them their perception towards the relationship between learning styles and teaching styles regarding to their English language learning.

The research finding was consistent with the previous learning style studies (Carbo & Hodges, 1988; Hyland, 1993; Kinsella, 1995; Nelson, 1995; Reid, 1987; Tudor, 1996) that students preferred teachers whose teaching styles are similar to their learning styles. They were more motivated to learn in an environment in which they were familiar with. However, this research still could not provide evidence and conclude whether matching learning styles and teaching styles could enhance students' English language learning outcomes.

Another finding which was not identified by previous literature was the student

interviewees found that their English language proficiency and the length of time learning English with a teacher were related to their preference towards the match or mismatch of learning styles and teaching styles. Students who had high English language proficiency might be more flexible to accept the style differences when compared with those who had lower English language proficiency. The reason was the low English language proficiency students had difficulty adapting to the new teaching styles which they might not be familiar with and facing with the language barrier at the same time. On the other hand, the stronger students might be easier to adapt to the new learning environment as they had less difficulty understanding English. Another factor influencing students' flexibility of accepting new teaching styles is the length of time spending with their English teacher. All of the student participants in this study were community college students. They usually had to spend 36 – 43 hours per semester (3 – 4 months) with each English lecturer. After every semester, students would be rearranged to different classes and taught by another lecturer. Some students said they sometimes had difficulty adapting to different learning environment in every 3 or 4 months. When they started to get used to a lecturer's teaching styles, they had to switch to another class and taught by another teacher who had new teaching styles. The limited time spending with their English teacher might reduce the flexibility for them to accept the differences of learning styles and teaching styles. This might show that students might have more flexibility to accept the mismatch of learning styles and teaching styles when they could learn with a teacher in a longer period of time.

In spite of the fact that this study could not find out whether a deliberate match or mismatch between learning styles and teaching styles could enhance students' language learning, it was found that students might be able to change their learning styles and adapt to the new learning environment with reference to their English language proficiency and time spending with their teachers. It also further confirmed that students generally preferred teachers who had similar styles as them. There is still a lack of research measuring the flexibility of students' learning style preferences and investigating factors relating to their acceptance of new teaching styles.

The teacher interviewees agreed that a good match between learning styles and teaching styles could provide students with an effective language learning environment and improve students' learning motivation. They also believed that a mismatch between learning styles and teaching styles could help students develop more learning styles and encourage them to develop problem-solving skills, but they suggested that teachers should guide students carefully in order to help them face the unfamiliar learning environment. It seems that they also agreed with the "mismatching" theorists' beliefs towards introducing unfamiliar teaching styles to students (Dweck, 2007; Felder, 1993, 1995; Hunt, 1971; Joyce, Weil & Calhoun, 2015; Kolb, 1984; Rogers, 1982). Some participants emphasized that teachers should provide students with ample support when introducing new teaching styles. This further confirms Vygotsky's (1978) zone of proximal development (ZPD) theory that conceptual understanding and processes should be just above learners' zone of comfort and teachers should scaffold the learning process in order to maximize

academic learning outcomes. Their opinions towards matching/mismatching teaching styles and learning styles could confirm the general beliefs stated by the learning style literature. This might suggest that both teachers and students should be flexible and stretch their styles in order to achieve effective language learning.

Integration of qualitative and quantitative findings from students and teachers regarding to the relationship between learning styles and teaching styles

This study revealed that both teaching styles and learning styles are flexible and can be influenced by both internal and external factors. This finding is consistent with the previous learning style and teaching style literature. This study also found that there is a close relationship between teaching styles and learning styles. Teachers tended to adjust or develop their teaching styles in order to motivate students and maximize learning outcomes. Students in this study reported that their learning styles were influenced by their teachers' teaching styles and would eventually become similar to their teachers' teaching styles after a period of time. When integrating the interview findings from teachers and students, it can be seen that learning styles and teaching styles are changing simultaneously and could be influenced by each other. It is possible that the difference between teaching styles and learning styles might reduce and become similar after a period of time.

This study also revealed both students' and teachers' views towards the "matching theory". It was found that most of the learners preferred their teachers'

teaching styles match with their own learning styles and mismatching may cause demotivation. The findings also showed that higher language proficiency students were more confident to accept unfamiliar teaching styles. In addition, most of the students found that the length of time spending with their teachers was related to their views about matching/mismatching. Many students pointed out that they preferred teachers could match with their learning styles due to the limited time spent with their teachers in tertiary institutions. When the gap between teaching styles and learning styles is too large, students may have to spend more time to extend their learning styles. This study might indicate that English language proficiency and the time factor are related to their flexibility of accepting unfamiliar teaching styles and the development of learning styles.

The teacher interviewees agreed that a good match with learning styles could build an affective learning environment, but a mismatch between learning styles and teaching styles can benefit students' personal development and help extend students' learning styles. They therefore would provide students with a supportive learning environment in order to help them step out of the comfort zone and accept the unfamiliar teaching styles. It showed that most of the teacher interviewees were trying to strike a balance between the two theories by maximizing students' learning opportunities in an anxiety-free learning environment.

It is possible that learning styles and teaching style may not be congruent at the beginning. But both teaching styles and learning styles may change when they interact with different factors such as the cultural environment and education experiences. At

the same time, learning styles and teaching styles may change when they interact with each other. However, it should be noted that the flexibility of learning styles is based on a number of factors. In EAP classrooms, these may include learners' English language proficiency and the time factor. For instance, learners who have higher language proficiency might be more willing to develop their learning styles and accept unfamiliar teaching styles. In contrast, the weaker students may have to spend extra effort on overcoming both the language barrier and the unfamiliar teaching styles. The less proficient learners who have low self-esteem may not want to take the risk to further develop or change their learning styles due to the greater challenge they have when compared with the proficient learners. Similarly, some Hong Kong students may prefer teacher-centred teaching styles and feel anxious when they are given choices designing and implementing their own learning due to their prior learning experiences. It is sometimes difficult for learners to accept unfamiliar teaching styles and further develop their learning styles when they have been educated under a particular teaching style for a long period of time. Those students may have to take longer time to accept other teaching styles. When they are given more time and have built a good rapport with the teachers, they can accept the unfamiliar teaching styles.

In addition, teachers may change their teaching styles when they find that some of their styles are not effective in language classrooms, especially when their students have difficulty accepting their teaching styles. Their teaching styles may change when they have more teaching experiences. Certainly, many factors combine together to

contribute towards different teaching styles. When both learners and teachers change their learning styles and teaching styles, it is possible that the learning styles and teaching styles might eventually become similar. After a certain period of time, both learners and teachers in a particular classroom, have the potential to develop new sets of learning styles and teaching styles which are more in congruence.

Matching teaching styles and learning may limit learning opportunities, but mismatching can cause anxiety. It seems that both sides have drawbacks that language teachers want to avoid. It is proposed that the framework suggested in this chapter would be useful to address the matching/mismatching dilemma advocated by style theorists. It was found that many teachers are willing to change their teaching styles in order to cater for students' needs. However, some students, especially those less prepared students, might have difficulty accepting unfamiliar teaching styles. This shows that researchers should focus more on increasing the flexibility of learning styles. Most of the style literature explores the factors which make ones' learning styles change, but very few explore why some learners can develop their learning styles quickly when they are exposed to different factors and more willing to accept unfamiliar teaching styles, while some may take longer time. There are many studies investigating what factors influencing learning styles, but very few explore how learners face the unfamiliar teaching styles. To address the dilemma, language teachers should find sensible ways to maximise learners' opportunities to develop learning styles without causing anxiety by minimizing the factors which reduce the flexibility of learning styles in language classrooms. When learners have more

flexibility to accept new teaching styles, then they can further develop their learning styles.

5.7 Chapter summary

This chapter has discussed the qualitative and quantitative findings with reference to the previous research on learning styles and teaching styles. It first explains the learning styles of EAP students at community college level in Hong Kong and analyses the factors influencing their styles with reference to the educational contexts in Hong Kong and previous style literature. It also explores students' perceptions towards the relationship between learning styles and teaching styles in EAP classrooms. It then examines teachers' teaching styles and the related factors, and their perceptions towards both styles. Based on the discussion of findings, this chapter proposes an integration framework to explain the relationship between learning styles and teaching styles in EAP classrooms.

It is clear that teaching styles and learning styles are influenced by both internal and external factors which make them flexible and subject to change based on a range of phenomena, chief of which are academic orientation and experiences teachers bring with them into the learning environment (Macfarlane, 2007). In addition, teaching styles and learning styles can be influenced reciprocally. When learners and teachers interact with each other for a period of time, their styles may become more congruent. However, learners' ability to accept new teaching styles and their

flexibility of learning styles depend on their English language proficiency and the length of time interacting with their teachers. The framework suggests that teachers should minimize the unfavourable factors which would adversely affect their ability of accepting unfamiliar teaching styles and the development of new learning styles.

The final chapter will provide educational implications based on the findings and the new framework proposed in this thesis and explain the potential contributions of the study, reflect on the limitations and provide recommendations for future research.

Chapter 6: Conclusion

6.1 Overview

Based on the discussion of findings in the previous chapter, this chapter aims at providing educational implications on teaching and learning in EAP classrooms. It also will espouse the potential contributions that the study can offer this field of education. Limitations of the research will also be outlined. Finally, recommendations for future research on learning styles and teaching styles will be proposed.

6.2 Educational implications

Understanding learners' flexibility for developing learning styles as well as accepting unfamiliar teaching styles.

When investigating the relationship between learning styles and teaching styles, it was found that that flexibility of learning styles and the ability to accept unfamiliar teaching styles differ among English language learners. This research shows that learners who have higher English language proficiency tend to have higher flexibility for accepting unfamiliar teaching styles. In contrast, learners who have lower English language proficiency may have difficulty adapting to new teaching styles as they have to spend more effort confronting both the language barrier and the new teaching styles. In addition, when learners are given more time to learn with their teachers, they may

have higher chance to accept unfamiliar teaching styles. This indicates that teachers should first get to know students' learning ability and their flexibility for accepting new pedagogical constructs.

Although the student participants in this study primarily reflect that English language proficiency and length of time learning with their teachers are directly related to their acceptability of new teaching styles, this study also highlights the importance of the influence of educational and cultural backgrounds on students' development of learning styles. Students who have been educated under a particular culture and education system for a long period of time may be attuned to the development of particular sets of learning styles. They may experience anxiety if teachers do not provide enough support when mismatches occur, especially when they have been learning through familiar teaching styles for a long period of time. For instance, many Hong Kong students interviewed in this study were educated in a learning culture which regards teachers as the authority on knowledge. When learners are given opportunities to direct their own learning and design their learning tasks, they may feel uncomfortable as this way of learning and it may clash with their own cultural beliefs in terms of education provision. This does not mean that learners are not able to accept new teaching styles. It is clear that when they are given ample time and support, students can adapt their learning styles and accept unfamiliar teaching styles. On the other hand, if teachers do not have a good understanding of learners' cultural and educational backgrounds, English language proficiency, and other factors related to the development of learning styles, they may not be able to evaluate

students' ability to accept new teaching styles, and have the flexibility for developing learning styles. Consequently, teachers should be aware of what and how different factors relate to students' development of learning styles, as well as evaluating students' abilities for accepting new teaching styles when they find that there is a mismatch between learning styles and teaching styles.

Promoting intellectual risk-taking by setting a supportive learning environment

This study shows that some students have less flexibility for accepting new teaching styles. The reasons for this might be that they may not be confident of taking on new challenges due to their poor language proficiency or the nature of the learning tasks. For example, many students prefer to use their familiar approaches to learning when they have assessments. Many community college students are afraid of taking intellectual risks in assessments which may affect their promotion opportunities to university. In addition, weaker students, especially those who experience low-esteem, may feel anxious when encountering new challenges due to the demanding language barrier they face. When teachers introduce new teaching styles, students who are afraid of risk-taking may feel uncomfortable and this may affect their English language learning opportunities.

By the vary nature, community college education aims at giving students opportunities to further their studies or career development. Assessments are benchmarks for stakeholders (e.g. university education providers and employers) to evaluate students' English language ability under the academic quality assurance

system. To encourage students to take risks while implementing assessments, one-off examinations or assessments should be avoided. Although continuous assessments are implemented in most of the community colleges in Hong Kong, students are in awe of making mistakes in these assessment tasks as their performances (grades) are closely related to their university promotion opportunities.

In order to encourage intellectual risk-taking in learning, teachers should give constructive feedback regularly to students while students are preparing for their assignments. For example, in academic writing courses, teachers can encourage students to submit their academic writing drafts in different stages and give feedback to them directly and/or include peer evaluation activities. When students are given this type of regular feedback without considering their examination grades, they may be more willing to step out their comfort zone and develop a habit of risk-taking in academic tasks. Furthermore, students should be given opportunities to try different approaches of learning under a stress-free environment. One example is that many students are not confident with discovering English language patterns as they may not have experienced this type of learning before. Students may feel stressful if this type of learning is included in an assessment (e.g. class presentations). If teachers provide enough support by demonstrating examples and giving them some achievable practice in class, they may start to develop interest in analytical learning and be more confident with this type of learning.

In addition, students should be given enough time to adapt to the new learning environment. As suggested by the interview findings, students may be more willing to

accept new styles when they are given enough time. Certainly, some students may take more time to accept unfamiliar teaching styles than others due to a range of factors, including English language proficiency and cultural background. When students understand that mistakes are not frowned upon, are encouraged firmly but fairly, and are given time to work through the assigned tasks, they may then start to develop the ability of risk-taking and be more willing to accept new learning and teaching styles. Being a successful intellectual risk-taker is essential for maximizing opportunities to language development.

Additionally, when teachers find that mismatches occur, they should minimize students' possible anxiety by building good rapport with students. Only when students are motivated, can they be able to overcome any academic challenges they face. This is well supported by the monitor model of second language acquisition developed by Krashen (1981). According to the affective filter hypothesis in the model, low motivation, low self-esteem and high anxiety can raise the affective filter which prevents learners from receiving comprehensible input for language acquisition. Positive affect is necessary for any stage of language acquisition. If students are motivated by their teachers through careful instructional planning and positive reinforcements, the impacts of those factors may be reduced. It is also essential in culturally diverse classrooms where cultural clashes can easily exist. Therefore, when there is a big difference between learning styles and teaching styles, teachers should first reduce this difference by adjusting their teaching styles in order to minimize the anxiety among students. Based on students' flexibility of accepting unfamiliar

teaching styles, teachers can then start to introduce new teaching styles gradually.

Designing a balanced English language curriculum and assessment system

Many students commented that the exam-oriented education system in Hong Kong has a great influence on the development of learning styles. Although education reform in Hong Kong has changed the assessment format and introduced school-based assessments / continuous assessments, the education system still places much emphasis on final one-off examinations which constitute most of the marks in the overall subject grades in public examinations.

The assessment format of English Language in the Hong Kong Diploma of Secondary Education Examination as an example. The school-based assessments / continuous assessments count for merely 15%, while the one-off final public examination counts for 85%. Both teachers and students may therefore spend more time on the preparation of the one-off public examinations. The one-off public examination focuses much on individual written paperwork and only 10% of the assessments are related to speaking and group work activities. Undoubtedly, being educated under this kind of system, English language learning style development may tend to be restricted by the limited variety of learning tasks. When they further their studies at tertiary institutions and study EAP, they may still retain the English language learning styles they developed in secondary school education. Although continuous assessments are widely adopted in tertiary education, it should be taken into account that students might still prefer to use the learning approaches they

experienced in secondary schools. It would seem that the English language curriculum in secondary schools should be further improved as this might limit students' development of learning styles, as well as their English language development. Moreover, tertiary institutions should also design English language syllabi and curricula which promote a balanced development of learning styles. Curriculum designers should focus more on continuous assessments which include a wide variety of learning tasks.

For example, in EAP academic writing courses, teachers can divide writing assessments into different stages: (1) drafting, (2) proposal presentations, (3) peer evaluation on the drafts, and (4) writing up the final drafts. In addition, teachers can provide continuous feedback on the assessments. Compared with the traditional one-off assessments, the wide variety of continuous assessments suggested gives students more time to develop more learning styles in a less stressful environment. In the example above, stages one and four involve individual written work, while stages 2 and 3 involve oral and group work. In all stages, students can have the opportunity to develop different styles such as analytical and independent learning. In contrast, if students are only required to submit a final essay, this may limit students' opportunities to develop other learning styles. Assessments are not only useful tools to evaluate students' performance, but also can motivate students to enhance their English language development.

Implementing small-class teaching

This study shows that students' English language learning styles vary due to their differences in educational backgrounds, English language proficiency and other factors. In Hong Kong community college classrooms, class sizes range from 15 to 35. Some colleges arrange students from different disciplines and programmes to have English classes together. In Hong Kong, small-class teaching has been introduced in some primary schools and secondary schools. However, there is a dearth of research investigating the relationship between class size and academic outcomes at tertiary level in Hong Kong. Compared with English language classes at university level, the differences in English language proficiency between students in the same class seem to be greater as community colleges have lower English language requirements than universities. If class sizes are too large, teachers may have difficulty catering for students' needs due to their differences in learning styles, English language proficiency, educational and cultural backgrounds. When mismatches between learning styles and teaching styles occur, it may also be difficult for teachers to adjust their teaching styles to reduce students' anxiety if the class size is too large. The relationship between class size and college students' achievements has been widely discussed mostly in the Western countries where English is their first language. Class size is closely related to students' motivation and attitudes. Small-class teaching is essential for courses which emphasize critical thinking, long-term retention and attitudes towards the discipline.

In diverse community college classrooms, some students may suffer from anxiety when they have to overcome the language barrier and confront with the new

teaching styles. Unfortunately, due to the large class sizes, teachers may have difficulty identifying those students and adjusting their teaching styles. When this situation arises, those unidentified students may be demotivated and their language development may be hindered. Community colleges in Hong Kong should reduce the class sizes of English language courses to around 20 students in order to maximize academic outcomes and cater for students' diverse learning styles.

6.3 Contributions of the research

The notions of learning styles and teaching styles, and the relationships between them have been considered as controversial topics in the research fields of educational psychology and second language acquisition. This research sheds new light on those controversial topics by investigating learning styles and teaching styles in EAP classrooms at community college level in Hong Kong.

This study provides both quantitative and qualitative data on EAP students' learning styles, and has analyzed the relationship between learning styles and different factors such as gender and educational backgrounds. Most of the learning style research explains the relationship between learning styles based on quantitative data. This study provides a more comprehensive analysis of the nature of learning styles in English language classrooms based on both quantitative and qualitative research. It shows that students who were educated in the same cultural environment could have different learning styles, and concludes that there are other factors other

than cultural background that could influence students' learning styles. This indicates that the previous learning style research might have put too much emphasis on cultural influence and that research on Chinese ESL/EFL students could not fully explain their learning styles. It suggests that researchers and educationalists should avoid cultural stereotyping when researching and teaching students from different cultures. In addition, some learning style literature assumes that learning styles are static in nature and resistant to change in a short period of time. This study suggests that students' learning styles are flexible and can be altered when they interact with the external factors such as teachers' teaching styles and educational contexts, over time.

This study shows the potential limitations of using questionnaire surveys for examining teaching styles, and questions the reliability and validity of teaching style inventories developed by style theorists. The evidence from this study reveals that teaching styles are flexible and could be changed when they interact with external factors such as students' learning styles and English language proficiency. Due to their flexible nature, teaching styles could not be measured accurately by using questionnaires as it was suggested by participants that teachers may have different teaching styles when they teach in different classrooms.

This study also suggests a new framework explaining the relationship between learning styles and teaching styles in English language classrooms which may help address the dilemma of the "matching theory" in the learning style literature. The traditional "matching theory" states that teaching styles and learning styles should be

well-matched in order to enhance students' learning motivation and enhance language learning. In contrast, opponents of the "matching theory" advocate that a deliberate mismatch between learning styles and teaching styles could increase students' exposure to unfamiliar teaching styles and encourage them to further develop learning styles. However, this may cause anxiety to some students when mismatches occur.

The findings of the study suggest that both learning styles and teaching styles are flexible and can be influenced by each other, as well as other internal and external factors. Learners may try to develop their learning styles in order to meet academic requirements, while teachers may adjust their teaching styles so as to provide students with an affective learning environment. When learners and teachers have more interaction with each other, their styles may become more similar to each other. However, the flexibility of students developing their learning styles based on the exposure to unfamiliar teaching styles is related to several factors. The study identifies that students' English language proficiency and the length of time with their teachers determine the extent to which learners can accept unfamiliar teaching styles.

A proposed new framework concludes that providing an effective learning environment and allowing sufficient time for students to adapt to the new environment are the prerequisites of encouraging students to accept new teaching styles. It also suggests the need for improving students' flexibility of developing learning styles by minimizing all possible unfavourable factors. The style literature usually suggests that students' learning styles are affected by both internal and external factors, but very few studies explore why some learners can develop their

learning styles quickly and are more willing to accept unfamiliar teaching styles, while others take longer time and are less willing to adapt themselves to different teaching styles. The new framework suggested in this study may be useful for style researchers to further investigate how to help learners develop their learning styles effectively and maximize language learning outcomes in diverse classrooms.

This study, it is argued, successfully fills a research gap in the area of learning styles and teaching styles in EAP classrooms at community college level. The findings of this research provide classroom practitioners and curriculum planners valuable information on learning styles and teaching styles for curriculum planning and teacher training.

6.4 Limitations of the research

Despite the fact that this study suggests important educational implications for English language education, especially in the teaching and learning of EAP at community college level in Hong Kong, there are a number of limitations in this study which may affect the generalizability of the research findings.

Firstly, due to limitation of time and human resources, this research could not cover all community colleges in Hong Kong and therefore invited research participants from the two largest community colleges in Hong Kong only. Furthermore, originally the researcher planned to invite 30 EAP teacher participants. However, due to the tight teaching schedules and limited number of EAP teachers, only 10 teacher participants agreed to be involved in this study. It may not be able to

generalize the results on teachers' teaching styles accurately since the limited number of participants may potentially affect the generalizability of the research findings.

The second limitation is the collection of quantitative findings from students. According to the college policy on the medium of instructions in both colleges, all class activities, except the Chinese language courses, should be conducted in English. The researcher could not provide Chinese translation of the student questionnaire and explained the questionnaires using students' first language. Some weaker language students might have difficulty understanding some of the statements and gave the wrong responses due to the language barrier. Another possible problem is that some students were not motivated to complete the questionnaire as they believed the research was irrelevant to their studies. As a result, some students might not have filled out the questionnaire seriously and their responses may not accurately represent their actual beliefs towards learning styles. Additionally, many students avoided choosing the extreme options (i.e. strongly agree / disagree), as described in the literature pieces earlier.

East Asian culture emphasizes harmony in social relationships by avoiding extreme options. The results of that can be seen when presenting the statistics of students' learning style preferences. Many learning styles are categorized as minor learning styles which is possibly because of their hesitation about giving extreme answers. When designing this questionnaire, the researcher had already considered that and tried to avoid the "cultural shyness" impact by using 6-point scales, instead of 5-point scales, in order to improve the accuracy of the results.

The third limitation is that the data collection method from both teachers and students mainly relied on verbal self-report. It is possible that what students and teachers reported might not reflect what they actually think. Although students were asked to report their beliefs using their first language, some students still might not be able to explain their thoughts clearly and accurately.

In addition, some students might be hesitant to express what they actually thought in group interviews when they found that their beliefs were different from others or may have offended other students. For example, one of the students said they might not want to work with low proficiency students. Some respondents may feel embarrassed to explain this idea directly and clearly in front of other students as this may offend their classmates and this is also considered to be selfish in Chinese culture.

Students may try to answer the interview questions based on social norms, but not their own beliefs. Moreover, as the researcher was also a teaching staff member in both colleges, some students may worry that the researcher would disclose their answers to their teachers. They may try to avoid answers which may offend the teachers as well. To offset those problems, the researcher had build a good rapport with students by having casual talks at the beginning and explaining clearly the data collected would be kept anonymous and confidential. For teacher participants, those problems were less likely. However, it is still possible that some teachers might have difficulty expressing their ideas clearly as teaching style is an abstract concept.

The last limitation of this study is convenience sampling was used due to

limitation of time. Both teachers and students were invited to participate in this study voluntarily. The data collected might not be able to represent unmotivated learners and teachers' beliefs towards learning styles and teaching styles. For example, this research only could interview 10 teachers, who had close relationships with the researcher, and who were interested in second / foreign language teaching and learning research. For student interviews, not all students agreed to participate in the interviews, especially the less motivated students. Therefore, this study could not explain whether students' motivation is related to their flexibility of learning styles. It also could not examine whether less motivated teachers would adapt their teaching styles based on students' learning styles.

6.5 Recommendations for future research

Drawing on the implications and limitations of the study, style researchers should use an integrated approach to explore the nature of learning styles and teaching styles and the relationship between them in English language classrooms. This research indicates that the development of learning styles and teaching styles involves the interplay of different factors. The relationship between them in classroom learning is complex. This study employed questionnaire surveys and interviews to explore learning styles and teaching styles. It is suggested that future research should use different research methods to explore learning styles and teaching styles in-depth. As stated in the previous section on limitations, the self-report questionnaire surveys and interviews may not reflect the full picture of learning styles and teaching styles

accurately. In addition, this study found that there are limitations of using questionnaire surveys to examine teaching styles. It is suggested that style researchers can explore other possible methods such as case studies, think-aloud methods and observations to investigate learning styles and teaching styles. Integrating the research results derived from different research methods can help build a clearer understanding about learning styles and teaching styles.

In addition, due to time limitation, the researcher had difficulty inviting students and teachers from other community colleges to participate in this research. To increase the generalizability and replicability of style research, future researchers can expand the research population. For instance, this study could only interview 10 EAP teachers. Views about teaching styles may not fully reflect all teachers' views about teaching styles and learning styles. Apparently, involving more research participants from different institutions can improve the generalizability and replicability of the research.

Furthermore, most of the style literature focuses on whether matching or mismatching learning styles and teaching styles could bring benefits to language learning. The evidence of this research, however, suggests that both learning styles and teaching styles are flexible. Educationalists should explore further why some learners have higher flexibility to accept unfamiliar teaching styles and extend their learning styles. In addition, they should also explore the factors which could enhance learners' flexibility to develop their learning styles and the unfavourable factors which would obstruct their development of learning styles. For example, experimental

research can be done to investigate how to encourage learners to accept new teaching styles without causing anxiety.

Moreover, the results of this study mainly relied on the research participants' self-report findings due to time limitation. The findings of this study indicate that both learners and teachers might change their styles when they have more learning and teaching experiences. To further examine the nature of learning styles and teaching styles, longitudinal research can be done to investigate clearly what possible factors might be related to the change of their styles. Those findings could certainly help researchers understand how to help learners develop their learning styles through careful curriculum planning and would also be useful for teachers' professional development.

6.6 Chapter summary

This research reaffirms the complex nature of learning styles and teaching styles, and the relationship between them in classroom learning, especially in English language classrooms in community colleges. The research findings suggest that learning styles and teaching styles from different perspectives and put more emphasis on the interaction between different factors contributing to the development of the styles. In addition, they should also note the flexible nature of learning styles and teaching styles. This study has provided educationalists and curriculum planners with a better understanding of how to incorporate learning styles into the curriculum and

lesson planning, especially in the teaching and learning of EAP. This chapter concludes the research study by providing educational implications based on the research findings. It also suggests that the relationship between learning styles and teaching styles should be further explored in order to improve the educational experiences of students and maximize educational outcomes.

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Appendices

Appendix A: Information letter and consent form for students

Appendix B: Information letter and consent form for teachers

Appendix C: Learning style preference questionnaire for students

Appendix D: Teaching style preference questionnaire for teachers

Appendix E: Prompt interview questions for students

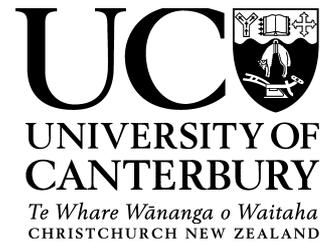
Appendix F: Prompt interview questions for teachers

Appendix G: Reliability test results of learning style preference questionnaire for students

Appendix H: Means, standard deviations, and the one-way ANOVA results of students' learning style preferences according to different factors

Appendix A: Information letter and consent form for students

Tel.: +852 6011 2822 (Hong Kong)
+64 3 364 2987 (New Zealand)
Email: heidi.wong@pg.canterbury.ac.nz



15 January, 2012

A Study of English Language Learning Styles and Teaching Style Preferences of Hong Kong Community College Students and Teachers in English for Academic Purposes (EAP) Contexts

Information Sheet for Students

I am a Doctor of Philosophy candidate at the College of Education, University of Canterbury, New Zealand. I am currently conducting a research study on Hong Kong community college students and teachers' English language learning style and teaching style preferences in English for Academic Purposes contexts. I would like to invite you to participate in this study in order to understand more about Hong Kong community college students' English language learning style preferences.

If you agree to take part in this study, you will be invited to complete a questionnaire about your learning style preferences in EAP contexts, which will take less than 15 minutes. In addition, I would like to invite you to attend a 30-minute semi-structured group interview. The group interview will be held in the College during non-instructional time and will involve five or six students from your class. All participants of the interview will be asked to treat what is shared in confidence. The interview will be tape recorded for transcription purposes and further data checking only.

The participation of this study is voluntary. If you participate, you have the right to withdraw from the study at any time without penalty. If you withdraw, I will do my best to remove any information relating to you, providing this is practically achievable. I will make sure that the information provide to me will be treated with the utmost confidentiality and anonymity, and no identifying information on your institution or individuals will be written in reports or publications. All the collected data will be securely stored in password protected facilities for three years following the study and will then be destroyed.

The research results will be useful for the contribution to the research field of English language education at community college level and will provide valuable information for curriculum design and teacher training. The results will also be reported internationally at conferences and in English language teaching journals. All participants will receive a report on the study.

The research study has received ethical approval from the University of Canterbury Educational Research Ethics Committee. If concerns arise about this aspect of my work, please contact me (details above), or my thesis supervisor, Prof. Garry Hornby (garry.hornby@canterbury.ac.nz). If you have a complaint about the study, please contact the Chair, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

If you agree to participate in this research, please complete the attached consent form and return it to me in the envelope provided by (Day/Month).

I am looking forward to working with you and thank you in advance for your contributions.

Heidi Wong

Appendix A (Continued)

A Study of English Language Learning Styles and Teaching Style Preferences of Hong Kong Community College Students and Teachers in English for Academic Purposes (EAP) Contexts

Consent Form for Students

I have read the information sheet and understand what will be required of me if I participate in the research.

I have been given a full explanation of this project and have been given opportunity to ask questions.

I understand that my participation is voluntary and I may withdraw at any stage without penalty.

I understand that any information or opinions I provide will be kept confidential to the researcher and that any published or reported results will not identify me and my College.

I understand that all data collected for the study will be kept in locked and secure facilities at the University of Canterbury and/or in password protected electronic form and will be destroyed after three years.

I understand that I can receive a copy of the report on the findings of the study.

I understand that I can get more information about this project from the researcher and that I can contact the University of Canterbury Ethics Committee if I have any complaints about the research.

By signing below, I agree / disagree* to participate in this research project.

I agree/disagree* to complete the attached self-reported questionnaire.

I agree/disagree* to attend a 30-minute semi-structured group interview with five or six students in the context of this study. I understand that the group interview will be tape-recorded for transcription purposes and further data checking only, and all participants of the interview will be asked to treat what is shared in confidence.

**Please delete as appropriate.*

Name: _____ Signature: _____

Date: _____ Email address for report (Optional): _____

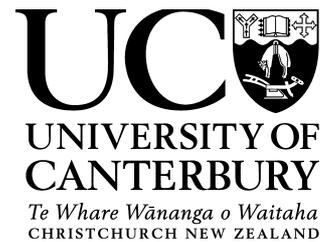
If you agree to attend a sharing session, please leave your contact number.

Contact No.: _____

Please return this consent form in the sealed envelope to your class teacher. Thank you.

Appendix B: Information letter and consent form for teachers

Tel.: +852 6011 2822 (Hong Kong)
+64 3 364 2987 (New Zealand)
Email: heidi.wong@pg.canterbury.ac.nz



15 January, 2012

A Study of English Language Learning Styles and Teaching Style Preferences of Hong Kong Community College Students and Teachers in English for Academic Purposes (EAP) Contexts

Information Sheet for Teachers

I am a Doctor of Philosophy candidate at the College of Education, University of Canterbury, New Zealand. I am currently conducting a research study on Hong Kong community college students and teachers' English language learning style and teaching style preferences in English for Academic Purposes contexts. I would like to invite you to participate in this study in order to understand more about Hong Kong community college teachers' teaching style preferences in English for Academic Purposes (EAP) contexts.

If you agree to take part in this study, you will be invited to complete a questionnaire about your teaching style preferences in EAP contexts, which will take less than 15 minutes. In addition, I would like to invite you to attend a 30-minute semi-structured group interview. The interview will be held in the College during non-instructional time and will involve three or four of your colleagues. All participants of the interview will be asked to treat what is shared in confidence. It will be tape recorded for transcription purposes and further data checking only.

The participation of this study is voluntary. If you participate, you have the right to withdraw from the study at any time. If you withdraw, I will do my best to remove any information relating to you, providing this is practically achievable. I will make sure that the information provide to me will be treated with the utmost confidentiality and anonymity, and no identifying information on your institution or individuals will be written in reports or publications. All the collected data will be securely stored in password protected facilities for three years following the study and will then be destroyed.

The research results will be useful for the contribution to the research field of English language education at community college level and will provide valuable information for curriculum design and teacher training. The results will also be reported internationally at conferences and in English language teaching journals. All participants will receive a report on the study.

The research study has received ethical approval from the University of Canterbury Educational Research Ethics Committee. If concerns arise about this aspect of my work, please contact me (details above), or my thesis supervisor, Prof. Garry Hornby (garry.hornby@canterbury.ac.nz). If you have a complaint about the study, please contact the Chair, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

If you agree to participate in this research, please complete the attached consent form and return it to me in the envelope provided by (Day/Month).

I am looking forward to working with you and thank you in advance for your contributions.

Heidi Wong

Appendix B (Continued)

A Study of English Language Learning Styles and Teaching Style Preferences of Hong Kong Community College Students and Teachers in English for Academic Purposes (EAP) Contexts

Consent Form for Teachers

I have read the information sheet and understand what will be required of me if I participate in the research.

I have been given a full explanation of this project and have been given opportunity to ask questions.

I understand that my participation is voluntary and I may withdraw at any stage without penalty.

I understand that any information or opinions I provide will be kept confidential to the researcher and that any published or reported results will not identify me and my College.

I understand that all data collected for the study will be kept in locked and secure facilities at the University of Canterbury and/or in password protected electronic form and will be destroyed after three years.

I understand that I can receive a copy of the report on the findings of the study.

I understand that I can get more information about this project from the researcher and that I can contact the University of Canterbury Ethics Committee if I have any complaints about the research.

By signing below, I agree / disagree* to participate in this research project.

I agree/disagree* to complete the attached self-reported questionnaire.

I agree/disagree* to attend a 30-minute semi-structured group interview with three or four teachers in the context of this study. I understand that the group interview will be tape-recorded for transcription purposes and further data checking only, and all participants of the interview will be asked to treat what is shared in confidence.

**Please delete as appropriate.*

Name: _____ Signature: _____

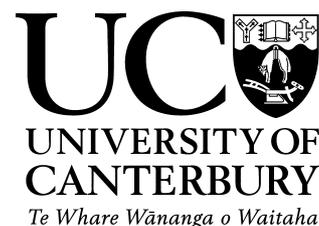
Date: _____ Email address for report (Optional): _____

If you agree to attend a sharing session, please leave your contact number.

Contact No.: _____

Thank you.

Appendix C: Learning style preference questionnaire for students



Language Learning Style Preference Questionnaire

Gender: *Male / Female (*Please delete as appropriate.)

Programme: * Associate Degree / Higher Diploma

Year of Study: *1 / 2 / 3 / 4

Major Field (e.g. Arts, IT, Social Sciences):

Place of Origin:

● Hong Kong / Mainland China / Others (Please specify: _____)

●

First Language: _____

Second Language: _____

Where did you receive secondary education?

- English-medium (EMI) secondary school in Hong Kong
- Chinese-medium (CMI) secondary school in Hong Kong
- International school in Hong Kong International school in China
- Local secondary school in China / Taiwan
- Local secondary school in English-speaking countries
- Other(s) (Please specify: _____)

_____)

What was your highest educational qualification before the admission to the Associate Degree / Higher Diploma programme?

- Form Seven / Grade 13 Form Six / Grade 12 Form Five / Grade 11
- Pre-Associate Degree / Foundation Diploma
- Other (Please specify: _____)

_____)

Directions

This questionnaire has been designed to identify the way(s) you learn best – the way(s) you *prefer* to learn.

Read each statement on the following pages. Please respond to the statements *AS THEY APPLY TO YOUR STUDY OF **ENGLISH FOR ACADEMIC PURPOSES***. This questionnaire use the following rating scale when responding to each item:

6	5	4	3	2	1
Strongly agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree

For example, if you agree with the statement, please circle

6	⑤	4	3	2	1
----------	----------	----------	----------	----------	----------

Please respond to each statement quickly, without too much thought. Try not to change your responses after you choose them.

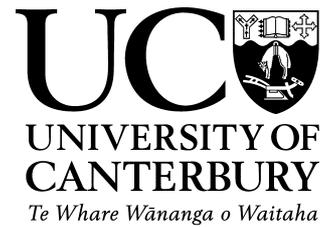
1. I learn best by reading what the teacher writes on the board and/or PowerPoint presentations.	6	5	4	3	2	1
2. I learn better in class with oral instructions.	6	5	4	3	2	1
3. I prefer to learn by doing practical work in class. (E.g. Practise writing a good introduction in an academic writing lesson.)	6	5	4	3	2	1
4. I learn more when I can make something by myself. (E.g. Giving a poster presentation)	6	5	4	3	2	1
5. I like it when I work with other students.	6	5	4	3	2	1
6. I learn best by working on individual tasks.	6	5	4	3	2	1
7. I prefer to solve problems by myself first (instead of relying on teacher's explanation).	6	5	4	3	2	1
8. I prefer teachers to lecture most of the time.	6	5	4	3	2	1
9. I like class activities that allow me to analyse problems.	6	5	4	3	2	1
10. I like teachers providing me with lots of examples to illustrate language concepts (e.g. grammar and vocabulary).	6	5	4	3	2	1

11. When I read instructions, I learn them better.	6	5	4	3	2	1
12. When I do things in class, I learn better. (E.g. Jotting down vocabulary meanings, instead of reading handouts given by teachers only.)	6	5	4	3	2	1
13. I learn more when I make something for a class project. (E.g. Collecting and summarising readings for a class project.)	6	5	4	3	2	1
14. I learn more when I study with other students.	6	5	4	3	2	1
15. When I work alone, I learn better.	6	5	4	3	2	1
16. I prefer to participate in activities that allow me to explore topics which I am interested in.	6	5	4	3	2	1
17. I learn better if teachers prepare lots of handouts for me.	6	5	4	3	2	1
18. I prefer teachers to give me models of successful work from other people when doing assignments.	6	5	4	3	2	1
19. I remember things I have heard in class better than things I have read.	6	5	4	3	2	1
20. I enjoy learning in class by doing practical work. (E.g. Practising how to cite an article in class, instead of reading referencing manuals given by the teachers.)	6	5	4	3	2	1
21. I like teachers explaining language concepts by making drawings (e.g. concept mapping / mindmapping).	6	5	4	3	2	1
22. I prefer teachers to give me lots of guidelines and reference materials when giving assignments.	6	5	4	3	2	1
23. I prefer teachers to give me opportunities to ask and respond to questions.	6	5	4	3	2	1
24. I learn better if someone can show me how I can apply different language concepts in different situations.	6	5	4	3	2	1
25. I think I understand language concepts (e.g. grammar) better with written notes than oral explanation.	6	5	4	3	2	1
26. I learn better in class when listening to a lecture (instead of reading a book).	6	5	4	3	2	1
27. I understand things better in class when I participate in active	6	5	4	3	2	1

activities (e.g. role-playing).						
28. When I construct something, I remember what I have learned better. (E.g. Writing my own notes for revision.)	6	5	4	3	2	1
29. I enjoy working on an assignment with two or three classmates.	6	5	4	3	2	1
30. I think having personal consultation with my lecturers helps me understand new concepts or things that I do not understand.	6	5	4	3	2	1
31. When I am interested in a topic, I prefer finding out more about it on my own (instead of relying on teachers).	6	5	4	3	2	1
32. I learn better when I can evaluate on other people's work (e.g. Evaluating on other people's essays in an academic writing lesson).	6	5	4	3	2	1
33. I learn more by reading textbooks than by listening to lectures.	6	5	4	3	2	1
34. I learn better with instructions that allow me to hear what I am learning.	6	5	4	3	2	1
35. I learn better when I study with others.	6	5	4	3	2	1
36. I prefer to work by myself.	6	5	4	3	2	1
37. When I don't understand something, I prefer figuring it out for myself first.	6	5	4	3	2	1
38. I like teachers spending most of the time on explanation when presenting new concepts in class.	6	5	4	3	2	1
39. I prefer teachers to allow me to analyze language concepts (e.g. grammar and vocabulary) through giving examples.	6	5	4	3	2	1
40. I understand better if someone can show me how to do things or demonstrate ways of thinking. (E.g. Showing how to work out the answers in class.)	6	5	4	3	2	1

Thank you for your contribution.

Appendix D: Teaching style preference questionnaire for teachers



Language Teaching Style Preference Questionnaire

Gender: *Male / Female (*Please delete as appropriate.)

Place of Origin: * Hong Kong / Other (Please specify: _____)

First Language: _____ **Second Language (Optional):**

Where did you receive secondary education?

Hong Kong

Hong Kong and other(s) (Please specify: _____)

Other(s) (Please specify: _____)

What is the highest academic qualification that you have attained?

Bachelor's Degree Master's Degree

Doctoral Degree Other (Please specify: _____)

Did you receive professional training on teaching English as a second/foreign language?

Yes (Please specify: _____)

No

How long have you been working as an English as a second/foreign language teacher?

Less than 2 years 2 – 5 years 6 – 10 years 11 – 15 years

16 – 20 years More than 20 years

How many years have you taught English as a second/foreign language at community college level?

Less than 2 years 2 – 5 years 6 – 10 years More than 10 years

How many years have you taught English for Academic Purposes at community college level?

Less than 2 years 2 – 5 years 6 – 10 years More than 10 years

Directions

This questionnaire has been designed to identify **the way(s) you prefer to teach English for Academic Purposes.**

Read each statement on the following pages. Please respond to the statements *AS THEY APPLY TO YOUR TEACHING OF **ENGLISH FOR ACADEMIC PURPOSES.***

This questionnaire uses the following rating scale when responding to each item:

6	5	4	3	2	1
Strongly agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree

For example, if you **agree** with the statement, please circle

6	⑤	4	3	2	1
----------	----------	----------	----------	----------	----------

Please respond to each statement quickly, without too much thought. Try not to change your responses after you chosen them.

1. I think students learn best by reading what I write on the board and/or PowerPoint presentations.	6	5	4	3	2	1
2. Students learn better in class with oral instructions.	6	5	4	3	2	1
3. I like giving students practical work in class. (E.g. Practise writing a good introduction in an academic writing lesson.)	6	5	4	3	2	1
4. I think students learn more by making something by themselves. (E.g. Giving a poster presentation.)	6	5	4	3	2	1
5. I try to encourage students to work with each other.	6	5	4	3	2	1
6. I think students learn best by working on individual tasks.	6	5	4	3	2	1
7. I encourage students to solve problems by themselves first (instead of relying on teacher's explanation).	6	5	4	3	2	1
8. Lecturing is a significant part of how I teach each lesson.	6	5	4	3	2	1
9. I like class activities which allow students to analyse problems.	6	5	4	3	2	1
10. I like providing students with lots of examples to illustrate language	6	5	4	3	2	1

concepts (e.g. grammar and vocabulary).						
11. I think students learn better with written instructions.	6	5	4	3	2	1
12. I think students learn better if they do things in class. (E.g. Jotting down vocabulary meanings, instead of relying on handouts given by teachers.)	6	5	4	3	2	1
13. Students learn more when they make something for a class project. (E.g. Collecting and summarising readings for a class project.)	6	5	4	3	2	1
14. Students learn more when they study with other students.	6	5	4	3	2	1
15. Students learn better when they work alone.	6	5	4	3	2	1
16. I like designing activities that allow students to explore topics which they are interested in.	6	5	4	3	2	1
17. I think students learn better if I prepare lots of handouts for them.	6	5	4	3	2	1
18. When possible, I give students models of successful work from other people when giving assignments.	6	5	4	3	2	1
19. I think students remember things they have heard in class better than things they have read.	6	5	4	3	2	1
20. I think students enjoy learning in class by doing practical work. (E.g. Practising how to cite an article in class, instead of reading referencing manuals given by the teachers.)	6	5	4	3	2	1
21. When possible, I explain language concepts by making drawings (e.g. concept mapping / mindmapping).	6	5	4	3	2	1
22. I prefer to give students lots of guidelines and reference materials when giving assignments.	6	5	4	3	2	1
23. I prefer to give students opportunities to ask and respond to questions.	6	5	4	3	2	1
24. I like showing students how they can apply different language concepts in different situations.	6	5	4	3	2	1
25. I think students understand language concepts (e.g. grammar and vocabulary) better with written notes than oral explanation.	6	5	4	3	2	1
26. I think students learn better when listening to a lecture (instead of reading a book).	6	5	4	3	2	1

27. I think students understand things better in class with active activities (e.g. role-playing).	6	5	4	3	2	1
28. I think asking students to construct something helps them remember things better. (E.g. Writing and organising their own notes for revision.)	6	5	4	3	2	1
29. Students enjoy working on assignments with two or three classmates.	6	5	4	3	2	1
30. I think having personal consultation with my students helps them understand new concepts or things that they do not understand.	6	5	4	3	2	1
31. I encourage students to find out more about a topic which they are interested in on their own first, instead of relying on teachers.	6	5	4	3	2	1
32. Students learn better when they can evaluate on other people's work. (E.g. Evaluating on other students' essays in an academic writing lesson.)	6	5	4	3	2	1
33. I think students learn more by reading textbooks than by listening to lectures.	6	5	4	3	2	1
34. I think students learn better with instructions that allow them to hear what they are learning.	6	5	4	3	2	1
35. I think students learn better when they study with others.	6	5	4	3	2	1
36. I think students prefer to work by themselves.	6	5	4	3	2	1
37. When students don't understand something, I try to encourage them to figure it out for themselves first.	6	5	4	3	2	1
38. In class, I like spending most of the time on explanation when presenting new concepts.	6	5	4	3	2	1
39. I encourage students to analyze language concepts (e.g. grammar and vocabulary) through giving examples.	6	5	4	3	2	1
40. I think students learn better if I can show them how to do things or demonstrate ways of thinking. (E.g. Showing how to work out the answers in class.)	6	5	4	3	2	1

Thank you for your contribution!

Appendix E: Prompt interview questions for students

1. To what extent do you think your questionnaire results reflect your preferred learning styles in EAP contexts?
2. Do you think your learning experience / background contributes to your English language learning style preferences? If yes, how?
3. Do you think the Chinese / Hong Kong culture contributes to your English language learning style preferences? If yes, how?
4. What other possible factors may affect your language learning style preferences?
5. To what extent do you think the match/mismatch between your learning style preferences and your instructors' teaching styles affects your language learning in EAP contexts?
6. Other related questions.

Appendix F: Prompt interview questions for teachers

1. To what extent do you think your questionnaire results reflect your preferred teaching styles in EAP contexts?
2. Do you think your academic experience / background contributes to your English language teaching styles? If yes, how?
3. Do you think your own culture contributes to your English language teaching styles? If yes, how?
4. What other possible factors may affect your English language teaching styles?
5. To what extent do you think the match/mismatch between your teaching styles and your students' learning styles affects your students' language learning in EAP contexts?
6. Other related questions.

Appendix G:

Reliability test results of learning style preference questionnaire for students

G.1 Visual

Reliability Statistics

Cronbach's Alpha	N of Items
.558	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q1	12.2716	4.145	.330	.499
Q11	12.2009	3.900	.364	.471
Q25	12.2873	3.576	.384	.451
Q33	12.7284	3.563	.306	.527

G.2 Auditory

Reliability Statistics

Cronbach's Alpha	N of Items
.634	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q2	12.5840	4.240	.346	.610
Q19	12.5981	3.332	.464	.528
Q26	12.5589	3.483	.499	.500
Q34	12.5432	4.264	.356	.604

G.3 Kinaesthetic

Reliability Statistics

Cronbach's Alpha	N of Items
.628	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q3	12.6703	4.020	.402	.562
Q12	12.5102	4.115	.411	.556
Q20	12.7473	3.834	.460	.520
Q27	12.7708	3.944	.362	.595

G.4 Tactile

Reliability Statistics

Cronbach's Alpha	N of Items
.583	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q4	12.9843	3.616	.382	.498
Q13	13.1900	3.459	.401	.482
Q21	13.0000	3.682	.312	.554
Q28	12.9796	3.743	.366	.511

G.5 Individual

Reliability Statistics

Cronbach's Alpha	N of Items
.520	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q6	12.4804	3.401	.424	.349
Q15	12.7473	3.252	.323	.438
Q19	12.5573	3.889	.226	.519
Q30	12.4568	3.871	.279	.474

G.6 Group

Reliability Statistics

Cronbach's Alpha	N of Items
.749	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q5	12.5699	4.642	.575	.673
Q14	12.5557	4.980	.551	.689
Q29	12.7049	4.567	.540	.695
Q35	12.6986	4.912	.514	.707

G.7 Independent

Reliability Statistics

Cronbach's Alpha	N of Items
.665	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q7	13.2873	3.903	.422	.616
Q16	13.2590	4.126	.443	.601
Q31	13.2292	4.095	.408	.624
Q37	13.3721	3.721	.515	.550

G.8 Dependent

Reliability Statistics

Cronbach's Alpha	N of Items
.619	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q8	13.1774	4.118	.372	.569
Q17	12.9545	3.795	.439	.518
Q22	12.7316	4.256	.377	.564
Q38	12.8289	4.230	.409	.543

G.9 Teacher-modeling

Reliability Statistics

Cronbach's Alpha	N of Items
.678	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q10	13.7363	3.886	.456	.615
Q18	13.8571	3.770	.464	.610
Q24	13.9137	4.129	.434	.629
Q40	13.8823	3.830	.486	.595

G.10 Analytic

Reliability Statistics

Cronbach's Alpha	N of Items
.697	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q9	13.1978	4.184	.358	.711
Q23	13.0816	3.723	.570	.576
Q32	13.2355	3.929	.503	.619
Q39	13.0298	3.891	.506	.617

Appendix H: Means, standard deviations, and the one-way ANOVA results of students' learning style preferences according to different factors

H.1.1 Learning style preference means and standard deviations according to gender

		N	Mean	Std. Deviation	Minimum	Maximum
Visual	Male	309	16.7346	2.55094	5.00	24.00
	Female	328	16.4329	2.37760	5.00	22.00
	Total	637	16.5793	2.46588	5.00	24.00
Auditory	Male	309	17.2816	2.31771	9.00	24.00
	Female	328	17.3659	2.14326	10.00	24.00
	Total	637	17.3250	2.22823	9.00	24.00
Tactile	Male	309	17.6634	2.36107	11.00	24.00
	Female	328	17.1433	2.44215	10.00	23.00
	Total	637	17.3956	2.41533	10.00	24.00
Kinaesthetic	Male	309	16.9709	2.62279	8.00	24.00
	Female	328	16.8323	2.39761	8.00	23.00
	Total	637	16.8995	2.50834	8.00	24.00
Group	Male	309	17.0485	2.85031	7.00	24.00
	Female	328	16.6494	2.73983	5.00	24.00
	Total	637	16.8430	2.79889	5.00	24.00
Individual	Male	309	16.7540	2.47671	9.00	24.00
	Female	328	16.7409	2.22783	10.00	24.00
	Total	637	16.7473	2.35000	9.00	24.00
Independent	Male	309	18.0421	2.57262	11.00	24.00
	Female	328	17.4085	2.42770	12.00	24.00
	Total	637	17.7159	2.51710	11.00	24.00
Dependent	Male	309	17.1456	2.65582	4.00	24.00
	Female	328	17.3110	2.43338	9.00	24.00
	Total	637	17.2308	2.54305	4.00	24.00

H.1.1 (Continued)

		N	Mean	Std. Deviation	Minimum	Maximum
Analytic	Male	309	17.7379	2.61102	8.00	24.00
	Female	328	17.3354	2.44143	10.00	24.00
	Total	637	17.5306	2.53114	8.00	24.00
Teacher-modeling	Male	309	18.4595	2.64375	10.00	24.00
	Female	328	18.4665	2.36800	11.00	24.00
	Total	637	18.4631	2.50358	10.00	24.00

H.1.2 ANOVA for gender and learning style preferences

		Sum of Squares	df	Mean Square	F	Sig.
Visual	Between Groups	14.483	1	14.483	2.387	.123
	Within Groups	3852.764	635	6.067		
	Total	3867.246	636			
Auditory	Between Groups	1.131	1	1.131	.227	.634
	Within Groups	3156.602	635	4.971		
	Total	3157.733	636			
Tactile	Between Groups	43.046	1	43.046	7.454	.007*
	Within Groups	3667.262	635	5.775		
	Total	3710.308	636			
Kinaesthetic	Between Groups	3.055	1	3.055	.485	.486
	Within Groups	3998.515	635	6.297		
	Total	4001.570	636			
Group	Between Groups	25.350	1	25.350	3.247	.072
	Within Groups	4956.952	635	7.806		
	Total	4982.301	636			

H.1.2 (Continued)

		Sum of Squares	df	Mean Square	F	Sig.
Individual	Between Groups	.028	1	.028	.005	.944
	Within Groups	3512.280	635	5.531		
	Total	3512.308	636			
Independent	Between Groups	63.861	1	63.861	10.226	.001*
	Within Groups	3965.709	635	6.245		
	Total	4029.570	636			
Dependent	Between Groups	4.350	1	4.350	.672	.413
	Within Groups	4108.727	635	6.470		
	Total	4113.077	636			
Analytic	Between Groups	25.776	1	25.776	4.043	.045*
	Within Groups	4048.877	635	6.376		
	Total	4074.653	636			
Teacher-modeling	Between Groups	.008	1	.008	.001	.972
	Within Groups	3986.375	635	6.278		
	Total	3986.383	636			

* The mean difference is significant at the .05 level.

H.2.1 Learning style preference means and standard deviations according to year of study

		N	Mean	Std. Deviation	Minimum	Maximum
Visual	Year 1	458	16.5721	2.36130	8.00	24.00
	Year 2	179	16.5978	2.72219	5.00	23.00
	Total	637	16.5793	2.46588	5.00	24.00
Auditory	Year 1	458	17.1834	2.26601	9.00	24.00
	Year 2	179	17.6872	2.09129	11.00	23.00
	Total	637	17.3250	2.22823	9.00	24.00

H.2.1 (Continued)

		N	Mean	Std. Deviation	Minimum	Maximum
Tactile	Year 1	458	17.2183	2.38162	10.00	24.00
	Year 2	179	17.8492	2.44826	11.00	24.00
	Total	637	17.3956	2.41533	10.00	24.00
Kinaesthetic	Year 1	458	16.7860	2.51082	8.00	24.00
	Year 2	179	17.1899	2.48540	12.00	24.00
	Total	637	16.8995	2.50834	8.00	24.00
Group	Year 1	458	16.8668	2.83263	7.00	24.00
	Year 2	179	16.7821	2.71751	5.00	23.00
	Total	637	16.8430	2.79889	5.00	24.00
Individual	Year 1	458	16.6441	2.32623	19.00	24.00
	Year 2	179	17.0112	2.39613	9.00	24.00
	Total	637	16.7473	2.35000	9.00	24.00
Independent	Year 1	458	17.6288	2.57105	11.00	24.00
	Year 2	179	17.9385	2.36587	11.00	24.00
	Total	637	17.7159	2.51710	11.00	24.00
Dependent	Year 1	458	17.1965	2.56910	4.00	24.00
	Year 2	179	17.3184	2.48009	9.00	23.00
	Total	637	17.2308	2.54305	4.00	24.00
Analytic	Year 1	458	17.4083	2.54098	10.00	24.00
	Year 2	179	17.8436	2.48549	8.00	24.00
	Total	637	17.5306	2.53114	8.00	24.00
Teacher-modeling	Year 1	458	18.3057	2.49253	10.00	24.00
	Year 2	179	18.8659	2.49357	10.00	24.00
	Total	637	18.4631	2.50358	10.00	24.00

H.2.2 ANOVA for year of study and learning style preferences

		Sum of Squares	df	Mean Square	F	Sig.
Visual	Between Groups	.085	1	.085	.014	.906
	Within Groups	3867.161	635	6.090		
	Total	3867.246	636			
Auditory	Between Groups	32.659	1	32.659	6.636	.010*
	Within Groups	3125.074	635	4.921		
	Total	3157.733	636			
Tactile	Between Groups	51.214	1	51.214	8.888	.003*
	Within Groups	3659.093	635	5.762		
	Total	3710.308	636			
Kinaesthetic	Between Groups	20.997	1	20.997	3.350	.068
	Within Groups	3980.572	635	6.269		
	Total	4001.570	636			
Group	Between Groups	.923	1	.923	.118	.732
	Within Groups	4981.378	635	7.845		
	Total	4982.301	636			
Individual	Between Groups	17.341	1	17.341	3.151	.076
	Within Groups	3494.967	635	5.504		
	Total	3512.308	636			
Independent	Between Groups	12.346	1	12.346	1.952	.163
	Within Groups	4017.224	635	6.326		
	Total	4029.570	636			
Dependent	Between Groups	1.913	1	1.913	.296	.587
	Within Groups	4111.164	635	6.474		
	Total	4113.077	636			
Analytic	Between Groups	24.384	1	24.384	3.823	.050*
	Within Groups	4050.269	635	6.378		
	Total	4074.653	636			

H.2.2 (Continued)

		Sum of Squares	df	Mean Square	F	Sig.
Teacher-modeling	Between Groups	40.396	1	40.396	6.501	.011*
	Within Groups	3945.987	635	6.214		
	Total	3986.383	636			

* The mean difference is significant at the .05 level.

H.3.1 Learning style preference means and standard deviations according to type of programme

		N	Mean	Std. Deviation	Minimum	Maximum
Visual	Associate Degree	428	16.6121	2.41173	5.00	23.00
	Higher Diploma	209	16.5120	2.57785	8.00	24.00
	Total	637	16.5793	2.46588	5.00	24.00
Auditory	Associate Degree	428	17.2991	2.25418	9.00	23.00
	Higher Diploma	209	17.3780	2.17850	10.00	24.00
	Total	637	17.3250	2.22823	9.00	24.00
Tactile	Associate Degree	428	17.4650	2.35317	11.00	24.00
	Higher Diploma	209	17.2536	2.53775	10.00	24.00
	Total	637	17.3956	2.41533	10.00	24.00
Kinaesthetic	Associate Degree	428	17.0771	2.38480	8.00	23.00
	Higher Diploma	209	16.5359	2.71391	8.00	24.00
	Total	637	16.8995	2.50834	8.00	24.00
Group	Associate Degree	428	16.9229	2.70504	7.00	24.00
	Higher Diploma	209	16.6794	2.98193	5.00	24.00
	Total	637	16.8430	2.79889	5.00	24.00
Individual	Associate Degree	428	16.8037	2.30035	9.00	24.00
	Higher Diploma	209	16.6316	2.45011	10.00	24.00
	Total	637	16.7473	2.35000	9.00	24.00

H.3.1 (Continued)

		N	Mean	Std. Deviation	Minimum	Maximum
Independent	Associate Degree					
	Higher Diploma	209	17.3876	2.54536	12.00	24.00
	Total	637	17.7159	2.51710	11.00	24.00
Dependent	Associate Degree	428	17.2150	2.37385	9.00	23.00
	Higher Diploma	209	17.2632	2.86434	4.00	24.00
	Total	637	17.2308	2.54305	4.00	24.00
Analytic	Associate Degree	428	17.5164	2.51501	8.00	24.00
	Higher Diploma	209	17.5598	2.56970	10.00	24.00
	Total	637	17.5306	2.53114	8.00	24.00
Teacher_modeling	Associate Degree	428	18.3084	2.60305	10.00	24.00
	Higher Diploma	209	18.7799	2.25946	13.00	24.00
	Total	637	18.4631	2.50358	10.00	24.00

H.3.2 ANOVA for type of programme and learning style preferences

		Sum of Squares	df	Mean Square	F	Sig.
Visual	Between Groups	1.410	1	1.410	.232	.631
	Within Groups	3865.837	635	6.088		
	Total	3867.246	636			
Auditory	Between Groups	.875	1	.875	.176	.675
	Within Groups	3156.858	635	4.971		
	Total	3157.733	636			
Tactile	Between Groups	6.274	1	6.274	1.076	.300
	Within Groups	3704.034	635	5.833		
	Total	3710.308	636			
Kinaesthetic	Between Groups	41.133	1	41.133	6.595	.010*
	Within Groups	3960.436	635	6.237		
	Total	4001.570	636			

H.3.2 (Continued)

		Sum of Squares	df	Mean Square	F	Sig.
Group	Between Groups	8.324	1	8.324	1.063	.303
	Within Groups	4973.977	635	7.833		
	Total	4982.301	636			
Individual	Between Groups	4.162	1	4.162	.753	.386
	Within Groups	3508.146	635	5.525		
	Total	3512.308	636			
Independent	Between Groups	33.525	1	33.525	5.327	.021*
	Within Groups	3996.045	635	6.293		
	Total	4029.570	636			
Dependent	Between Groups	.326	1	.326	.050	.822
	Within Groups	4112.751	635	6.477		
	Total	4113.077	636			
Analytic	Between Groups	.265	1	.265	.041	.839
	Within Groups	4074.388	635	6.416		
	Total	4074.653	636			
Teacher-modeling	Between Groups	31.218	1	31.218	5.012	.026*
	Within Groups	3955.165	635	6.229		
	Total	3986.383	636			

* The mean difference is significant at the .05 level.

H.4.1 Learning style preference means and standard deviations according to major field

		N	Mean	Std. Deviation	Minimum	Maximum
Visual	Aviation	58	17.1379	2.34295	8.00	23.00
	Business Administration	317	16.6593	2.35141	8.00	23.00
	Dental Hygiene	21	14.6667	1.82574	10.00	17.00
	Computing Studies	39	16.3846	2.08523	12.00	20.00

H.4.1 (Continued)

		N	Mean	Std. Deviation	Minimum	Maximum
Visual	Life Sciences	56	16.7857	2.43246	11.00	22.00
	Language and Humanities	87	16.5977	2.87515	5.00	23.00
	Media, Cultural and Creative Studies	23	16.5217	2.48394	12.00	22.00
	Social Sciences	21	15.1429	2.65115	11.00	22.00
	Engineering	15	17.1333	2.85023	14.00	24.00
	Total	637	16.5793	2.46588	5.00	24.00
Auditory	Aviation	58	17.6724	2.08914	13.00	22.00
	Business Administration	317	17.1451	2.21568	9.00	22.00
	Dental Hygiene	21	16.0952	2.30010	10.00	20.00
	Computing Studies	39	16.9231	2.30999	12.00	21.00
	Life Sciences	56	17.9286	2.57157	12.00	23.00
	Language and Humanities	87	17.5747	1.98619	13.00	24.00
	Media, Cultural and Creative Studies	23	18.1739	1.74908	15.00	22.00
	Social Sciences	21	17.3810	2.15583	11.00	21.00
	Engineering	15	17.4667	2.50333	14.00	24.00
	Total	637	17.3250	2.22823	9.00	24.00
Tactile	Aviation	58	17.7069	2.12759	13.00	22.00
	Business Administration	317	17.2713	2.35239	11.00	24.00
	Dental Hygiene	21	15.0476	1.82965	10.00	18.00
	Computing Studies	39	16.7692	2.63040	11.00	22.00
	Life Sciences	56	18.1607	2.54256	12.00	24.00
	Language and Humanities	87	17.7241	2.41935	12.00	23.00
	Media, Cultural and Creative Studies	23	18.0000	2.27636	14.00	23.00
	Social Sciences	21	17.8571	2.24245	14.00	22.00
	Engineering	15	17.4000	2.72029	14.00	24.00
	Total	637	17.3956	2.41533	10.00	24.00

H.4.1 (Continued)

	N	Mean	Std. Deviation	Minimum	Maximum	
Kinaesthetic	Aviation	58	17.0172	2.59210	10.00	22.00
	Business Administration	317	16.9779	2.38059	10.00	24.00
	Dental Hygiene	21	14.6190	2.59762	8.00	19.00
	Computing Studies	39	15.8205	2.69377	8.00	21.00
	Life Sciences	56	17.6607	2.45895	12.00	23.00
	Language and Humanities	87	16.8276	2.35366	12.00	23.00
	Media, Cultural and Creative Studies	23	17.0435	2.65396	12.00	23.00
	Social Sciences	21	18.0000	2.75681	13.00	23.00
	Engineering	15	16.6000	2.44365	14.00	24.00
	Total	637	16.8995	2.50834	8.00	24.00
Group	Aviation	58	17.5000	2.81755	9.00	23.00
	Business Administration	317	16.8360	2.92819	5.00	24.00
	Dental Hygiene	21	15.2381	2.52794	10.00	20.00
	Computing Studies	39	16.7692	2.78588	11.00	24.00
	Life Sciences	56	17.4821	2.62845	13.00	24.00
	Language and Humanities	87	16.7011	2.45478	11.00	22.00
	Media, Cultural and Creative Studies	23	16.1739	2.53435	7.00	20.00
	Social Sciences	21	16.3333	2.74469	10.00	20.00
	Engineering	15	17.0667	2.49189	14.00	23.00
	Total	637	16.8430	2.79889	5.00	24.00
Individual	Aviation	58	16.5000	2.23411	11.00	22.00
	Business Administration	317	16.7192	2.19231	10.00	23.00
	Dental Hygiene	21	15.6190	2.22432	10.00	20.00
	Computing Studies	39	16.0769	2.63962	11.00	21.00
	Life Sciences	56	17.3929	2.72816	11.00	24.00
	Language and Humanities	87	17.2184	2.12639	11.00	22.00
	Media, Cultural and Creative Studies	23	16.7391	3.87967	11.00	24.00

H.4.1 (Continued)

		N	Mean	Std. Deviation	Minimum	Maximum
Individual	Social Sciences	21	16.4762	2.56162	9.00	21.00
	Engineering	15	16.8667	3.15926	11.00	24.00
	Total	637	16.7473	2.35000	9.00	24.00
Independent	Aviation	58	17.4483	2.29548	12.00	22.00
	Business Administration	317	17.7413	2.51375	11.00	24.00
	Dental Hygiene	21	16.0000	2.19089	12.00	22.00
	Computing Studies	39	16.8718	2.69678	11.00	23.00
	Life Sciences	56	18.5357	2.50791	13.00	24.00
	Language and Humanities	87	18.0920	2.21849	14.00	23.00
	Media, Cultural and Creative Studies	23	17.1304	2.32192	12.00	21.00
	Social Sciences	21	18.8571	2.74382	15.00	24.00
	Engineering	15	16.8667	3.06749	12.00	24.00
	Total	637	17.7159	2.51710	11.00	24.00
Dependent	Aviation	58	17.2931	3.35611	4.00	23.00
	Business Administration	317	17.2618	2.37422	9.00	23.00
	Dental Hygiene	21	15.7143	2.57183	9.00	20.00
	Computing Studies	39	16.5641	2.43651	11.00	22.00
	Life Sciences	56	17.6250	2.35536	12.00	23.00
	Language and Humanities	87	17.4483	2.56886	9.00	24.00
	Media, Cultural and Creative Studies	23	17.7826	2.69607	11.00	22.00
	Social Sciences	21	16.8095	2.15914	12.00	20.00
	Engineering	15	17.2000	2.88345	14.00	24.00
	Total	637	17.2308	2.54305	4.00	24.00
Analytic	Aviation	58	18.1207	2.26396	13.00	23.00
	Business Administration	317	17.4006	2.52589	10.00	24.00
	Dental Hygiene	21	15.8571	2.68860	10.00	20.00
	Computing Studies	39	17.0000	2.52357	11.00	22.00
	Life Sciences	56	18.0893	2.10002	11.00	22.00
	Language and Humanities	87	17.7586	2.39168	8.00	23.00

H.4.1 (Continued)

		N	Mean	Std. Deviation	Minimum	Maximum
Analytic	Media, Cultural and Creative Studies	23	18.0000	2.73030	11.00	23.00
	Social Sciences	21	18.2381	3.19225	12.00	23.00
	Engineering	15	16.6000	3.06594	10.00	24.00
	Total	637	17.5306	2.53114	8.00	24.00
Teacher-modeling	Aviation	58	18.6552	2.13206	13.00	23.00
	Business Administration	317	18.3060	2.55033	10.00	24.00
	Dental Hygiene	21	17.2857	2.32686	13.00	22.00
	Computing Studies	39	18.5128	2.52224	10.00	22.00
	Life Sciences	56	18.9643	2.57939	13.00	24.00
	Language and Humanities	87	18.7241	2.17646	14.00	24.00
	Media, Cultural and Creative Studies	23	19.4348	2.40881	15.00	23.00
	Social Sciences	21	18.3333	3.08761	13.00	23.00
	Engineering	15	17.8667	3.20416	14.00	24.00
	Total	637	18.4631	2.50358	10.00	24.00

H.4.2 ANOVA for major field and learning style preferences

		Sum of Squares	df	Mean Square	F	Sig.
Visual	Between Groups	148.855	8	18.607	3.143	.002*
	Within Groups	3718.391	628	5.921		
	Total	3867.246	636			
Auditory	Between Groups	98.085	8	12.261	2.517	.011*
	Within Groups	3059.648	628	4.872		
	Total	3157.733	636			
Tactile	Between Groups	196.642	8	24.580	4.393	.000*
	Within Groups	3513.666	628	5.595		
	Total	3710.308	636			

H.4.2 (Continued)

		Sum of Squares	df	Mean Square	F	Sig.
Kinaesthetic	Between Groups	217.522	8	27.190	4.512	.000*
	Within Groups	3784.048	628	6.026		
	Total	4001.570	636			
Group	Between Groups	120.482	8	15.060	1.945	.051
	Within Groups	4861.819	628	7.742		
	Total	4982.301	636			
Individual	Between Groups	92.460	8	11.557	2.122	.061
	Within Groups	3419.848	628	5.446		
	Total	3512.308	636			
Independent	Between Groups	189.971	8	23.746	3.884	.000*
	Within Groups	3839.599	628	6.114		
	Total	4029.570	636			
Dependent	Between Groups	89.723	8	11.215	1.751	.084
	Within Groups	4023.354	628	6.407		
	Total	4113.077	636			
Analytic	Between Groups	145.912	8	18.239	2.915	.003*
	Within Groups	3928.741	628	6.256		
	Total	4074.653	636			
Teacher-modeling	Between Groups	86.572	8	10.821	1.743	.086
	Within Groups	3899.811	628	6.210		
	Total	3986.383	636			

* The mean difference is significant at the .05 level.

H.5.1 Learning style preference means and standard deviations according to type of secondary school attended

		N	Mean	Std. Deviation	Minimum	Maximum
Visual	EMI School in Hong Kong	274	16.6423	2.52964	8.00	24.00
	CMI School in Hong Kong	347	16.5303	2.42126	5.00	23.00
	Total	621	16.5797	2.46828	5.00	24.00
Auditory	EMI School in Hong Kong	274	17.6095	2.25419	10.00	24.00
	CMI School in Hong Kong	347	17.0836	2.20127	9.00	22.00
	Total	621	17.3156	2.23828	9.00	24.00
Tactile	EMI School in Hong Kong	274	17.4343	2.51975	10.00	24.00
	CMI School in Hong Kong	347	17.3401	2.33215	12.00	24.00
	Total	621	17.3816	2.41519	10.00	24.00
Kinaesthetic	EMI School in Hong Kong	274	17.0693	2.64345	8.00	24.00
	CMI School in Hong Kong	347	16.6974	2.36498	8.00	24.00
	Total	621	16.8615	2.49648	8.00	24.00
Group	EMI School in Hong Kong	274	16.9015	2.77768	7.00	24.00
	CMI School in Hong Kong	347	16.8127	2.84210	5.00	24.00
	Total	621	16.8519	2.81195	5.00	24.00
Individual	EMI School in Hong Kong	274	16.8650	2.46886	19.00	24.00
	CMI School in Hong Kong	347	16.6311	2.23269	9.00	24.00
	Total	621	16.7373	2.34079	9.00	24.00
Independent	EMI School in Hong Kong	274	17.9526	2.58934	11.00	24.00
	CMI School in Hong Kong	347	17.5072	2.45346	12.00	24.00
	Total	621	17.7037	2.52199	11.00	24.00
Dependent	EMI School in Hong Kong	274	17.1168	2.65077	4.00	24.00
	CMI School in Hong Kong	347	17.3199	2.47268	9.00	24.00
	Total	621	17.2303	2.55269	4.00	24.00
Analytic	EMI School in Hong Kong	274	17.6861	2.57133	10.00	24.00
	CMI School in Hong Kong	347	17.3919	2.46636	8.00	24.00
	Total	621	17.5217	2.51542	8.00	24.00

H.5.1 (Continued)

	N	Mean	Std. Deviation	Minimum	Maximum
Teacher-modeling EMI School in Hong Kong	274	18.4927	2.53942	10.00	24.00
CMI School in Hong Kong	347	18.4438	2.47978	10.00	24.00
Total	621	18.4654	2.50435	10.00	24.00

EMI: English medium-of-instruction, CMI: Chinese medium-of-instruction

H.5.2 ANOVA for type of secondary school attended and learning style preferences

		Sum of Squares	df	Mean Square	F	Sig.
Visual	Between Groups	1.923	1	1.923	.315	.575
	Within Groups	3775.381	619	6.099		
	Total	3777.304	620			
Auditory	Between Groups	42.347	1	42.347	8.556	.004*
	Within Groups	3063.792	619	4.950		
	Total	3106.138	620			
Tactile	Between Groups	1.360	1	1.360	.233	.630
	Within Groups	3615.191	619	5.840		
	Total	3616.551	620			
Kinaesthetic	Between Groups	21.180	1	21.180	3.412	.065
	Within Groups	3842.910	619	6.208		
	Total	3864.090	620			
Group	Between Groups	1.207	1	1.207	.152	.696
	Within Groups	4901.164	619	7.918		
	Total	4902.370	620			
Individual	Between Groups	8.372	1	8.372	1.529	.217
	Within Groups	3388.788	619	5.475		
	Total	3397.159	620			

H.5.2 (Continued)

		Sum of Squares	df	Mean Square	F	Sig.
Independent	Between Groups	30.366	1	30.366	4.804	.029*
	Within Groups	3913.115	619	6.322		
	Total	3943.481	620			
Dependent	Between Groups	6.315	1	6.315	.969	.325
	Within Groups	4033.756	619	6.517		
	Total	4040.071	620			
Analytic	Between Groups	13.252	1	13.252	2.098	.148
	Within Groups	3909.705	619	6.316		
	Total	3922.957	620			
Teacher-modeling	Between Groups	.366	1	.366	.058	.809
	Within Groups	3888.140	619	6.281		
	Total	3888.506	620			

* The mean difference is significant at the .05 level.

H.6.1 Learning style preference means and standard deviations according to qualifications on entry

		N	Mean	Std. Deviation	Minimum	Maximum
Visual	Form 7 / Grade 13	270	16.6667	2.63801	5.00	24.00
	Form 6 / Grade 12	274	16.6350	2.12391	8.00	22.00
	Pre-associate degree / Foundation diploma	93	16.1613	2.84487	5.00	23.00
	Total	637	16.5793	2.46588	5.00	24.00
	Auditory	Form 7 / Grade 13	270	17.5222	2.27918	10.00
Form 6 / Grade 12		274	16.9781	2.10169	9.00	22.00
Pre-associate degree / Foundation diploma		93	17.7742	2.31314	11.00	23.00
Total		637	17.3250	2.22823	9.00	24.00

H.6.1 (Continued)

		N	Mean	Std. Deviation	Minimum	Maximum
Tactile	Form 7 / Grade 13	270	17.4926	2.50612	10.00	24.00
	Form 6 / Grade 12	274	17.1277	2.27788	11.00	23.00
	Pre-associate degree / Foundation diploma	93	17.9032	2.46305	11.00	23.00
	Total	637	17.3956	2.41533	10.00	24.00
Kinaesthetic	Form 7 / Grade 13	270	16.8778	2.62031	8.00	24.00
	Form 6 / Grade 12	274	16.7518	2.34022	10.00	23.00
	Pre-associate degree / Foundation diploma	93	17.3978	2.61742	10.00	22.00
	Total	637	16.8995	2.50834	8.00	24.00
Group	Form 7 / Grade 13	270	16.6630	2.79560	5.00	23.00
	Form 6 / Grade 12	274	16.7518	2.81618	7.00	24.00
	Pre-associate degree / Foundation diploma	93	17.6344	2.64897	9.00	24.00
	Total	637	16.8430	2.79889	5.00	24.00
Individual	Form 7 / Grade 13	270	16.9111	2.46452	9.00	24.00
	Form 6 / Grade 12	274	16.5146	2.25519	11.00	24.00
	Pre-associate degree / Foundation diploma	93	16.9570	2.24535	9.00	24.00
	Total	637	16.6013	2.68899	9.00	24.00
Independent	Form 7 / Grade 13	270	17.8259	2.59598	11.00	24.00
	Form 6 / Grade 12	274	17.5912	2.47642	11.00	24.00
	Pre-associate degree / Foundation diploma	93	17.7634	2.41102	11.00	23.00
	Total	637	17.7159	2.51710	11.00	24.00
Dependent	Form 7 / Grade 13	270	17.3296	2.47790	9.00	24.00
	Form 6 / Grade 12	274	17.1460	2.29042	11.00	22.00
	Pre-associate degree / Foundation diploma	93	17.1935	3.33707	4.00	23.00
	Total	637	17.2308	2.54305	4.00	24.00

H.6.1 (Continued)

		N	Mean	Std. Deviation	Minimum	Maximum
Analytic	Form 7 / Grade 13	270	17.7333	2.47425	10.00	24.00
	Form 6 / Grade 12	274	17.2591	2.43193	11.00	24.00
	Pre-associate degree / Foundation diploma	93	17.7419	2.90765	8.00	24.00
	Total	637	17.5306	2.53114	8.00	24.00
	Teacher-modeling	Form 7 / Grade 13	270	18.7148	2.51467	10.00
	Form 6 / Grade 12	274	18.1533	2.44467	10.00	24.00
	Pre-associate degree / Foundation diploma	93	18.6452	2.56924	10.00	23.00
	Total	637	18.4631	2.50358	10.00	24.00

H.6.2 ANOVA for qualifications on entry and learning style preferences

		Sum of Squares	df	Mean Square	F	Sig.
Visual	Between Groups	19.162	2	9.581	1.579	.207
	Within Groups	3848.084	634	6.070		
	Total	3867.246	636			
Auditory	Between Groups	62.240	2	31.120	6.374	.002*
	Within Groups	3095.493	634	4.882		
	Total	3157.733	636			
Tactile	Between Groups	46.164	2	23.082	3.994	.019*
	Within Groups	3664.143	634	5.779		
	Total	3710.308	636			
Kinaesthetic	Between Groups	29.200	2	14.600	2.330	.098
	Within Groups	3972.370	634	6.266		
	Total	4001.570	636			

H.6.2 (Continued)

		Sum of Squares	df	Mean Square	F	Sig.
Group	Between Groups	69.278	2	34.639	4.470	.012*
	Within Groups	4913.024	634	7.749		
	Total	4982.301	636			
Individual	Between Groups	26.171	2	13.086	2.380	.093
	Within Groups	3486.136	634	5.499		
	Total	3512.308	636			
Independent	Between Groups	7.737	2	3.868	.610	.544
	Within Groups	4021.833	634	6.344		
	Total	4029.570	636			
Dependent	Between Groups	4.737	2	2.369	.366	.694
	Within Groups	4108.340	634	6.480		
	Total	4113.077	636			
Analytic	Between Groups	35.444	2	17.722	2.782	.063
	Within Groups	4039.209	634	6.371		
	Total	4074.653	636			
Teacher-modeling	Between Groups	46.490	2	23.245	3.741	.024*
	Within Groups	3939.893	634	6.214		
	Total	3986.383	636			

* The mean difference is significant at the .05 level.

