# THE RELATIONSHIP BETWEEN PERCEPTUAL LEARNING STYLE PREFERENCES AND LANGUAGE LEARNING STRATEGIES OF UNDERGRADUATE ESL LEARNERS

HO AI PING

FACULTY OF LANGUAGES AND LINGUISTICS
UNIVERSITY OF MALAYA
KUALA LUMPUR

2018

# THE RELATIONSHIP BETWEEN PERCEPTUAL LEARNING STYLE PREFERENCES AND LANGUAGE LEARNING STRATEGIES OF UNDERGRADUATE ESL LEARNERS

**HO AI PING**

**THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY**

**FACULTY OF LANGUAGES AND LINGUISTICS**
**UNIVERSITY OF MALAYA**
**KUALA LUMPUR**

**2018**

**UNIVERSITY OF MALAYA**

**ORIGINAL LITERARY WORK DECLARATION**

Name of Candidate: Ho Ai Ping

Matric No: THA 080010

Name of Degree: Doctor of Philosophy

Title of Thesis: The Relationship Between Perceptual Learning Style Preferences And Language Learning Strategies Of Undergraduate ESL Learners

Field of Study: Applied Linguistics

I do solemnly and sincerely declare that:

(1) I am the sole author/writer of this Work;
(2) This Work is original;
(3) Any use of any work in which copyright exists was done by way of fair dealing and for permitted purposes and any excerpt or extract from, or reference to or reproduction of any copyright work has been disclosed expressly and sufficiently and the title of the Work and its authorship have been acknowledged in this Work;
(4) I do not have any actual knowledge nor do I ought reasonably to know that the making of this work constitutes an infringement of any copyright work;
(5) I hereby assign all and every rights in the copyright to this Work to the University of Malaya ("UM"), who henceforth shall be owner of the copyright in this Work and that any reproduction or use in any form or by any means whatsoever is prohibited without the written consent of UM having been first had and obtained;
(6) I am fully aware that if in the course of making this Work I have infringed any copyright whether intentionally or otherwise, I may be subject to legal action or any other action as may be determined by UM.

Candidate's Signature Date:

Subscribed and solemnly declared before,

Witness's Signature Date:

Name:

Designation:

**THE RELATIONSHIP BETWEEN PERCEPTUAL LEARNING STYLE PREFERENCES AND LANGUAGE LEARNING STRATEGIES OF UNDERGRADUATE ESL LEARNERS**

## ABSTRACT

There are many variables that could affect learners' language learning. Two important individual differences variables that could affect second language performance are language learning styles and language learning strategies. With that in view, this study aimed to determine the overall perceptual learning styles preferences by using Reid's Perceptual Learning Style Preferences Questionnaire, PLSPQ (Reid, 1987) and the language learning strategies by using Oxford's Strategy Inventory for Language Learning version 7, SILL (Oxford, 1990a) among 1708 the first year undergraduates in *Universiti Malaysia Sarawak* (Unimas). Besides, this study also examined whether there was a relationship between perceptual learning style preferences and language learning strategies. Interviews were also conducted to further investigate factors that could affect their perceptual learning styles preferences and language learning strategies. Findings revealed that these undergraduates highly preferred individual learning style and least preferred kinesthetic learning style. As for language learning strategies, metacognitive strategies were highly employed by these learners whereas affective strategies were least used. In addition, finding also revealed a negative significant linear relationship between most perceptual learning style preferences and language learning strategies. It was found that interviewees' language proficiency, past learning experiences and personality traits were among crucial factors affecting the learners' perceptual learning style preferences. On the other hand, language proficiency, gender, language learning environment, parents' socioeconomic status and motivation were the prominent factors influencing the interviewees' language learning strategies. The results of this study implied language

learning styles and strategies could be discussed based on the psychological and sociocultural perspectives.

**Keywords:** perceptual learning style preferences, language learning strategies, psychological perspective, sociocultural perspective

**HUBUNGAN ANTARA PEMILIHAN PERSEPSI GAYA PEMBELAJARAN BAHASA DAN STRATEGI PEMBELAJARAN BAHASA DI KALANGAN PELAJAR PRASISWAZAH BAHASA INGGERIS SEBAGAI BAHASA KEDUA**

## ABSTRAK

Terdapat banyak pembolehubah yang boleh mempengaruhi pembelajaran bahasa. Dua pembolehubah penting yang boleh mempengaruhi pencapaian Bahasa Inggeris sebagai bahasa kedua ialah gaya pembelajaran bahasa dan strategi pembelajaran bahasa. Lantarannya, kajian ini bertujuan untuk menentukan pemilihan persepsi gaya pembelajaran bahasa melalui penggunaan soal selidik PLSPQ (Reid, 1987) dan strategi pembelajaran bahasa melalui soal selidik SILL versi 7 (Oxford, 1990a) di kalangan 1708 prasiswazah tahun pertama di Universiti Malaysia Sarawak (Unimas). Kajian ini juga bertujuan untuk menentukan sama ada terdapat hubungan di antara persepsi gaya pembelajaran bahasa dan strategi pembelajaran bahasa. Temu bual turut dijalankan untuk menentukan faktor-faktor yang mempengaruhi persepsi gaya pembelajaran bahasa dan strategi pembelajaran bahasa. Dapatan kajian menunjukkan bahawa prasiswazah paling suka gaya pembelajaran individu dan tidak menggemari gaya pembelajaran kinestetik. Dari aspek strategi pembelajaran bahasa, prasiswazah paling kerap menggunakan strategi pembelajaran metakognisi tetapi paling jarang mengaplikasi strategi afektif. Tambahan pula, dapatan kajian turut menunjukkan terdapat hubungan linear negatif yang signifikan di antara kebanyakan persepsi gaya pembelajaran bahasa dengan strategi pembelajaran bahasa. Dapatan kajian melalui temu bual menunjukkan tahap penguasaan bahasa Inggeris, pengalaman belajar yang lepas dan sifat personaliti mempengaruhi gaya pembelajaran bahasa responden. Sebaliknya, tahap penguasaan bahasa Inggeris, jantina, situasi pembelajaran bahasa, status sosioekonomi ibubapa dan motivasi merupakan faktor-faktor utama yang mempengaruhi strategi pembelajaran bahasa prasiswazah. Secara umum, dapatan kajian menunjukkan gaya pembelajaran bahasa dan strategi

pembelajaran bahasa dapat dijelaskan melalui perspektif-perspektif psikologi dan sosiobudaya.

**Kata kunci:** persepsi gaya pembelajaran bahasa, strategi pembelajaran bahasa, perspektif psikologi, perspektif sosiobudaya

## ACKNOWLEDGEMENTS

I would like to express my sincere attitude and thanks to my supervisors, Dr Ng Lee Luan and Associate Professor Dr Karen Kow Yip Cheng for their guidance and support in completing this dissertation. I am also very grateful to Professor Joy Reid for giving her permission for me to employ her research instrument in this study and also to Associate Professor Dr Ting Su Hie and Dr Fatimah Binti Subet for translating and proofreading the survey instrument. I also would like to express my utmost gratitude to my inter-raters, namely Dr Tan Kock Wah, Mdm Nur Fatihah and Dr Pung Weng Chiew for going through my data analysis. I would also like to express my thanks to all my friends and church members for their continuous support and encouragement. Lastly, my special thanks to God, my beloved parents, husband and children for their unconditional love, patience, sacrifice and constant encouragement throughout my years of studies.

## TABLE OF CONTENTS

## LIST OF FIGURES

## LIST OF TABLES

## LIST OF SYMBOLS AND ABBREVIATIONS

| | | |
|---|---|---|
| I. | : | Interviewer |
| IQR | : | Interquartile range |
| L2 | : | Second language |
| M | : | Mean |
| One-way ANOVA | : | One-way Analysis of Variance |
| PLSPQ | : | Perceptual Learning Style Preference Questionnaire |
| R | : | Respondent of interview |
| RO | : | Research objective |
| RQ | : | Research question |
| SD | : | Standard deviation |
| SILL | : | Strategy Inventory for Language Learning |
| SPSS | : | Statistical Package for the Social Sciences |
| Tukey's HSD | : | Tukey's Honestly Significant Difference |
| Unimas | : | *Universiti Malaysia Sarawak* |

## LIST OF APPENDICES

# CHAPTER 1: INTRODUCTION

## 1.1 Introduction

Learning a second or foreign language is a crucial educational matter in most schools throughout the world (Lavasani & Faryadres, 2011), including Malaysia. Various researchers (Hiew, 2012; Thirusanku & Yunus, 2014) have acknowledged that English is considered as a second language (ESL) in Malaysia. Similarly, Blau and Dayton (1992) also stated Malaysia is regarded as a "ESL English-using society" (as cited in Green & Oxford, 1995, p. 268). Since English language is a second language in Malaysia, unvelling appropriate strategies to assist learners to achieve greater language proficiency could be a way to enhance their second language performances. In addition, exposing English language educators to a full repertoire of language learning strategies might lead to a more effective instruction and promote the autonomous learning process by language learners.

Such action is also in line with the educational prominent shift over the last two decades which has focused on learners and learning, rather than on teachers and teaching (Lavasani & Faryadres, 2011; Liu, Qiao, & Liu, 2006; Zohrabi, Torabi, & Baybourdiani, 2012). With such shift, it is timely to look at the language learning process from the aspect of learners and the learning process. This is because learners related factors and other factors related to the learning processes might play a role in influencing the learners' language learning performances. Past literature has revealed that many factors have been attributed to the success of language learning.

Language learning styles and strategies are among the two most crucial learners' variables that affect second language performance (Moenikia & Zahed-Babelan, 2010; Oxford, 1989a). Employing strategies that are compatible with the learners' learning styles preferences might enhance their language learning processes. When the learners

are utilizing strategies that match their preferred learning styles, these learners might learn the language in a more conducive, effective and enjoyable environment. By doing so, it is perceived that second language performance could be enhanced and will indirectly help to boost their language proficiency. Even though literature have shown that there is a relationship between styles and strategies (Cohen, 2003), nevertheless, there are still limited studies that investigate the exact nature or link between styles and strategies. In addition, most studies on second language learning have examined issues related to language learning styles and strategies variables separately. Most of these studies have also being carried out in most primary or secondary learning contexts instead of tertiary contexts (Normazidah Che Musa, Koo, & Hazita Azman, 2012).

Studies that incorporates styles and strategies at a single research may be important especially to educators, instructors or curriculum planners as these studies may create awareness among stakeholders and serve as a guide on the appropriate lesson plannings including the proposed activities or methods that could match the learners' styles and strategies. In addition, instructors could also expose the learners to various available strategies in learning English language and encourage them to apply these strategies beyond their preferred styles to learn English language effectively. This study also echoed the aim of English Language Education Roadmap for Malaysia 2015-2025, whereby the goal is to produce competent users of English language in professional and academic contexts from school to tertiary levels including teacher training colleges (Azman, 2016). Since such reform is to improve the standard of English internationally, identifying variables that could affect second language performance is deemed necessary. Hence, this study aimed to investigate the relationship between the perceptual learning style preferences and language learning strategies and to identify the overall pattern and factors that might influence these styles and strategies among the first year undergraduates in a Malaysian public university.

## 1.2 Background of Study

### 1.2.1 Perceptual Learning Style Preferences

Past research has looked at many variables affecting second language learning such age, academic achievement, gender and language proficiency till now. Learning styles and strategies differed in meanings. Style refers to a "pervasive quality in the learning strategies or behavior of an individual", "a quality that persists though content may change" (Fischer & Fischer, 1979, p. 245). Keefe (1979, p. 4) broadly described learning styles as "cognitive, affective and physiological traits that are relatively stable indicators of how learners perceive, interact with and respond to the learning environment" (as cited in Park, 2002, p. 443). Reid defined learning styles as internally based traits, which are often not perceived or consciously used by the students in their learning process (as cited in Li & Qin, 2006). In addition, Oxford (2003) stated learning style is the overall pattern that provides broad direction to learning and makes the same instructional method preferred (beloved) by some students and rejected (hated) by others. Researchers (Reid, 1987; Oxford, 2011) stated that even though learners may have some strong style preferences and tendencies, learning styles are "not fixed modes of behavior" and could be "extended and modified" based on various situations and tasks (as cited in Hatami, 2012, p. 488). Nevertheless, Ehrman (1996) elaborated that the degree that individuals can "extend or shift their styles to match a specific situation" (as cited in Hatami, 2012, p. 488).

Most definitions by various scholars are in line with Reid (1995) who defined "learning style" as a person's general approach to learning and problem-solving. In short, learning styles are the patterns that an individual unconsciously prefers to adopt and are related to internally based traits, which comprise cognitive, affective and physiological aspects. However, since the learners' preferences of certain styles could be affected by the tasks given or the situations that they are in, learning styles might not be a fixed or

stable traits and could vary from one situation to another situation. It indirectly revealed that learning styles are not merely influenced by the psychological aspects of learners, but these styles could also be affected by learners' sociocultural aspect.

Research on the area of language learning styles indicates second language learners' learning styles are influenced by various factors. These factors include academic level differences (Park, 2002; Pengiran-Jadid, 2003), language proficiency (Mustaffa, 2007; Peacock, 2001), discipline of study, year of study (Peacock, 2001), age (Isemonger & Sheppard, 2003), gender (Honigsfeld & Dunn, 2003; Isemonger & Sheppard, 2003; Lincoln & Rademacher, 2006; Park, 2001; Pengiran-Jadid, 2003) and ethnicity (Lincoln & Rademacher, 2006; Park, 2001).

For example, Park (2002) found significant differences between students' academic levels and the combined learning style preferences for academic achievement. As for language proficiency, Peacock's (2001) study revealed less proficient students favoured group learning style and humanities students highly preferred auditory and individual learning styles statistically compared to science students. In addition, second year students had a significantly preference for kinesthetic styles in comparison to first year students (Peacock, 2001). However, in a study by Mustaffa (2007), lower proficiency students had major preferences for kinesthetic and tactile learning styles.

In addition, gender is considered as a factor that influences the learners' language learning styles (Park, 2001; Pengiran-Jadid, 2003). Female students indicated higher preferences for kinesthetic and group learning styles compared to male (Isemonger & Sheppard, 2003). Besides, age factor did not differ significantly with the learners' learning style preferences (Isemonger & Sheppard, 2003). Ethnicity was also found to affect the combined learning styles preferences in Park's study (2001). However, the findings on the field of language learning styles are inconsistent. Hence, despite a plethora

of research on language learning styles, there are still problems that may need to be addressed and some gaps and limitations reported in previous studies may also provide the avenue for further research in the field of language learning.

### 1.2.2 Language Learning Strategies

According to Oxford (1990a), the term 'strategy' originates from the Greek term 'strategia', which includes adversarial tactics in war like planning, competition and achieving a set target. Oxford further defined language learning strategies as the specific actions or techniques that students use in a conscious manner to improve their progress in developing L2 learning skills. Oxford's definition of strategies was based on Rigney (1978) who defined learning strategies as the often conscious steps or behaviors employed by learners to "enhance the acquisition, storage, retention, recall and use of new information" (as cited in Kashefian-Naeeini & Maarof, 2010, p. 48). In addition, strategies are described as the mental and communicative procedures employed by learners to learn and use the language (Nunan, 1999).

O'Malley and Chamot (1990) also classified language learning strategies into three main categories, namely metacognitive strategies, cognitive strategies and social/affective strategies. Metacognitive strategies involve planning and evaluating learning whereas cognitive strategies include grappling directly with the language itself and social and social/ affective strategies are where the learners interact with others or control their emotional responses to the learning situations (O'Malley & Chamot, 1990). Cognitive strategies are defined as the thought process that are used directly in the learning which enable the learners to deal with information presented in tasks and materials by working on it in different ways (Hedge, 2000). Oxford (1990a) further classified these strategies into direct and indirect strategies. Direct strategies include

memory strategies, cognitive strategies, and compensation strategies whereas indirect strategies include metacognitive strategies, affective strategies and social strategies. According to Nambiar (1998), the term 'learning strategy', is considered increasingly important in language research. The term 'strategy' has been referred to as 'techniques', 'tactics', 'cognitive abilities', 'language processing strategies' and 'problem-solving' in the literature (Nambiar, 1998). Nambiar stated language learning strategies are the methods used consciously by the learners in order to learn a language. For example, a learner with visual learning styles will tend to look at charts, written notes and highlighting the notes in order to learn effectively.

Numerous studies have contributed to our knowledge of how various variables influence English language learning strategies. Among others are language learning achievement (Chamot & El-Dinary, 1999; Cohen, 1998), type of education major (Mochizuki, 1999), gender (Ehrman & Oxford, 1989, 1990; El-Dib, 2004; Goh & Kwah, 1997; Gu, 2002), age (Ehrman & Oxford, 1990), motivation (Ho, 1999; Mochizuki, 1999; Oxford, 1989b), English language proficiency, enjoyment of English learning (Mochizuki, 1999) and course level (Griffiths, 2007). High attainers appear to use a wide range of strategies if compared to low attainers (Cohen, 1998; Embi, Long, & Hamzah, 2001; Green & Oxford, 1995; O'Malley & Chamot, 1990). Types of education major do influence the choice of language learning strategies. For example, English major students used compensation strategies, social strategies and metacognitive strategies more frequently than science major students (Mochizuki, 1999).

Besides, Green and Oxford (1995) found that successful learners use significantly greater overall language learning strategies and females tend to apply more strategies if compared to men. Self-evaluation of English proficiency had significant differences in the cognitive and metacognitive strategies (Mochizuki, 1999). There were also significant

differences among various levels of enjoyment of learning English among students (Mochizuki, 1999). Studies on gender and language learning strategies use produce mixed conclusions. For example, Ehrman and Oxford (1990) failed to discover any evidence of differences in language learning strategies use based on gender. Several results revealed gender difference was a remarkable factor that affected the choice of strategies. Female were found to use strategies more frequently than men (Ehrman & Oxford, 1989). On the other hand, Wharton (2000) indicated males used more strategies than females. A recent study found that there were differences in strategy use between men and women according to the category of strategy (El-Dib, 2004).

In addition, L2 research has indicated significant linkages between strategy use and language performance (Lan & Oxford, 2003). Besides, Griffiths (2007) found language learning strategies had significant correlation with course level. In addition, second language researchers have not paid much attention to some variables like ethnicity, cultural and educational factors. For example, ethnicity has been a neglected variable in most language learning strategies' research (Ming, 2007). Similarly, Rao (2006) stated that most researchers in L2 learning studies found cultural and educational factors were neglected in studies on language learning strategies.

Based on the discussion above, study on language learning strategies is deemed necessary, especially in various learning contexts and with different cultural backgrounds. Most studies are found to be conducted in western countries compared to Malaysia. Furthermore, Normazidah et al. (2012) mentioned that studies involving higher education learners were relatively small. Corresponding, researchers (Kirshnakumari, Paul-Evanson, & Selvanayagam, 2010; Muhammad, 2007; Nambiar, 2007) revealed students encountered problems to shift from a school learning culture to the university culture (ibid) due to a number of reasons (as cited in Normazidah et al., 2012, pp. 39-40).

Due to these conditions, it further implies the need to conduct more studies on second language learning especially in university contexts to address the limitations, gaps and recommendations from past studies besides to assist undergraduates for better language achievement and effective communicative skills for future employment. Perhaps, one suggested area of research to enhance the learners' language achievement will be identifying the perceptual learning style preferences and language learning strategies in various contexts and perspectives extensively since language learning has shifted to focus on learners and the learning process. In other words, second language learning could be viewed from the psychological and sociocultural aspects of learners. Furthermore, since it is revealed that there is a possible link between styles and strategies in language learning, but the exact nature of relationship between styles and strategies is not really being explored in past literature. Most studies have attempted to discuss styles and strategies variables separately. Additionally, studies attempting to show the link between these styles and strategies are still inadequate. In view of this, there is a need to investigate the relationship between perceptual learning style preferences and language learning strategies of learners at a single research besides exploring factors that might influence their styles and strategies from the psychological and sociocultural perspectives.

## 1.3 Research Gap

Previous studies on second language learning mainly focus on the cognitive or psychological aspect of learners. However, with the advancement of technology in education, the learning of a second language could go beyond formal classroom setting. Language learning does not only focus on learners, but it could be extended to the immediate environment of learners. The learning of English language could happen everywhere. Watson-Gegeo (2004) also supported "language learning is ubiquitous" and occurs everywhere "like in family, workplace and classroom" (as cited in Gao, 2006, p.

287). Besides, Zokaee, Zaferanieh, and Naseri (2012) stated recently, learners' individual factors have been reemphasised in the research on second language learning strategies since the process of learning has moved to focus on learners instead of teacher. Learning styles, learning strategies, affective variables, learning aptitude, gender, culture, age and other demographic variables are some major areas of individual differences (Ehrman, Leaver, & Oxford, 2003).

This implies that besides emphasis on cognitive aspects of learners, it is also necessary to focus on the social aspect of learners. Such a view is in line with Zokaee et al. (2012) who confirmed that learners' social aspects besides their cognitive factor are very crucial in second language learning studies as learning has moved to focus on learners nowadays. Madrid (1995) elaborated "student's social class, cultural level, home language, environmental language" as some sociocultural factors that might affect language learning (as cited in Fonseca-Mora, 2005, p. 15). Correspondingly, Ellis (1994) also indicated "social class and cultural level" have a great impact on second language acquisition in formal contexts (as cited in Fonseca-Mora, 2005, p. 15). Dubar (1991) elaborated "nature socialization through various institutions such as family, friends, schools, universities and work" determined culture (as cited in Barmeyer, 2004, p. 579). This culture could influence the development of learning styles (Barmeyer, 2004) and resulted in "a system of shared values, assumptions, interpretation and problem-solving methods" (Geertz, 1973 & Hofstede, 1980, as cited in Barmeyer, 2004, p. 586).

Hence, recent studies have widened the scope of their research to a sociocultural slant that includes ethnicity, social contexts and identities (Macaro, 2007). Macaro also echoed that LLS should include the sociocultural context instead of just looking at the personal factors. Oxford and Schramm (2007) also echoed the use of sociocultural besides psychological perspective in studies to investigate the language learning strategies (LLSs)

and learning styles all around the world. Oxford and Schramm also honoured the psychological and sociocultural perspectives because they acknowledged these perspectives could enrich or be enriched by each other in the research on learner strategies. Norton and Toohey (2001) stated sociocultural language learning enquiries refers "to more than immediate environment of language learning" as long as the environment is suitable for language learning (as cited in Gao, 2006, p. 287). Since language learning can and does take place beyond the classroom, Norton and Toohey further indicated good language learners might even utilise the social networks in their learning contexts to support their learning.

Furthermore, limited studies were conducted on the sociocultural aspects of the students' learning processes as the responsibility for learning relied on teachers (Gao, 2006). However, various researchers (Palfreyman, 2003; Watson-Gegeo, 2004; Wenden, 1998; Zungler & Miller, 2006) found that following the recent paradigm shift, the advent of a sociocultural approach in language learning research provides the theoretical underpinning for such an enquiry on parental involvement as it acknowledges "the importance of historical, cultural and social contexts of language learning in research" (as cited in Gao, 2006, p. 287).

Yang also emphasized second language researchers have not paid much attention to variables like ethnicity, cultural and educational factors (Yang, 2007). Various researchers (Bedell & Oxford, 1996; Grainger, 1997; Oxford & Burry-Stock, 1995; Politzer, 1983; Reid, 1987; Wharton, 2000) suggested cultural background (sometimes referred to as ethnicity or nationality) has been linked to the use and choice of language learning strategies (as cited in Hong-Nam & Leavell, 2006, p. 401). Yang added ethnicity has been a neglected variable in most research on language learning strategies. Similarly, Rao (2006) also found most researchers in the studies of L2 learning neglected cultural

and educational factors. In addition, Charlesworth (2008) also indicated not many learning styles research incorporate cultural component. Based on earlier discussion, limited studies have taken into account the sociocultural aspects of learners in second language learning as most studies tend to focus on the psychological aspect.

In addition, many past studies have investigated learning styles and language learning strategies variables separately. These studies will report findings related to learning styles and language learning strategies individually. Limited studies were found to investigate the relationship between learning styles and strategies (Li & Qin, 2006). Moreover, lack of studies are reported to focus on tertiary education including in Malaysia (Embi, Long, & Hamzah, 2001; Weng, 2012). Hence, in order to address these gaps, this study aimed to investigate how sociocultural and psychological aspects of learners might influence their perceptual learning style preferences and language learning strategies in a Malaysian public university besides to identify the relationship between perceptual learning style preferences and language learning strategies.

## 1.4 Research Objectives

This study aimed to investigate the relationship between perceptual learning style preferences and language learning strategies of first year undergraduates in a public university besides identifying the factors that might influence these styles and strategies. It seeks to answer the following research objectives:

(i) investigate perceptual learning style preferences and language learning strategies among undergraduates.

(ii) determine the relationship between perceptual learning style preferences and language learning strategies.

(iii) explore the factors that influence perceptual learning style preferences and language learning strategies.

### 1.4.1 Research Questions

Based on the research objectives (RO), this research is aimed to answer the following questions (RQ):

RO1 RQ1 What are the perceptual learning style preferences of undergraduates in learning English language using Perceptual Language Learning Styles Questionnaire (PLSPQ) (Reid, 1987)?

RQ2 What are the language learning strategies of undergraduates using Strategy Inventory for Language Learning (SILL) version 7.0 (Oxford, 1990a)?

RO2 RQ3 What is the correlation between perceptual learning style preferences and language learning strategies?

RO3 RQ4 What are the factors that influence perceptual learning style preferences?

RQ5 What are the factors that influence language learning strategies?

## 1.5 Significance of Study

Research on second language learning styles and strategies is abundant in the Western contexts. However, limited studies on language learning strategies were conducted in Malaysia (Embi, Long, & Hamzah, 2001). Hence, this study could provide an overall

picture of the undergraduates' perceptual learning style preferences and language learning strategies in learning English among the adult learners at the tertiary level in Malaysia.

In addition, previous research on language learning has focused on perceptual learning style preferences and language learning strategies variables separately. The exact nature of the relationship between these two variables, namely perceptual learning style preferences and language learning strategies is not being explored (Li & Qin, 2006). Even though literature has revealed that there is a relationship between learning styles and language learning strategies, nevertheless the precise role of styles in influencing strategies is not really being explored. Therefore, this study is significant as it investigated the perceptual learning style preferences and language learning strategies variables simultaneously and to further examine whether there is a relationship between styles and strategies. Additionally, since most past studies on styles and strategies employed either a quantitative or qualitative methods in data collection, this study is also unique as it described styles and strategies quantitatively and qualitatively in a single research.

Additionally, this study is also unique as it incorporated quantitative and qualitative methods in obtaining the data in a single research. For instance, the use of surveys and interview methods would enable the researchers to describe styles and strategies quantitatively and qualitatively. Such combination of research methods on language learning was supported by Green and Oxford (1995) who stated the incorporation of quantitative and qualitative methods is necessary in order to develop multifaceted insights that are at once broadly applicable and rich in observed detail. In short, this study aimed to provide a clearer picture on how these two variables could affect second language learning by employing a combination of research methods at a single research.

Another contribution of this study is its' attempt to elaborate that styles and strategies could be discussed from the sociocultural and psychological perspectives. Oxford and

Schramm (2007) had only emphasised the importance of psychological and sociocultural perspectives in the studies of language learning strategies all around the world. However, little attention is drawn to the influence of sociocultural perspectives on the learners' learning style preferences whether it could be influenced by the sociocultural aspect of learners. In line with this view, this study had proposed a theoretical framework that might determine whether the sociocultural aspect of learners could influence their styles as past research on styles had focused on the psychological aspects of learners in styles research.

Besides, this study also aims to explore factors that could possibly influence the learners' perceptual learning styles preferences and language learning strategies qualitatively. This is because many past studies attempted to first identify the factors that might influence the learners' styles and strategies through survey instruments. However, in this study, it could provide a more indepth information of how these factors could possibly be related to learners' styles and strategies.

This study also hopes to create greater awareness among the educators, language instructors, curriculum planners and other related parties on the preferred styles and strategies of learners. Such awareness will assist the relevant parties in the lesson planning appropriately. Applying appropriate language learning strategies that match the learners' learning styles may create a more effective, enjoyable and conducive language learning environment which could result in better language achievement among the learners.

Lastly, findings from this study might serve as a platform for strategy training to be conducted more effectively by knowing the actual learners' actual styles and strategies. Since learners will be exposed to a wide choice of language learning strategies during the strategy trainings, learners might be encouraged to stretch beyond their preferred learning styles to discover other strategies that may enhance their second language learning

performance. Moreover, employing appropriate strategies that suit the learners' learning styles might motivate and self-regulate them in language learning.

## 1.6 Limitations of Study

This study was conducted with all first year undergraduates who enrolled in a public university, namely *Universiti Malaysia Sarawak* (Unimas). The number of respondents who participated in this study were based on the willingness and availability of the respondents. Hence, findings obtained from these undergraduates could not be generalised to the whole population of undergraduates in Malaysia as it only covered the first year undergraduates in a public university due to time and financial constraints. The number of undergraduates based on some ethnicity was too small and caused the number to be labelled under the category of 'others'. This indirectly prohibited the researcher to describe further how ethnicity variable might affect the language learning styles and strategies of undergraduates as the number of responses were inadequate to be analysed.

This study only revealed the overall perceptual learning style preferences and language learning strategies of learners. The specific items under each category of styles and strategies were not reported. In addition, this study only employed self-reporting questionnaire and interview to collect data.

## 1.7 Definition of Terms

### 1.7.1 Perceptual Learning Style Preferences

This study adopted the definition of Reid (1995) that learning styles are an internally based traits and used unconsciously by learners. It also includes an array of cognitive, affective and physiological aspects. Additionally, these styles could be "extended and modified based on different situations or tasks" (Oxford, 2011, as cited in Hatami, 2012,

p. 488; Reid, 1987). Perceptual learning style preferences refer to visual learning style, auditory learning style, kinesthetic learning style, tactile learning style, group learning style and individual learning style (Reid, 1987).

(i) Visual Learning Style

A visual learner is one who learns through seeing. For example, he or she will prefer to learn alone with a book rather than listening. The learner also prefers to learn from lecture notes, graphs, charts or so forth.

(ii) Auditory Learning Style

A learner with auditory learning style prefers to learn through hearing spoken words and from their oral explanation.

(iii) Kinesthetic Learning Style

A kinesthetic learner learns best by experience, by being involved physically in classroom experiences such as through role-playing and field trips.

(iv) Tactile Learning Style

Tactile learners prefer to learn through "*hands-on*" experiences with material like building models and doing experiments in a laboratory.

(v) Group Learning Style

Someone who learns through at least with one other learner is known as a group learner. He or she would value pair works or discussion in class.

(vi) Individual Learning Style

An individual learner learns best when he or she works alone.

(vii) Major Learning Styles

Major learning styles are the styles whereby a learner will find most comfortable to learn in that particular way. The score for major learning styles will fall under the score of 38 to 50 or the mean score of 13.50 and above.

(viii) Minor Learning Styles

Minor learning styles indicate the areas where a learner can function well as a learner. Usually a successful learner may have the stronger tendency to try some new ways in his/her learning process besides the existing ways. The scores for minor learning styles are from 25 to 37 or the mean score of 11.50 to 13.49

(ix) Negligible Learning Styles

Negligible learning styles refer to the styles, which a learner may have difficulty learning in that particular way. The scores for such learning styles ranged from 0 to 24 or the mean score of 11.49 and below.

### 1.7.2 Language Learning Strategies

Language learning strategies will be defined based on psychological perspectives and sociocultural perspective as proposed by Oxford & Schramm (2007) in this study. Based on psychological perspectives, $L_2$ learner strategy is "a specific plan, action, behaviour, step or technique that individual learners use, with some degree of consciousness, to improve their progress in developing skills in a second or foreign language" (Oxford & Schramm, 2007, pp. 47-48). Additionally, based on sociocultural perspective, one of the most common definitions for $L_2$ learner strategy is a "learner's socially mediated plan or action to meet a goal, which is related directly or indirectly to second language learning" (Oxford & Schramm, 2007, p. 48).

Oxford (1990a) divided language learning strategies into direct strategies and indirect strategies. Directs strategies require direct involvement of the target language. Oxford indicated these strategies "require mental processing of the language" (p. 37). These strategies are classified into memory, cognitive and compensation strategies. Memory strategies enable a learner to store and retrieve new information whereas cognitive strategies assist the learners to "understand and produce new language" (Oxford, 1990a, p. 37). Oxford also defined compensation strategies as the strategies to assist learners to employ the language despite their big gaps in knowledge (p. 37).

On the other hand, indirect strategies are employed to "support and manage language learning without directly involving the target language" (Oxford, 1990a, p. 135). These strategies are classified into metacognitive, affective and social strategies. Metacognitive strategies enable the learners to "control their own cognition" in the learning process through "centering, arranging, planning and evaluating" (Oxford, 1990a, p. 135). On the contrary, Oxford stated affective strategies enable the learners to regulate their "emotions, motivations and attitudes" (p. 135). Social strategies enable learning through the learners' interaction with others (Oxford, 1990a, p. 135).

## 1.8 Conclusion

In this chapter, the background of this study and various aspects of past studies on language learning styles and language learning strategies, including the research gaps were discussed. Besides, it also provided the research aim, objectives and research questions of this study. In addition, this chapter also addressed the significance and limitations of this study. The next chapter will further discuss the theoretical framework and past studies related to perceptual learning style preferences and language learning strategies.

# CHAPTER 2: LITERATURE REVIEW

## 2.1 Introduction

This chapter provides a comprehensive review of the literature on language learning styles and language learning strategies in various contexts. It also describes factors that might influence language learning styles and language learning strategies of learners. This chapter will begin by defining the theories of language learning, language learning styles and language learning strategies. It will be followed by discussing relation between tasks, styles and strategies. It also defines the terms for language learning styles and language learning strategies and provides discussion on past studies related to these two areas.

## 2.2 Second Language Learning

Learning English as a second language has been a concern among Malaysian learners. Most parents are enthusiastic about their children's ability to learn more than one language to survive in this competitive world. In addition, the roles of English have changed nowadays. Richards (2002) has the similar view that English is no longer considered "the property of the English-speaking world", but it is known as the "language for globalisation, international communication, commerce and trade, the media and pop culture' and international language" (p. 3).

With the change of the role of English language in view, learners are also perceived to be more motivated to learn English language as their second language. A second language has "social and communicative functions within the community where it is learned" (Oxford, 1990a, p. 6). Oxford (2003) further mentioned learners were motivated to learn English as a second language because it is the primary means for daily communication and survival besides providing rich input. Likewise, Littlewood (1984) also indicates second language learning is related to the concept that "the language has communicative

functions insides the community where the learner lives" (p. 54). Cohen (1998) also defined a second language as the language learned within the community who spoke the language. Since English is viewed as a second language in Malaysia, Nunan (1999) advocated that the teaching and learning processes in Malaysia are usually conducted in English (as cited in Kamalizad & Samuel, 2015, p. 3). This study would thereby regard the learning of English as a second language among the first year undergraduates as these learners are exposed to learn directly or indirectly in English in the tertiary education.

Since learning English language is of great concern in Malaysia, identifying factors that might affect the learning of English is deemed important. Various studies (Ehrman & Oxford, 1990; Galbraith & Gardner, 1988; Oxford, 1992; Oxford & Ehrman, 1993; Scarcella & Oxford, 1992; Skehan, 1989) have shown that students' individual differences play an important role in the learning of a foreign or second language (as cited in Chen, 2009). These learners' individual differences include "learning styles, learning strategies, learning aptitude, age, gender, culture and the affective domain (i.e. motivation, anxiety, self-efficacy, tolerance of ambiguity, etc.)" (as cited in Chen, 2009, pp. 304-308). Hence, this study will look at the factors that will affect the perceptual learning style preferences and language learning strategies of undergraduates in learning English as a second language at a public university in Malaysia.

The following section will continue to describe the theories related to language learning, language learning styles and language learning strategies. It will also discuss relevant studies related to perceptual learning styles preferences and language learning strategies.

## 2.3 Language Learning Theories

In 1950s and 1960s, the field of linguistics and of psychology focused on generative linguistics, that "emphasised the rule-governed and creative nature of human language" (Mitchell, Myles, & Marsden, 2013, p. 30). Noam Chomsky later provided a great stimulus to the field of psycholinguistics, especially to the study of language acquisition in the 1970s (Mitchell et al., 2013). In 1980s, second language learning theories and empirical research were also greatly developed (Mitchell et al., 2013). Since second language learning is seen as a cognitive psychology process instead of the behaviourism process, second language learning researchers used various models of knowledge and of learning from cognitive psychology (Mitchell, et al., 2013). One of these models encompassed the O'Malley and Chamot's model (1990) (as cited in Mitchell et al., 2013, p. 47).

In addition, a number of 1980s researchers also suggested the environment played a role in second language learning (as cited in Mitchell et al., 2013). Researchers, who were primarily interested in instructed learners, began to focus on the learning theories of Lev Vygotsky, popularised in general education from the 1970s onward, and then followed by neo-Vygotskian accounts of second language learning (Frawley & Lantolf, as cited in Mitchell et al., 2013, p. 49). Such 'neo-Vygotskian' theory constituted the current socio-cultural theory (Mitchell & Myles, 2004, p. 194). In short, since the 1980s, there has been an interest in applying sociocultural theory (SCT) to the domain of second language learning (Mitchell et al., 2013). Sociocultural approaches emphasized the interdependence of social and individual processes in constructing knowledge together. Sociocultural theory was crucial to the study of teaching, learning and development in various educational contexts (Minick, Stone, & Forman, 1996). It acknowledged that "the development of a sociocultural theory of mind requires careful attention to the institutional context of social interaction" (Minick et al., 1996, p. 6). These institutions

included schools, homes, and library, which affected the interactions among people or between people and cultural artifacts like books and computers. Second, language is a "multitude of distinct speech genres and semiotic devices" (Minick et al., 1996, p. 6) which is closely related to particular social institutions and social practices. Thirdly, educationally significant human interactions include people who develop various interpersonal relationships in a shared activity given in an institution (Minick et al., 1996, p. 6). Finally, the mode of thinking is "the integral system of motives, goals, values and beliefs that are closely tied to concrete forms of social practice" (Minick et al., 1996, p. 6).

Charlesworth (2008) stated the socio-cultural view emphasised the influence of the immediate setting and "the bigger one in which it was embedded" (p. 116). Such a view has shifted to focus on the multi-dimensional view in learning instead of individual (Charlesworth, 2008). In other words, social context and individual factor influenced learning. Similarly, Lattuca (2002) also viewed that "learning cannot be separated from the context in which it occurs, and to re-conceptualise cognition and learning as activities that occur though social interaction" (as cited in Charlesworth, 2008, p. 116).

Drame and Xu (2008) further reviewed that ongoing research has acknowledged the effect of context on situated learning (p. 29). This social context examined the impact of community, school, classroom and teacher factors on all tiers of RTI models and on student achievement (Drame & Xu, 2008). Cousin, Diaz, Flores, and Hernandez (1996) suggested a model of five sociocultural contexts, which emphasised "the relationships among the contexts involved in the educational process" for each student (as cited in Drame & Xu, 2008, p. 29). These contexts are divided into "the social/cultural/community contact", "the district/school context level", "the

classroom/teacher context", "the group context" and "the social construction of the mind" (Cousin et al., 1996, as cited in Drame & Xu, 2008, p. 29).

The first level, the social/cultural/community contact refers to the "daily interactions in the community and family" (Cousin et al., as cited in Drame & Xu, 2008, p. 29). Additionally, the second level, the district/school context level refers to "the school socioeconomic status (SES), institutional referral practices, teacher quality and financial resources which could impede or capitalize upon child development" (Cousin et al., as cited in Drame & Xu, 2008, p. 29). The third level, the "classroom/teacher context" significantly affecting the child transformation into a student whereby the teacher set the cultural values of classroom and the interaction between students in the classroom (Cousin et al., as cited in Drame & Xu, 2008, p. 29). The final two levels handled "the impact of peer relationships on cognitive development and the internalization of social interactions" (Cousin et al., as cited in Drame & Xu, 2008, p. 29).

Lantolf (2000a) stated that the socio-cultural belief considered language as a "tool for thought" or "a means of mediation, in mental activity (Mitchell & Myles, 2004, p. 194). Learning is "a mediated process" because it is "dependent on face-to-face interaction and shared processes such as joint problem solving and discussion" (Mitchell & Myles, 2004, p. 195). According to Mitchell and Myles (2004), Vygotsky defined The Zone of Proximal Development as:

> The difference between the child's development level as determined by independent problem solving and the higher level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (Vygotsky, 1978, as cited in Mitchell & Myles, 2004, p. 196)

Mitchell and Myles (2004) further mentioned that current socio-cultural theorists have extended Vygotsky's original formulation of the Zone of Proximal Development to include "other forms of collaborative activity, including pair and group work among peers" (p. 214). Based on discussions in this section, this study will adhere to the view that sociocultural theory might influence the learners' language learning as learning has extended to the learners' context. Having elaborated the relevant language learning theories related to this study, the following section will discuss the two important variables, namely language learning styles and language learning strategies and the relationship.

## 2.4 Relationship between Learning Styles and Strategies

Ehrman and Oxford (1990) also revealed that there might be a certain close relationship between learning strategies and learning styles and language learning aptitude. In addition, they added that learning styles might influence the choice of learning strategies (Ehrman & Oxford, 1990). Likewise, Brown (1994) also revealed that learning strategies are directly related to the learners' innate learning styles and other factors related to personality. Ehrman (1996) also viewed that styles are realized by specific strategies (as cited in Kamińska, 2014, p. 9). When students reflect on their learning strategies, they could be able to discover their learning styles (Kamińska, 2014). Schmeck (1988) stated that learning styles could "moderate either the effectiveness of certain learning strategies or the procedures used to teach those strategies to students" (p. 172). Ellis (2001), who proposed a model of second language acquisition also acknowledged that there is a relationship between learning styles (which is perceived as an element of individual differences), situational factors, learning strategies and learning outcomes (as cited in as cited in Kamińska, 2014, pp. 5-6). Hence, a few scholars have revealed that there is a certain degree of relationship between learning styles and strategies.

Cohen (2003) and Mariani (1996) further explained the relationship between learning styles and learning strategies. Mariani (1996) indicated that there was a relationship between learning styles and learning strategies (Figure 2.1).

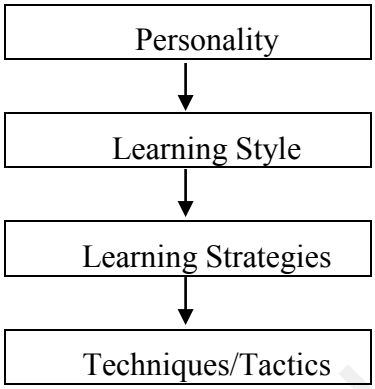



**Figure 2.1: Relationship between learning styles and strategies**

Personality refers to the "very general basic of the individual character structure" (Mariani, 1996, p. 2), which will affect the learner's learning style (Figure 2.2). Learning styles reflect the learner's "consistent and preferred learning approach" in various contexts and situations and it includes "affective, social and physiological behaviors" (Mariani, 1996, p. 2). The learning style of the learners will then affect the strategies of the learner. Finally, learning strategies includes "a cluster of tactics or techniques, the visible level, where a learner actually do in the classroom" (Mariani, 1996, p. 2).

Likewise, Cohen (2003) also revealed how styles, strategies and tasks might intersect (p. 281) as shown in Figure 2.3. Language learning styles are the "general approaches to language learning", while strategies are the "specific behaviours that learners select in their language learning and use" (Cohen, 2003, p. 279). When the learners are given the language tasks, they will use a series of strategies that will be presumably consistent with their learning styles preferences as shown in Figure 2.2.

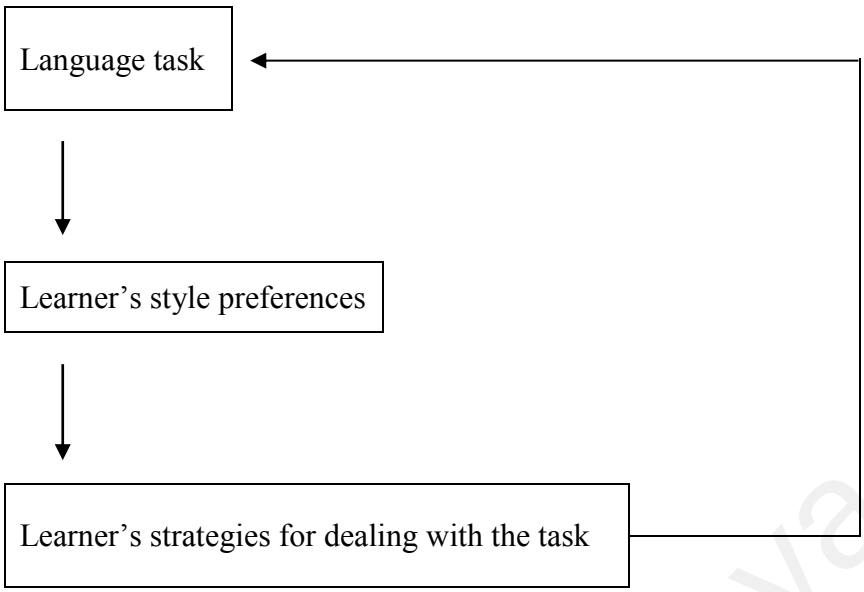



**Figure 2.2: The interaction of style, strategy and task (Cohen, 2003)**

Hence, based on these two models by Cohen (2003) and Mariani (1996), it depicted that learner's style preferences could influence the choice of the learners' strategies in completing various language learning tasks. Similary, Shi (2011) also indicated that many studies had revealed that learning styles might significantly affect the learners' learning strategies despite the differences in research instruments and contexts. In addition, Al-Hebaishi (2012) also indicated that past studies revealed learning styles might influence the choice of learning strategies. Nevertheless, there is still inadequate studies that describe the nature of relationship between styles and strategies. Such gap has provided a platform for the researcher to examine further the language learning style preferences and language learning strategies variables and their relationship, as these two variables have crucial impact on second language acquisition (SLA) or second language learning (L2). The following section will continue to discuss the concept of styles and strategies, followed by theories related to learning styles and strategies.

## 2.5 Background on Language Learning Styles

This section will define the term "language learning styles" and theories related to language learning styles. Knowing the concept of language learning styles and theories will lead to better understanding of the area on language learning styles. Furthermore, Riazi and Riasati's study (2007) highlighted that the learning process of learners could be hindered if teachers were unaware of their students' preferred learning styles. In addition, Wilson (1998) stated that literature on learners' learning styles has "unresolved issues, both theoretical and practical" (as cited in Obralić & Akbarov, 2012, p. 31). Therefore, it is crucial to define the concept of language learning styles and to provide an overview of relevant theories on language learning styles.

### 2.5.1 Definition of Language Learning Styles

There are various definitions and types of learning styles (Cassidy, 2004). Literature on learning styles has revealed the terms "learning style, cognitive style, personality type, sensory preference, modality and others" are applied quite loosely and usually "interchangeably" (Ehrman, Leaver, & Oxford, 2003, p. 314). For example, Dunn and Dunn (1979) defined learning style as a "term that describes the variations among learners in using one or more senses to understand, organise and retain experience" (as cited in Reid, 1987, p. 89). Besides, Fischer and Fischer (1979) defined style as "a pervasive quality in the learning strategies or the learning behaviour of an individual" despite the differences in content (as cited in Reid, 1987, p. 89). In addition, Honey and Mumford (1992) described learning styles as "a description of attitudes and behaviours" that affect one's method of learning (as cited in Al-Azawei, Al-Bermani, & Lundqvist, 2016, p. 111). Willing and Nunan (1993) defined learning style as "any individual learner's natural, habitual, and preferred ways of learning" (p. 1). Reid (1995) also defined "learning styles

as habitual and preferred ways of absorbing, processing, and retaining new information and skills" (as cited in Lincoln & Rademacher, 2006, p. 486).

Ehrman (1996, p. 163) indicates that "… learning styles are often linked with personality and therefore difficult to change" and Kinsella (1995) also shares the similar view that learning styles "persist regardless of teaching methods or content areas" (as cited in Sabeh, Bahous, Bacha, & Nabhani, 2011, p. 163). Kinsella (1995) viewed "learning styles might be genetic" (as cited in Lincoln & Rademacher, 2006, p. 486). Nevertheless, researchers (Price, Dunn, & Sanders, 1980; Reid, 1987) opined that learning styles could change when learners became older. According Ehrman and Oxford (1990), the concept of learning styles was based on at least three traditions, namely the study of perception and Gestalt psychology, ego psychology and the theories of Carl Jung. Learning styles denotes "preferred or habitual patterns of mental functioning and dealing with information" (Ehrman & Oxford, 1990, p. 311). Oxford (2003) further defines learning style as "an overall pattern that gives broad direction to learning and makes the same instructional method preferred by certain students and disliked by others" (p. 273). Rezaeinejad, Azizifar, & Gowhary (2015) regard learning styles as "cognitive, affective, and psychological behaviors" that are "relatively stable indicators of how learners perceive, interact with and respond to the learning environment" (p. 219). Zarei and Pourghasemian (2016) stated that perceptual styles include "both nature and nurture based manners and behaviors" whereby one can respond to his or her environment, either to modify or adapt for one's benefit (p. 181). Other scholars (Dunn, Dunn, & Price, 1975; Jhaish, 2010) also describe sensory or perceptual learning style is based on the physical environment, where learning occurs and employs senses to perceive data (as cited in Asadipiran, 2016).

Based on these descriptions, there were also common features of language learning styles. Most researchers shared the similar view that learning styles could be defined as the learner's natural and habitual preferred way of learning, applied unconsciously and could be stable. Reid (1995) viewed learning styles as internally based traits, unconsciously used by the students in their learning process and includes an array of cognitive, affective and physiological aspects. Reid (1987) also added that a student's learning style encompasses several unconscious attributes like comprehension, clarification, retrievability and retainment of new knowledge (as cited in Muniandy & Shuib, 2016, p. 4). She also stated that "learning style" refers to a person's general approach to learning and problem-solving. Reid postulates that learning style incorporates two domains, namely sensory/perceptual domain and social domain. Naserieh and Sarab (2013) also indicated Reid classified PLSP based on perceptual learning modalities and two sociological or social domains. According to Barbe & Milone, the sensory/perceptual domain was "the most intimate process associated with learning" within the cognitive domain (as cited in Rossi-Le, 1989, p. 14). Rossi-Le (1989) stated that the perceptual aspect of the second language learners are very important to the verbal and visual cues of a new system of communication. According to Rossi-Le (1989) further, the act of perception will create meaning to the "environmental stimulus and will result in sensation; then, through linkages established with the past experiences and familiar events, this new information could be stored in the short or long-term memory" (p. 15). This study adhered to the definition by Reid (1995) because this study employed Perceptual of Learning Style Preferences (PLSP, 1987) instrument. With this in view, the following section will continue to elaborate further the two different dimensions of learning styles, namely perceptual modality approach and social learning styles.

### 2.5.2 Perceptual Modality Approach and Social Learning Style Dimensions

Cognitive learning style, personality or affective learning styles, social learning styles and sensory/perceptual learning styles are the dimensions of learning styles deployed in language learning research (Fonseca-Mora, 2005). Hyland (2003) further indicates a large number of studies have focused on the three dimensions of learning styles, namely cognitive, affective and perceptual learning styles (as cited in Aliakbari & Tazik, 2011). La Lopa (2013) also addressed the notion of learning styles has derived from the research into cognitive styles. Witkin et al. (1971) viewed cognitive styles as "the characteristics, self-consistent models of functioning which individuals show in the perceptual and intellectual activities" (as cited in La Lopa, 2013, p. 357). These researchers had the consensus that sensory/perceptual could be one of the dimensions for language learning styles. Figure 2.3 illustrates both dimensions of learning styles embedded in this study, namely sensory/perceptual modality dimension and social interaction dimension.

According to Tai (2013), Reid's Perceptual Learning Style Preference Questionnaire (1987) was theoretically based on a perceptual modality approach. Such perceptual modality approach measured "one of the four basic perceptual learning modalities (visual, auditory, kinesthetic and tactile) and two social interaction factors (individual or group learning)" of learners (Tai, 2013, p. 262). In addition, Denig (2004) highlighted that perceptual learning styles theory is a "student-centred theory", and teaching process should avoid traditional methods and accommodate various types of learners (as cited in Baleghizadeh & Shayeghi, 2014, p. 255). In short, this study has applied the perceptual modality and social interaction dimensions in defining the learners' preferences of language learning styles based on Reid's Perceptual Learning Style Preferences instrument (PLSP, 1987).

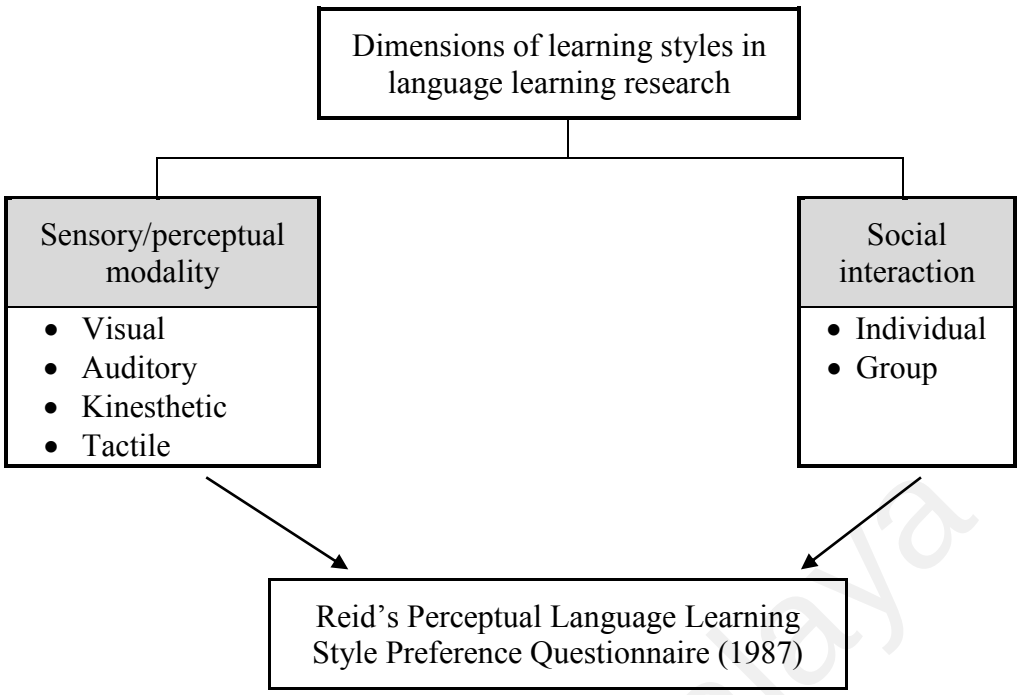



**Figure 2.3: Dimensions of learning styles underlying Reid's perceptual learning style preferences (Tai, 2013)**

Reid (1987) categorised perceptual learning styles preferences into visual learning style, auditory learning style, kinesthetic learning style, tactile learning style, group learning style and individual learning style. Visual learning style refers to learning through "seeing words in books, on the chalkboard and in workbooks", whereas auditory learning style as learning through "hearing from words spoken and from oral explanation" (Reid, 1998, p. 165). Kinesthetic learning style is defined as "learning through involved physically in classroom experiences" whereas tactile learning style indicates learning through "doing hands-on experiences with materials" (Reid, 1998, p. 166). Group learning style is learning through interaction "with at least one other students or more and individual learning is learning when he or she is alone" (Reid, 1998, p. 166). Learning through all the five senses is categorised as learning through perceptual modality. This perceptual modality approach was similar to the first stage of receiving phase in the diagram of psychological model of language learning style by Willing (1988) where the

language input is received through all the five sensory modality, that includes visual, auditory, kinesthetic or tactile sensory preferences (as cited in Tabanlioğlu, 2003, p. 29).

Other researchers, Nurul Amilin Razawi, Mazni Muslim, Sulia Masturina Che Razali, Norhayati Husin, and Nor Zaitolakma Abdul Samad (2011) further stated that sensory learning style was categorised into perceptual learning style and environment learning style. According to Nurul et al., perceptual learning style was an approach to learn through five senses (p. 180) and learners were categorised into auditory learner, visual learners, tactile learners, kinesthetic learner and haptic learners. These categories of learners are similar to the model of learning styles by Reid (1995) except for haptic learners. Similarly, Thang (2003) also highlighted that Reid was one of the first researchers who used sensory modes of preference to investigate the learning style preferences of ESL students in a tertiary setting in 1987.

Vaseghi, Ramezani, and Gholami (2012) share the similar view that Reid is the pioneer in investigating the perceptual learning style preferences of ESL/EFL students the university level. Moreover, Reid's PLSP was also normed on non-native speakers of English, with reliability and validity established on high intermediate or advanced ESL classes (DeCapua & Wintergrest, 2005). Researchers supported the use of Reid's PLSP because it was one of the better-known learning styles instruments in the ESL/EFL field for the non-native speakers of English (Chen, Lee, & Lin, 2010; DeCapua, & Wintergrest, 2005) and of high reliability (Aliakbari & Tazik, 2011; Karthigeyan & Nirmala, 2013; Moradkhan & Mirtaheri, 2011; Nosratinia & Soleimannejad, 2016; Peacock, 2001; Sarabi-Asiabar et al., 2015). In addition, Dunn and Dunn (1979) also recognised the wide use of PLSP by Reid (1995) in ESL or EFL contexts because it relates to observable actions of learning and hence is easier to operationalise (as cited in Baleghizadeh & Shayeghi, 2014, p. 256). A study by Ding and Lin (2012) indicated their study employed

PLSP because it measured the social aspect of learners and the dominant business instructional methods that included "lecture-based subjects, group-based discussions and project work, class-based presentations, etc." (p. 315).

In relation to these views on PLSP, this study has adapted PLSP questionnaire in identifying the perceptual learning style preferences of learners in a tertiary context. Since learning style variable is one crucial variable affecting second language learning, the next section will discuss the importance of studies on language learning styles.

### 2.5.3 Importance of Language Learning Style Research

Various researchers acknowledge the importance of investigating learners' learning styles in studies on second language learning (Afshar, Sohrabi, & Mohammadi, 2015; Gilakjani, 2012; Karabuga, 2015; Oxford & Ehrman, 1995; Zarifi & Mukundan, 2014). For example, Oxford (2002) revealed that knowing the learning styles of learners as one important and influential factor in learning a language. This claim seems to be agreed by other researchers (Karthigeyan & Nirmala, 2013; Nurul et al., 2011), whereby learning styles variable is considered one predominant factor that might contribute to the success of learning among learners. Furthermore, various studies shows the process of learning differs from an individual to another due to the occurrence of biological and psychological disparities (Muniandy & Shuib, 2016, p. 2). Moreover, Al-Hebaishi (2012) and Reiff (1992) also highlighted that learners might use their particular ways or styles based on their "backgrounds, capabilities, weaknesses, wants, characteristics, motivations and strategies towards learning" (as cited in Muniandy & Shuib, 2016, p. 2). Therefore, findings from language learning studies also provided a mean for the learners to learn the language actively and successfully as they will be more aware of their preferred learning styles and other available styles. Such awareness indirectly might encourage the learners

to take more responsibility of their learning and could result in better language learning outcome.

In addition, Anderson and Elloumi (2004) asserted that identifying learners' learning styles encouraged educational planners and teachers to provide relevant "educational support and supplies" (as cited in Moenikia & Zahed-Babelan, 2010, p. 1170). El-Hmoudova and Milkova (2015) also indicated that determining the learners' learning styles could reveal their strengths and limitations in the learning process. In addition, continuous research in the area of learning styles preferences is important due to the use of new technology and corresponding teaching styles to enhance the standard of teaching and learning environment (El-Hmoudova & Milkova, 2015).

In addition, Cassidy (2004) indicated studies on learning style were conducted in domains outside psychology such as medical and health care training, management, industry, vocational training and various settings and levels in the educational field. Even though learning style studies have been carried in the past forty years, it is still important to investigate the main "themes and issues on learning style and instruments used to measure learning styles" (Cassidy, 2004, p. 419). Cassidy addressed learning style as one crucial concept that could provide crucial insights on learning in academic and non-academic settings. Generally, learning style is perceived as the manner in which one will select or inclined to learn, and could affect the performance and achievement of learning outcomes (Cassidy, 2004).

In spite of the importance of learning styles variable in second language learning, students' learning style variable has been "ignored and is regarded as insignificant component in the learning process" (Mulalic, Shah, & Ahmad, 2009, p. 10; Vaseghi et al., 2012). Soureshjani and Naseri (2012) are also in line with this view. McLoughlin (1999) also stated "the learning style literature presents a confusing array of terms that

are similar, yet quite distinct" (p. 223). McLoughlin also indicated much empirical research showed that "learning styles can hinder academic performance in several aspects although little research has been done on the relationship between instructional design of learning materials and learning styles".

In addition, Charlesworth (2008) addressed that there are limited studies on learning styles related to cultural comporant. Investigating the cultural aspect of learners is considered necessary as language learning process has gone beyond formal classroom contexts and could include immediate environment of learners, including the learners' sociocultural context, which include the social and cultural aspects. Furthermore, the use of different instruments in studies related to the sociocultural aspect of learners restrains comparison between these research findings (Charlesworth, 2008). In addition, "lack of rigour in the sampling" prohibits any conclusions in such studies because there are no obvious indicators to what extent any socio-economic variables are investigated nor whether the individuals differ culturally or merely from various nationalities (Charlesworth, 2008, p. 115). In spite of these views, Charlesworth stated there was a relationship between culture and learning styles. This claim was in accordance with Hyland (1993) and Song and Oh (2011) who postulated culture was part of learning styles. Nevertheless, despite the importance of culture in second language learning, it is usually a neglected variable (Hyland, 1993). Moreover, Trommsdorf and Dasen (2001) indicated one must accept the connection between culture and learning if one views that culture was "a certain commonality of meaning, customs and rules (not a homogeneous entity) shared by a certain group of people and setting a complex framework for learning and development" (as cited in Charlesworth, 2008, p. 116). In other words, studies pertaining to learning styles are still recommended due to various limitations reported in past studies, for instance in the aspects of sampling process, instruments or data analysis. Besides, various definitions and theories of learning styles indirectly pointed that language

learning research could also be discussed from the psychological and sociocultural components. Hence, this study would continue to examine the perceptual learning styles preferences of learners in a tertiary context using Reid's PLSP questionnaire (1987) based on the psychological and sociocultural perspectives. The following section will continue to discuss past studies related to language learning styles.

### 2.5.4 Review of Past Studies on Overall Language Learning Styles

This section will elaborate past studies on the learners' overall language learning styles preferences in various contexts and sampling processes. Many reported studies revealed that the highest preferred language learning styles encompassed visual, kinesthetic, group, tactile, and auditory. For example, several studies (Asadipiran, 2016; Chen & Hung, 2012; Gilakjani, 2012; Karthigeyan & Nirmala, 2013; Obralić & Akbarov, 2012; Reid, 1996; Tabatabaei & Mashayekhi, 2013) showed that visual learning style is the predominant style in second language learning despite differences in instruments or learning contexts. For example, Reid's (1996) study revealed Asian students were found to highly preferred visual learning style. Similarly, visual learning style was the dominant learning style preference by Malaysian undergraduates (Al-Tamimi & Shuib, 2009; Amran, Bahry, Yusop, & Abdullah, 2010). Nevertheless, Al-Tamimi and Shuib suggested this study should be replicated among larger sample size in the same or other Malaysian universities due to its small sample size of 60 final year students and the first study limited to English majors. Additionally, the study by Amran et al. (2010) on 122 out of 200 non-science and technology students enrolled in the Faculty of Information Management in a Malaysian public university during semester 2009/2010 and employed Barsch Learning Style Inventory (BLSI) revealed that all students mostly preferred visual learning style and least preferred kinesthetic learning style irrespective of their gender.

On the contrary, some studies (Mohamad & Rajuddin, 2010; Mulalic et al., 2009; Mustaffa, 2007; Ong, Rajendram, & Yusof, 2006; Seifoori & Zarei, 2011; Zarei & Pourghasemian, 2016) revealed that kinesthetic learning style was the most preferred. Alkubaidi's (2014) study on 74 Saudi female undergraduates revealed these learners mostly preferred group style. Other studies (Akbarzadeh & Fatemipour, 2014; La & Ye, 2014; Siddique, Abbas, Riaz, & Nazir, 2014) also found learners mostly prefer tactile learning style. In addition, studies (Chen, Lee, & Lin, 2010; Rafique, 2016) also indicated auditory learning style as one of the highest preference styles for language learning. For example, Rafique's (2016) study revealed that graduates students mostly preferred auditory learning style and least preferred individual learning style. Another study by Sabeh et al.'s (2011) study on 103 Lebanese students in a university revealed these learners had major preferences for individual and group learning styles.

Moreover, reported studies (Balasubramaniam & Indhu, 2016; Chu, 2013; Lin & Shen, 1996; Mehrpour & Motlagh, 2015; Naserieh & Sarab, 2013; Whillier et al., 2014) also showed learners might prefer more than one learning style in learning a second language. For instance, Balasubramaniam and Indhu's (2016) study on 144 medical first year undergraduates showed 48% of these learners had unimodal learning style preferences (kinesthetic and auditory) whereas 52% of them were multimodal learners (kinesthetics and aural; visual, aural, kinesthetic). Likewise, a research undertaken by Lin and Shen (1996) on 947 junior college students from the first year to the third year from seven schools in Tainan area using PLSPQ revealed these students mostly preferred individual and group learning styles. Mehrpour and Motlagh's (2015) study on 154 Iranian EFL learners revealed that these learners most frequently employed visual and auditory learning styles. Similarly, Naserieh and Sarab's (2013) study on 138 graduates in Iran found that learners highly preferred kinesthetic and tactile learning styles. Whillier et al.'s

study among 407 undergraduates and postgraduates revealed these students were multimodal learners and significantly preferred kinesthetic learning style.

Past literature also reported the learners' least preferred learning styles in language learning. These styles include individual learning style (Muniandy & Shuib, 2016; Riazi & Riasati, 2007), individual and group learning styles (Chu, 2013), visual and individual learning styles (Mulalic et al., 2009; Tai, 2013), kinesthetic learning style (Karthigeyan & Nirmala, 2013), group learning style (Naserieh & Sarab, 2013; Obralić & Akbarov, 2012) and tactile learning style (Alkubaidi, 2014). For example, Tai's (2013) study on 165 adult adult EFL students reported individual and visual learning styles were the least preferred learning styles. Riazi and Riasati's (2007) study which employed the adopted Brindley (1984)'s survey further supported that students disliked to work individually, However, Karthigeyan and Nirmala's (2013) study found that kinesthetic learning style was least preferred among the students. On the contrary, Naserieh and Sarab's (2013) study on 138 graduate students revealed that they disliked group learning style. Likewise, a study by Obralić and Akbarov (2012) among 34 learners showed they least preferred group learning style. Alkubaidi's (2014) study found females undergraduates in Saudi least preferred tactile learning style.

Literature has also indicated numerous studies (Chen & Hung, 2012; Gohar & Sadeghi, 2015; Karthigeyan & Nirmala, 2013; Naserieh & Sarab, 2013; Reid, 1996; Tai, 2013) on language learning styles utilized either one or more quantitative or qualitative method(s). Limited studies on language learning styles (Karabuga, 2015; Mustaffa, 2007; Obralić & Akbarov, 2012; Rafique, 2016) are found to incorporate both quantitative and qualitative methods in a single research. For example, Karabuga's (2015) study on 132 prep-class EFL students and 15 teachers employed two survey instruments and interview method to identify whether there was a mismatch between the students' learning styles and the

teachers' learning styles. Likewise, Obralić and Akbarov (2012) conducted a study among 34 undergraduates at University of Sarajevo using PLSP survey (quantitative) and field notes (qualitative) in order to identify the learning style preferences of these learners. Another study by Mustaffa (2007) also found to incorporate questionnaire, journals writing and observations methods in order to identify whether the less proficient undergraduates were able to stretch beyond their preferred styles in language learning.

In addition, limited studies in the field of language learning styles and strategies were reported in tertiary context in Malaysia and adult learners. Hence, this study aimed to incorporate both methods, namely quantitative and qualitative methods to identify the overall perceptual learning style preferences and language learning strategies and the factors that could influence the styles and strategies respectively based on the psychological and sociocultural contexts. The following section will discuss some factors that might influence learners' language learning styles of learners based on prior research and the current study.

### 2.5.5 Factors Affecting Language Learning Styles

Many factors are perceived to influence the language learning style preferences of learners. Among these factors are gender (Aliakbari & Tazik, 2011; Alkubaidi, 2014; Vaseghi et al., 2012), rural or urban location (Karthigeyan & Nirmala, 2013; Nurul Amilin Razawi et al., 2011), cross-cultural differences (Ramlan & Maarof, 2014; Shah, Ismail, & Ismail, 2012; Wang & Greenwood, 2015), language proficiency (Kim & Kim, 2014; Soureshjani & Naseri, 2012; Srijongjai, 2011), academic achievement (Abidin, Rezaee, Abdullah, & Singh, 2011; Moayyeri, 2015; Park, 1997b; Rezaeinejad et al., 2015; Soureshjani & Naseri, 2012), fields of study or academic majors (Al Hamdani, 2015;

Babacan, 2015; Moayyeri, 2015); personality (Li & He, 2016; Salehi, Hedjazi, & Mahmood, 2014) and past learning experiences (Khamkhien, 2012; Sabeh et al., 2011).

However, this section will only discuss further some prominent factors that are perceived to influence the learning style preferences of learners in the current study based on the psychological and sociocultural perspectives. Gender, language proficiency, personality are among the psychological aspects of learners that could influence their language learning style preferences whereas cross-cultural differences and past learning experiences are related to the sociocultural aspects of learners in language learning style preferences.

#### 2.5.5.1 Gender

Gender is one factor that could affect the learning styles of language learners. Sunderland (2000) stated that general learning patterns or styles could be related to the superior performance of girls in language learning and achievement. Nevertheless, there are mixed conclusions on the findings on language learning style preferences based on gender. Past studies (Aliakbari & Tazik, 2011; Alkubaidi, 2014; Isemonger & Sheppard, 2003; Lin & Shen, 1996; Lincoln & Rademacher, 2006; Vaseghi et al., 2012) reported male and female learners differed in their language learning styles. For example, Aliakbari and Tazik's study on 105 EFL students at a university in Iran showed female learners prompt to be more of VTK (visual/tactile/kinesthetic) learners. In contrast, the research by Alkubaidi revealed 74 Saudi female undergraduates were mostly auditory and group learners. Other study by Lincoln and Rademacher on 69 ESL students in community colleges using VARK questionnaire, that tested some aspects of PSLP questionnaire like visual, aural and kinesthetic perceptual learning styles also revealed females chose auditory and multimodal learning styles while males preferred note taking.

A research by Isemonger and Sheppard using PLSP questionnaire among the ESL Korean students revealed that females preferred kinesthetic and group learning styles. Vaseghi et al.'s study showed males had the tendency for peer interaction and kinesthetic activities rather than learning by themselves. On the contrary, females required higher temperatures and motivated by themselves, parents and teachers. In addition, females were also found be more persistent and responsible or able to confront in the learning process.

Reported findings (Isemonger & Sheppard, 2003; Lin & Shen, 1996; Moradkhan & Mirtaheri, 2011) also indicate female learners have greater learning styles compared to male learners. For example, Isemonger and Sheppard's study revealed females highly preferred kinesthetic learning style compared to males. Similarly, a study among 1000 EFL junior college students in the Tainan area using PLSP questionnaire revealed female learners had greater preferences for various learning styles compared to male learners (Lin & Shen, 1996). Likewise, Moradkhan and Mirtaheri's study on 112 students and 23 teachers using PLSP questionnaire revealed females had higher visual learning style preferences compared to male learners. This study also showed male and female learners demonstrated major preferences for kinesthetic learning style (Moradkhan & Mirtaheri, 2011).

On the other hand, fewer studies (Karthigeyan & Nirmala, 2013; Mulalic et al., 2009) indicated males had more learning style preferences compared to females. For example, a study by Karthigeyan and Nirmala on among 582 higher secondary school students in Salem district of Tamilnade state utilising PLSP questionnaire revealed boys had higher visual learning style preferences compared to girls. Similarly, Mulalic et al.'s study on 160 students from UNITEN revealed males significantly preferred more auditory and kinesthetic learning styles compared to females.

Previous studies (Aliakbari & Tazik, 2011; Barmeyer, 2004; Lin & Shen, 1996; Lincoln & Rademacher, 2006; Radwan, 2014; Vaseghi et al., 2012) also found gender significantly affected learners' language learning styles. On the contrary, some studies (Bidabadi & Yamat, 2010; Demirkan & Demirbas, 2010; Karthigeyan & Nirmala, 2013; Moradkhan & Mirtaheri, 2011; Obralić & Akbarov, 2012; Shuib & Azizan, 2015; Zokaee et al., 2012) revealed no significant differences in language learning style preferences based on gender.

#### 2.5.5.2 Cross-cultural Differences

Cross-cultural differences might also influence the language learning style preferences of learners. Wang and Greenwood (2015) echoed the view that culture could influence learners' language learning styles. Moreover, Ramlan and Maarof (2014) stated second language learning or acquisition may be influenced by cultural diversity. Ethnic group and socioeconomic status are usually used to denote the confusing phrases of "cultural differences" or "individual with various backgrounds" (Ramlan & Maarof, 2014, p. 287). These cultural backgrounds could be determined by "socialisation through institutions such as family, friends, school, universities and work" (Barmeyer, 2004, p. 586). Geertz (1973) and Hofsted (1980) stated these cultural factors may help to develop the learning styles and to create "a system of shared values, assumptions and knowledge" (as cited in Barmeyer, 2004, p. 586). Barmeyer also stressed that understanding the learners' preferred learning style and the opposite would assist the learners to understand their weaknesses and to provide them the opportunity to become more proficient in other modes. Such observation on the learners' strength of their learning styles will serve as guide to cross-cultural training and management situations (Barmeyer, 2004).

A few studies (Obralić & Akbarov, 2012; Park, 1997a, 2002; Shah, Ismail, & Ismail, 2012; Tabatabaei & Mashayekhi, 2013; Wu & Alrabah, 2009) revealed cross-cultural differences affected the learners' language learning styles. Wu and Alrabah stated that there was an increase of evidence, which showed strong relationship between students' cultural backgrounds and their preferred learning styles and multiples intelligences. For example, Tabatabaei and Mashayekhi's study on 131 pre-university students revealed Chinese learners mostly preferred visual and auditory learning styles. Such study also found Indian learners least preferred kinesthetic learning style compared to other ethnicity.

Past findings showed that there were statistical significant differences for learning styles based on cultural differences among secondary learners (Olivares-Cuhat, 2011; Park, 2000, 2001, 2002) and undergraduates (Barmeyer, 2004; Ding & Lin, 2012; Sivanandan, Letchumanan, Ramayah, Nasrijal, & Lim, 2014; Song & Oh, 2011; Wu & Alrabah, 2009). For example, a study on 353 undergraduates, which employed Learning Style Inventory (LSI) found significant differences of German students' learning style preferences in comparison to French and French-Canadian students (Barmeyer, 2004). Other study by Ding and Lin on 172 business undergraduates in Netherlands unveiled Asian learners possessed significant positive and moderate correlations between their English language learning and their visual, tactile, auditory and kinesthetic learning styles. Likewise, significant differences were found between learning style differences and various ethnic groups among the 66 mainstream students in a high poverty, urban middle school of Midwestern city (Olivares-Cuhat, 2011). In addition, Sivanandan et al.'s study revealed cultural background significantly influenced the aural, visual and kinesthetic learning styles preferences of the 406 Malaysian and non-Malaysian business students.

Conversely, other studies also indicated cross-cultural differences had partial (Obralić & Akbarov, 2012; Park, 1997b) or full effect (Gürses & Bouvet, 2016) on the learners' language learning styles. For instance, a study on 1283 secondary students using PLSP revealed no significant difference between auditory learning style and various ethnic groups (Park, 1997b). However, these Korean, Mexican, and Armenian-American students differed statistically in visual learning style in comparison to the Anglo students. Similarly, a different study showed no significant differences in the learning style preferences between the Australian and Turkish subgroups on 91 students at two universities (Gürses & Bouvet, 2016). A study by Obralić and Akbarov also revealed Bosnian and Turkish students at University of Sarajevo did not differ significantly in their visual and auditory learning styles despite their significant differences in tactile, kinesthetic and individual learning styles.

#### 2.5.5.3 Language Proficiency

English language proficiency or language achievement could be one crucial factor that could influence the learners' language learning styles. A number of studies (Barzegar & Tazalli, 2013; Kim & Kim, 2014) confirm that there are differences between learners' learning style preferences based on their language proficiency. For example, a study by Barzegar and Tazalli on 60 female advanced learners of a language institute indicated a positive correlation between kinesthetic and group learning styles and students' language achievement. Another study on 2682 Korean EFL students revealed visual and auditory styles had positive correlation with English language proficiency while kinesthetic style portrayed negative correlation with their English language proficiency (Kim & Kim, 2014). In addition, Kim and Kim highlighted visual learning style had greatest influence on English language proficiency successfully.

Despite differences of styles portrayed by learners based on their language proficiency, numerous studies (Ghadirzadeh, Hashtroudi, & Shokri, 2013; Moradkhan & Mirtaheri, 2011; Soureshjani & Naseri, 2012; Srijongjai, 2011; Zhang & Evans, 2013) showed that no significant differences between language learning styles and their language achievement. For instance, Moradkhan and Mirtaheri's study on Iranian EFL learners revealed no significant difference between learning style and language proficiency level. A study by Srijongjai on 88 second-year English major at a university in Thailand revealed that there were no significant differences of learning styles and their language achievements. Another research by Ghadirzadeh et al. (2013) on 260 Iranian undergraduates and employed the adapted version of SILL, PLSPQ and Sakai and Kikuchi's Demotivation Questionnaire of English Language Learning (DQELL) showed that students' learning style preferences did not differ statistically based on their language achievements. Zhang and Evans's study on 500 EFL students in a university in China using Oxford's SAS indicated no significant differences among the three different proficiency groups and their learning styles. These reported results might be due to learning styles is considered as "value-neutral in relation to learning outcomes or proficiency" as well as different learning style preferences with their "own inherent strengths and weaknesses" of these differed learning styles which may affect the learning tasks or learning contexts (Zhang & Evans, 2013, p. 65). In other words, most reported studies seem to highlight that there are no significant differences between the learners' language proficiency and their preferred learning styles.

#### 2.5.5.4 Personality

Learners' personality traits is one factor that may shape the self-regulated learning process of an individual (Ghyasi, Yazdani, & Farsani, 2013). In addition, Heinström (2000) indicated personality traits could be manifested in learning styles, followed by learning strategies that will influence the learning outcome (as cited in Salehi et al., 2014). In addition, Richard, Platt, and Platt (1992) defined personality as "those aspects of an individual's behaviour, attitudes, beliefs, thought, actions and feelings which are seen as typical and distinctive of that person" and learning styles is an aspect of personality (as cited in Griffiths, 2013, pp. 29-30). Similarly, Mariani (1996) supported that personality traits will influence the learning style preferences of learners and indirectly the use of learning strategies. Hence, learners' personality traits factor has attracted the attention of many EFL/ESL researchers to this factor in language learning studies.

For example, the study by Salehi et al. (2014) on 260 students studying agriculture, which employed Personality Traits Inventory (NEO-FFI) and Learning Styles Inventory (LSI) found a consistent positive relation between the big five personality traits and their learning styles except for neuroticim. On the contrary, the research by Chen and Hung (2012) on 364 senior students from rural areas in southern Taiwan found that perceptual learning style preferences did not differ statistically with any of the four categories of Myerrs personality types. Another study by Li and He (2016) on 190 EFL learners revealed that the learners who were more sensitive to ambiguities in English preferred more of tactile and kinesthetic learning styles instead of visual and auditory learning styles. Nevertheless, this study indicated auditory learning styles had higher significant influence on the ambiguity tolerance of learners compared to kinesthetic, tactile and visual learning styles. In other words, previous studies' findings also showed inconsistency towards the influence of personality traits and the learners' learning styles.

#### 2.5.5.5 Past Learning Experiences

Past learning experiences is one important factor that could influence the learners' learning style preferences (Khamkhien, 2012). Fazzaro and Martin (2004) asserted that the "learners' past life experiences and the needs of their present environment" may influence the development of learning styles (as cited in Khamkhien, 2012, p. 65). Khamkhien also supported the view that limited studies on language learning styles and their learning experiences were reported. For example, Khamkhien's study on 262 Thai university students quantitatively revealed learners who had studied English more than 12 years preferred individual learning style compared to those who learned English for a shorter time. Nevertheless, further statistical test confirmed learning experiences did not affect their learning style preferences. Other study by Sabeh et al. (2011) found the Lebanese students who studied English for 13–16 years highly preferred kinesthetic learning style followed by auditory learning style and least preferred individual learning style. In short, these studies measured the past experiences of learners based on the number of years they spent in learning English quantitatively. Perhaps, qualitative method should also be incorporated besides the quantitative method to further determine the details on how these learning experiences could influence the learners' learning styles. After reviewing various factors that might influence learners' learning styles preferences, the following section will continue to elaborate another important variable in second language learning, namely language learning strategies.

## 2.6 Background on Language Learning Strategies

This section will begin by introducing the background on language learning strategies, followed by various definitions on language learning strategies, the classification of language learning strategies and the perspectives on second language learning strategies. It will also review the use of Strategy Inventory for Language Learning (SILL) besides

discussing factors related to language learning strategies based on previous studies and the current study.

Grenfell and Macaro (2011) viewed language learning strategy research began between the 1970s and 1980s. However, "the roots of language learning strategy research can be traced back to 1970s and beyond" (Grenfell, 2007, p. 9). It started with the article by Joan Rubin (1975) entitled "What the Good Language Learner Can Teach Us" (as cited in Grenfell & Macaro, 2011, p.11), which elaborated the techniques and approaches employed by successful language learners. Other researchers (Naiman, 1978; Stern, 1975) also conducted similar research within the area of learning a language successfully (as cited in Grenfell & Macaro, 2011). In other words, language learning strategies are associated with the research undertaken over the past thirty years into what makes the good language learner, with the belief that what strategies makes the learners successful in language learning strategies could be taught to the rest (Grenfell & Erler, 2007).

Such study on the good language learner in the mid-1970 led to more research on learner strategy in 1980 (Richards, 2002). Early claims of language learning research (LLS) emphasised the psychological character of the learner, which later was labelled as "psychotypology" (Grenfell & Macaro, 2011, p. 14). However, other variables such as "proficiency level, affect and motivation" were linked to the use of strategies besides focusing on the differences in cognitive style (Grenfell & Macaro, 2011, p. 15).

As explained earlier, language learning was considered as a "psychological phenomenon" until 1970 (Grenfell & Macaro, 2011, p. 10). Behaviourist theories affected the language laboratory in 1960s as learning a language could manipulate the psychological aspects of an individual (Grenfell & Macaro, 2011). They also indicated the Chomskyan revolution, starting from the 1950s, could not really change this asocial view of language learning. Universal grammar concerns an ideal speaker and a perfect

competence. Dell Hymes later acknowledged the importance of "socially conditioned aspects of language – feasibility, possibility, potentiality and appropriacy" (p. 10) in the context of teaching and learning in the 1960s to further improve the concept of universal grammar (as cited in Grenfell & Macaro, 2011, p. 10). The word 'strategy' also became important and well known during this period because it consisted a broad range of linguistic behaviour in second language learning (Grenfell & Macaro, 2011).

During the 1970s, the notion of 'strategy' became "part of the conceptual vocabulary of applied linguistics" (Grenfell & Macaro, 2011, p. 10). Besides, Krashen (1984) also debated "adults use common strategies for second language learning" (as cited in Grenfell & Macaro, 2011, p. 10). On the other hand, Færch and Kasper (1983) focused on the communication strategies in relation to the development of a second language (as cited in Grenfell & Macaro, 2011, p. 10). Hence, based on the various approaches to strategic linguistic behaviour, Grenfell and Macaro (2011) concluded that second language learning is "inherently problematic" and no obvious relationship between psychological and the social context on strategic behaviour could be determined (p. 11).

Despite various theoretical foundations in second language learning, the most common one employed by numerous researchers (Anderson, 1983; Johnson, 1996; McLaughlin, 1987; O'Malley & Chamot, 1990) in discussing strategies for language learning is the various "forms to information theory approaches in cognition" (as cited in McDonough, 1999, p. 3). Lan (2005) seemed to support that there was an obvious link between language learning strategies (LLSs)/ learning strategies (LSs) and information processing theory in cognitive science for both areas of educational psychology and the second or foreign language acquisition.

Besides, recent studies on second language learning strategies have shifted to focus on its process rather than the product (Oxford, 1990a) and on learner-centered approaches instead of teacher-centered (Tamada, 1996; Wenden, 1991, as cited in Zokaee et al., 2012). Hence, it is still crucial to investigate the use of language learning strategies from the individual differences and the process of language learning, including its immediate environment.

### 2.6.1 Definition of Language Learning Strategies

A pool of literature has revealed a "bewildering array of different terms ("strategies", "tactics", "techniques", "learning behaviors"), of various usages of terms and overlap with related terms (such as "communication strategies" and "learning styles" (Griffiths, 2003, p. 368). The term "strategy" originated from Greek term strategia, which meant "generalship or the art of the war" (Oxford, 1990a, p. 7). Despite various terminologies deployed to describe learning strategies, past literature revealed the common terms used by various scholars. These terms include "learner strategies" (Wenden & Rubin, 1987), "learning strategies" (Chamot & O'Malley, 1994; O'Malley & Chamot, 1990) and "language learning strategies" (Oxford, 1990) (as cited in Lessard-Clouston, 1997, p. 2).

Various attempts also have been introduced to define strategies within theories of cognition (Macaro, 2006). For example, Tarone (1983) described learning strategies as "an attempt to develop linguistic and sociolinguistic competence in the target language" (as cited in Lessard-Clouston, 1997, p. 2). Rubin (1987) further identified learning strategies as the "strategies which contribute to the development of the language system which the learner constructs and affect learning directly" (as cited in Lessard-Clouston, 1997, p. 2). Wenden (1987) defined strategy research as "part of the general area of research on mental processes and structures that constitute the field of cognitive science"

(p. 6). Oxford and Nyikos (1989) also indicated that “learning strategies are readily teachable” (p. 291). In addition, O’ Malley and Chamot (1990) described learning strategies as "the special thoughts or behaviours that individuals use to help them comprehend, learn, or retain new information" (p. 1).

Rigney’s (1978) early definition of learning strategies as “the operations employed by the learner for acquiring, retaining, retrieving or performing” has provided the basis of definitions for strategies proposed by prominent researchers (O’Malley et al., 1985; Oxford, 1990) in the area of language learning (as cited in Griffiths, 2003, p. 368). For example, this study adopted the definition by Oxford (1990a) who defined learning strategies as the “operations employed by the learner to aid the acquisition, storage, retrieval and use of information” (p. 8). Such definition was further improved to describe strategies as “the specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations” (Oxford, 1990a, p. 8). Cohen (1998) and Oxford (1990; 1996) also added another dimension of consciousness in defining strategies because they considered learners were able to determine their choice of learning strategies (as cited in Griffiths, 2003).

In a more recent review on the definition of language learner strategies, Oxford and Schramm (2007) further described language learner strategies from two perspectives, namely psychological and sociocultural perspectives. Based on psychological perspectives, $L_2$ learner strategy is “a specific plan, action, behaviour, step or technique that individual learners use, with some degree of consciousness, to improve their progress in developing skills in a second or foreign language” (Oxford & Schramm, 2007, pp. 47–48). These strategies can assist “the internalization, storage, retrieval, or use of the new language” (p. 48) and to enhance learner autonomy.

On the other hand, based on sociocultural perspective, one of the most common definitions for $L_2$ learner strategy is a "learner's socially mediated plan or action to meet a goal, which is related directly or indirectly to second language learning" (Oxford & Schramm, 2007, p. 48). Vygotsky (1978, 1979) dialogic model assumes that an $L_2$ learner strategy is "the higher order mental function such as analysis, synthesis, planning or evaluation, develop by L2 learner with the aid of more capable person in a sociocultural context" (as cited in Oxford & Schramm, 2007, p. 48). They further indicated second language learner strategy is a "socioculturally based action pattern" (p. 48) to attain the goal of second language learning.

Zuengler and Miller (2006) viewed the psychological and sociocultural perspectives are 'incommensurable' and are considered as 'parellel worlds' (as cited in Oxford & Schramm, 2007, pp. 35 & 50). Canagarajah (2006) further stated that the ontological and epistemological underpinning the two perspectives are presumed to be 'irreconcilable' (as cited in Oxford & Schramm, 2007, p. 28). However, the synergy of these two perspectives might contribute to "a more powerful and useful theory and research on learner strategies" (Oxford & Schramm, 2007, p. 49).

Despite various systems to categorise language learning strategies, the concept of language learning strategies has been variously explained as "elusive" (Wenden, 1987), "fuzzy" (Ellis, 1994), "no consensus" (O'Malley et al., 1985) and "conflicting views" (Cohen, 1998) (as cited in Griffiths, 2003, p. 368). There are still numerous conceptual problems in defining, for example the difference between "mental and behavioural, general and specific or conscious and unconscious strategies" (Trendak, 2014, p. 70). Trendak stated that it was impossible to provide a general definition of a language learning strategy even as of today. Nevertheless, this study would adhere to the definition of language learning strategies based on psychological and sociocultural perspectives on

language learning, as learning is now not only based on learners itself but it is also extended to the social aspect of the learners which included the immediate environment. The following section will further explain the classification of language learning strategies.

### 2.6.2 Classification of Language Learning Strategies

Various definitions were used to classify learning strategies. For example, scholars (Gan, Humphreys, & Hamp-Lyon, 2004; Purpura, 1997) classified strategies to include cognitive strategies (as cited in Rivera-Mills & Plonsky, 2007). Other researchers (O'Malley et al, 1985) added new category of strategy, namely socioaffective strategies that included classroom interactions and the learning environment (as cited in Rivera-Mills & Plonsky, 2007, p. 536). In addition, researchers (Bialystok, 1990; Brown, 2000; Weaver & Cohen, 1998) further classified strategies based on their purpose to enhance and improve second language (as cited in Rivera-Mills & Plonsky, 2007). Likewse, other scholars (Dornyei, 1995; Macaro, 2001) further introduced communication strategies (Rivera-Mills & Plonsky, 2007).

Despite the difficulty to achieve a general consensus on the definitions of language learning strategies, two main theoretical assumptions that underlay the contemporary ideas on language learning strategies were proposed (Griffiths & Parr, 2001). McLaughlin (1978) stated these two assumptions as follows: (i) students can consciously influence their own learning and (ii) language learning process is a cognitive process, similar to other types of learning (as cited in Griffiths & Parr, 2001, p. 249). Similarly, Oxford's (1990b) definition of strategies is in accordance with McLaughlin's assumption, in which language learning strategies are consciously used in the learners' learning process and

comprise the cognitive aspect related information processing theory. Oxford further classified the learning strategies based on these assumptions.

Oxford's classification of strategies still provide the most comprehensive hierarchy of learning strategies up till now (Mohammadi & Alizadeh, 2014; Nisbet, Tindall, & Arroyo, 2005; Rivera-Mills & Plonsky, 2007). Likewise, Jones (1998) also echoed that Oxford's classification is the most comprehensive and detail (as cited in Liu, 2010). Mohammadi, Reza, Koosha, and Shahsavari (2013) also indicated many scholars supported Oxford's taxonomy of language learning strategies. In regards to this view, this study adhered to the classification of Oxford's (1990a) language learning strategies. Oxford classified these strategies into direct and indirect strategies as shown in Figure 2.4 (p. 16).

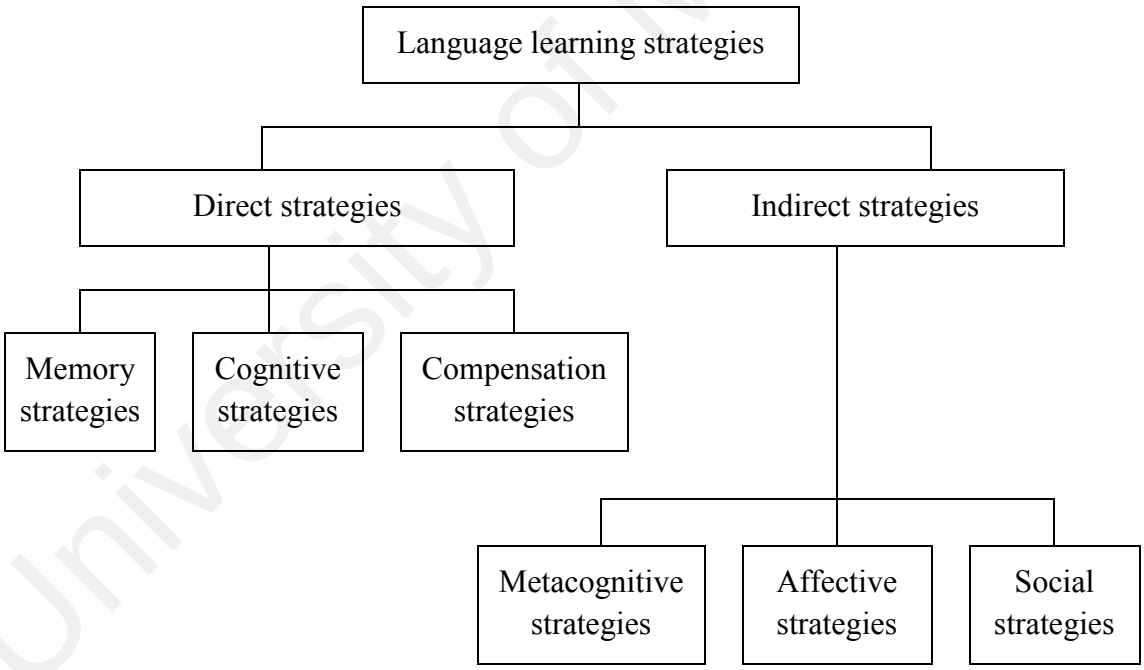



**Figure 2.4: Overview of strategy system (Oxford, 1990a)**

Directs strategies are strategies that "require mental processing of the language" (Oxford, 1990a, p. 37). Oxford (1990a) classifies these strategies as memory strategies, cognitive strategies and compensation strategies. Memory strategies, such as "creating mental linkages, applying images and sounds, reviewing well and employing action" (p.

38) enable learners to store and retrieve new information. On the contrary, Oxford (1990a) describes cognitive strategies as the various means to "understand and produce new language" (p. 37). These strategies consist "practicing, receiving and sending messages, analysing and reasoning and creating structure for input and output" (Oxford, 1990a, p. 38). Compensation strategies, that include "guessing intelligently and overcoming limitations in speaking and writing" (p. 38) enable learners to use the language in spite of the "large gaps in knowledge" (p. 37).

Indirect strategies are strategies used to "support and manage language learning without directly involving the target language" (Oxford, 1990a, p. 135). Oxford classified these indirect strategies into metacognitive, affective and social strategies. Metacognitive strategies enable the learners to "control their own cognition" by "coordinating the learning process using functions such as centering, arranging, planning and evaluating" (Oxford, 1990a, p. 136). Affective strategies assist learners to "regulate emotions, motivations, and attitudes" (Oxford, 1990a, p. 136). Social strategies that include "asking questions, cooperating with others and emphatising with others" (p. 136) encourage learners to interact with others to learn (Oxford, 1990a). Having described the classification of language learning strategies, the following section will elaborate the psychological and sociocultural perspectives of language learners strategies used in this study.

### 2.6.3 Perspectives of Language Learner Strategies

Language learner strategies (LLS) could be discussed from the psychological and the sociocultural perspectives (Oxford & Schramm, 2007) as portrayed in Figure 2.6. "Both psychological perspectives and sociocultural perspectives have emphasised on self-regulation, which resulted in "strategy instruction" (Oxford & Schramm, 2007, p. 50).

Based on the psychological perspective, L2 learner strategy is defined as "a specific plan, action, behaviour, step, or technique that individual learners use, with some degree of consciousness, to improve their progress in developing skills in a second or foreign language" (Oxford & Schramm, 2007, pp. 47-48). These strategies are used to facilitate the "internalization, storage, retrieval, or use of the new language and are tools for greater learner autonomy" (Oxford & Schramm, 2007, p. 48).

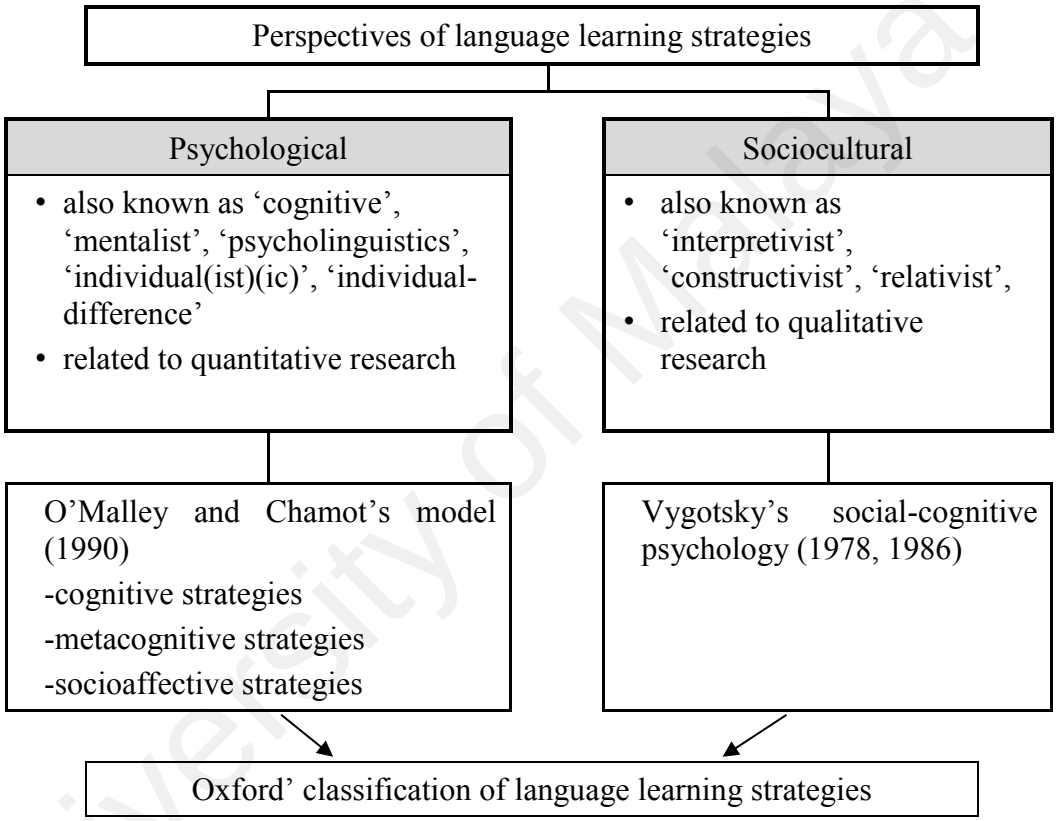



**Figure 2.5: Language learning strategies based on psychological and sociocultural perspectives (Oxford & Schramm, 2007)**

With reference to Figure 2.5, the psychological perspective in the L2 language field is sometimes called 'cognitive', 'mentalist', psycholinguistics', 'individual(ist)(ic)' or 'individual-difference' (Oxford & Schramm, 2007, p. 48). Oxford and Schramm explained the term 'psychological' was used because it was "broader than cognitive", and also consisted metacognitive (regulation and control) and affective (emotion- and motivation-related) aspects besides being more "descriptive than terms like individual

difference" (pp. 48-49). They also stated such psychological perspective was associated with quantitative research (Oxford & Schramm, 2007). Such psychological perspective constituted O'Malley and Chamot's model (1990). They classified strategies into cognitive, metacognitive and socioaffective strategies (Figure 2.5).

On the contrary, the sociocultural perspective begins with "the society (its culture) as the fundamental unit" (Oxford & Schramm, 2007, p. 48). Oxford and Schramm further indicated "the ongoing mediation of the social to the individual" is the implicit process of the sociocultural perspective (Oxford & Schramm, 2007, p. 48). The most common definition for second language learner strategy is the "learner's socially mediated plan or action to meet a goal, which is related directly or indirectly to L2 learning" (Oxford & Schramm, 2007, p. 48). They further revealed the sociocultural perspective was related to qualitative research and was sometimes called 'interpretivist', 'constructivist' or 'relativist' (Figure 2.6). Such sociocultural perspectives constituted Vygotsky's social cognitive theory. Vygotsky's theory aimed to develop an "independent, self-regulated and problem solving individual" as the outcome of learning (Oxford, 1999b, p. 111).

As described earlier, O'Malley and Chamot's model (1990) and Vygotsky's social cognitive theory (1978, 1986, as cited in Oxford, 1999b) were the underlying theories that formed Oxford's classification of language learning strategies. The following section will continue to further elaborate the model by O'Malley and Chamot (1990) under psychological views of self-regulation and Vygotsky's social-cognitive psychology under social-cultural views on self-regulations.

#### 2.6.3.1 Psychological Views of Self-regulation

Language learning strategies begin with many studies by researchers (O'Malley & Chamot, 1995; Stern & Rubin, 1975) and other researchers who acknowledge cognitive psychology in language learning (as cited in Lavasani & Faryadress, 2011) Cognitive psychology which started in 1960s has changed the way of research on language learning strategies' conception about teaching (Lavasani & Faryadress, 2011). Learning process is not merely a passive learning process; instead, learners learn in an active and creative manner based on cognitive framework (Lavasani & Faryadress, 2011, p. 192).

Zimmerman (2000, 2001) described psychologically-based self-regulation models consists four components, namely strategy, a feedback loop by which learners consciously monitor the effectiveness of their strategies and make changes, motivation to self-regulate and deeper reasons to why students want to self-regulate (as cited in Oxford & Schramm, 2007, p. 50). Despite many models proposed for L2 learning based on psychological approach to self-regulation in the L2 field, O'Malley and Chamot's model (1990) is the most important psychological approach to self-regulation (Oxford & Schramm, 2007). Learning is viewed as a cognitive activity, which includes the "mental processing of information and thoughts" (O'Malley & Chamot, as cited in Lavasani & Faryadress, p. 192). In other words, such learning emphasises cognitive information processing.

Khezrlou (2012) also supported that Oxford's classification of language learning strategies was based on O' Malley and Chamot's model (1990). Liu (2010) further stated that O' Malley and Chamot's model integrates academic language development, content area instruction and explicit instruction in learning strategies for both content and language acquisition (p. 103). Purpura (1999) further explained that O Malley and Chamot's model explains strategy use based on the information processing theory. Such

framework by O' Malley and Chamot of learning strategies in second language acquisition was based on "Anderson's (1981, 1983, 1985) Adaptive Control of Thought (ACT) theoretical model of language processing in cognitive psychology" (Purpura, 1999, p. 34).

Purpura added that Anderson's theory of learning elaborated how information was represented in memory and differentiated between procedural and declarative knowledge. In addition, Anderson elaborated the process of skill acquisition into "the cognitive stage, the associate stage, and autonomous stage" (Purpura, 1999, p. 34). Besides, Anderson also elaborated the process of language production and comprehension (Purpura, 1999). Language production model is divided into "a construction stage, a transformation stage and an execution stage" whereas his language comprehension model includes "perceptual processing, parsing and utilization" (Purpura, 1999, p. 34). Furthermore, the ACT model (1983) provides a useful framework to analyse the use of learning strategies by students because individuals are said to "process information and the thoughts involved in these cognitive activies" that are known as "mental processes (Rao, 2012, p. 3). This ACT model also comprised the metacognitive strategies and cognitive process strategies, similar to the classification of strategies proposed by O' Malley and Chamot (1990) and Oxford (1990a).

In short, the classification of strategies by Oxford (1990a) using the information processing theory based on the Anderson's ACT model. O'Malley and Chamot (1990) also further classified learner strategies within the cognitive theory based on the framework by Anderson's ACT model and Stages of Skill Acquisition model and their own research findings (as cited in Lan, 2005). They further explained that "the role of learning strategies in the acquisition of information generally can be understood by references to the information processing framework for learning" (as cited in Lan, 2005,

p. 17). Similarly, Nyikos and Oxford (1993), who originally used information processing theory as the early framework to investigate how learners process "new information via prior knowledge, schemata or scripts" (p. 11), later, expanded the theoretical foundation of LLS to include social-cognitive theory of Vygotsky (as cited in Lan, 2005, p. 27).

#### 2.6.3.2 Sociocultural Views of Self-regulation

Vygotsky's social-cognitive psychology, also known as social constructivism played an important role to facilitate second and foreign language acquisition (Lan, 2005). McIntyre (1994) suggested the use of strategy relies on the knowledge of appropriate strategies, having a reason to use them and having nothing to prevent their use under this social-pyschological model (as cited in McIntyre & Noels, 1996).

According to Oxford (1999), the concept of self-regulation is the "heart of the social-cognitive theory of Vygotsky" (p. 111). Oxford (1999) also stated the goal of learning is to develop an independent, self-regulated, problem-solving individual in Vygotsky's theory. Such learning outcome could occur through the assistance of "more capable others", like "teachers, more competent peers, parents or others" and known as scaffolding (p. 111). Besides, Vygotsky's theory also included the zone of proximal development (ZPD), in which the more competent others would assist the learners to achieve optimal performance (Oxford, 1999, p. 112). Such ZPD concept emphasised the importance of social aspect of "social cognition" (Oxford, 1999, p. 112). Oxford also indicated that learning strategies was part of Vygotsky's psychological work on self-regulation even though he did not use the term 'strategies'. Vygotsky's dialogic model (Vygotsky 1978, 1979) is the best-known sociocultural model of self-regulation and 'strategy instruction', used by various researchers in L2 learning and language learner strategies (as cited in Oxford & Schramm, 2007).

Vygotsky (1978, 1979) did not use the term 'strategies', but "discussed a number of higher order functions, that might be defined as strategies" (as cited in Oxford & Schramm, 2007, p. 52). Oxford (1999) described "the higher order functions of analysing and synthesizing by Vygotsky as cognitive strategies" whereas the "the higher order functions of planning, monitoring, and evaluation" are labelled as metacognitive strategies (as cited in Oxford & Schramm, 2007, p. 52).

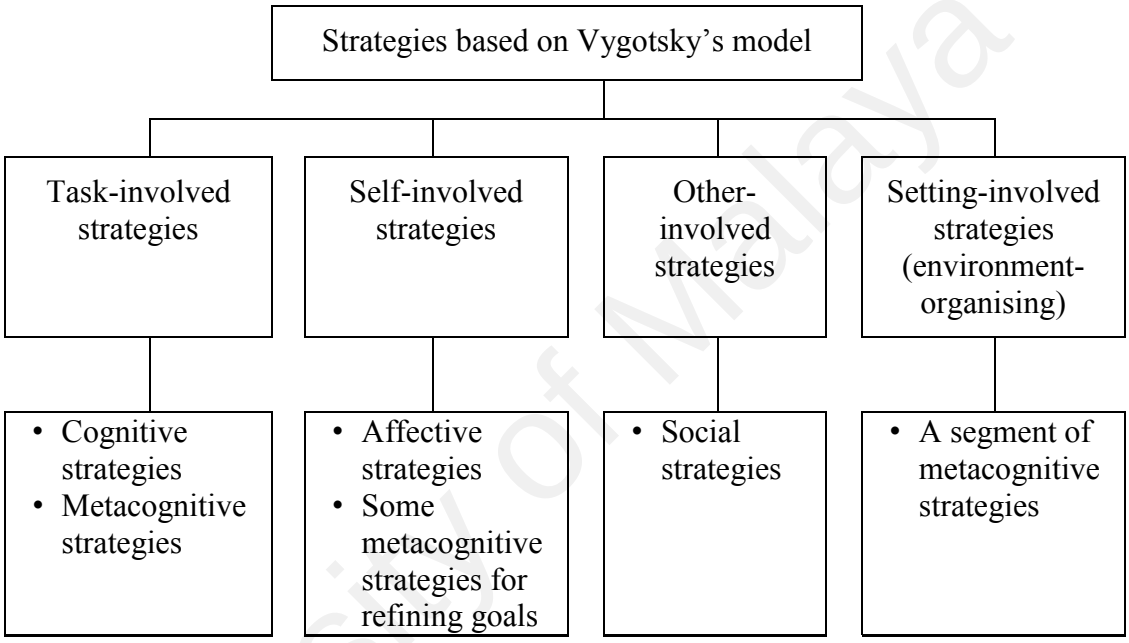



**Figure 2.6: Categories of strategies based on Vygotsky's model (Oxford & Schramm, 2007)**

As depicted in Figure 2.6, McCaslin and Hickey (2001) illustrated Vygotsky's model consists four categories of strategies (as cited in Oxford & Schramm, 2007, p. 53). These categories include (a) task-involved strategies, including cognitive and metacognitive (b) self-involved strategies, including volitional-motivational and emotion-control strategies, known as affective strategies, plus some metacognitive strategies for refining goals (c) other-involved strategies, known as social strategies; and (d) setting-involved (environment-organising) strategies, viewed as a segment of metacognitive strategies (as cited in Oxford & Schramm, 2007, p. 53).

Other than the three general categories of learning strategies (metacognitive, cognitive and social strategies), Oxford (1990, 1996) also suggested three other kinds of strategies; namely affective strategies, compensatory strategies and memory strategies, could be included under language learner self-regulation strategy (as cited in Oxford, 1999b, p. 112). According to Oxford (1999), learning strategies are crucial to learner autonomy and self-regulation, which later are found to have a great impact on the outcomes of learning.

Based on earlier discussion, second language learning could be discussed from the two perspectives, namely psychological and sociocultural perspectives (Figure 2.8). Under psychological perspective, it emphasises on individual differences and learning is viewed as a cognitive activity (Oxford & Schramm, 2007). Past studies on second language learning has mostly focused on the cognitive aspects of learners (Gao, 2006). However, according to Watson-Gegeo, current research acknowledged that second language learning should go beyond the formal classroom setting and occurs everywhere (as cited in Gao, 2006). According to Oxford and Schramm (2007), from the sociocultural perspective, second language learning process includes an ongoing social mediation to each individual. Hence, this study will explore the perceptual learning style preferences and language learning strategies from the psychological and sociocultural perspectives as shown in Figure 2.8. The importance of psychological and sociocultural perspectives in the studies of language learning strategies all around the world should be emphasised (Oxford & Schramm, 2007).

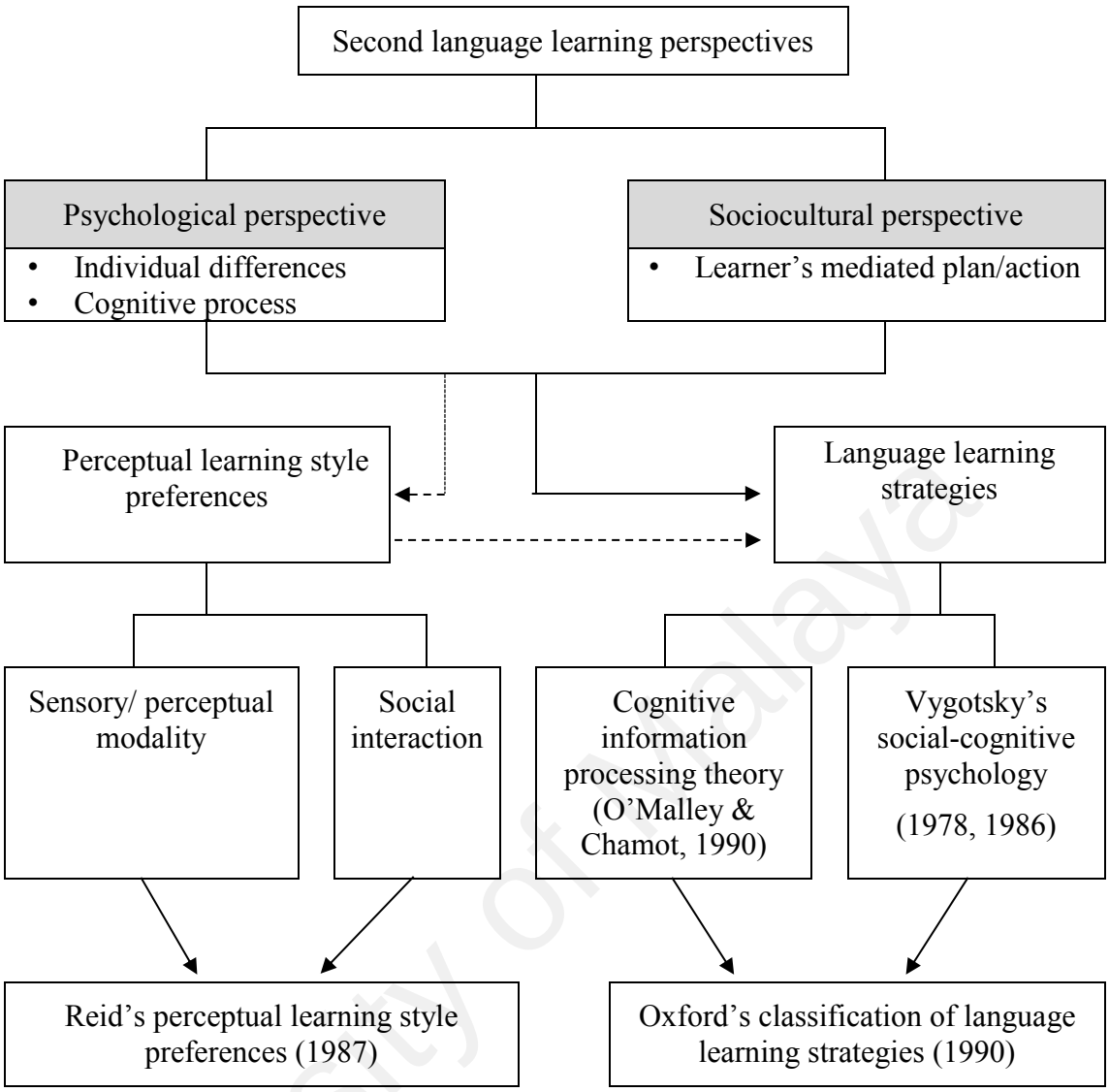



**Figure 2.7: Researcher's proposed conceptual framework in this study (Oxford & Schramm, 2007; Tai, 2013)**

As shown in Figure 2.7, language learning strategies incorporated cognitive information-processing theory by O'Malley and Chamot (1990) and Vygotsky's social-cognitive psychology (1987, 1986). Both of these theories serve as the basis for the classification of Oxford's (1990) language learning strategies. On the other hand, perceptual learning style preferences incorporated the sensory or perceptual modality approach and social interaction dimensions as only these two dimensions were included in the construction of Reid's Perceptual Language Learning Style Preferences (1987) questionnaire (Figure 2.7).

In addition, this framework also aims to explore whether language learning styles could be discussed from the sociocultural perspectives as language learning styles because various definition on language learning styles denotes clearly that styles might include the cognitive component. For example, Reid (1995) defined learning styles as an internally based trait, unconsciously used by the students in their learning process and includes an array of cognitive, affective and physiological aspects. Furthermore, Hyland (2003) further highlighted that numerous studies have focused on the three dimensions of learning styles, namely cognitive, affective and perceptual learning styles (as cited in Aliakbari & Tazik, 2011). Based on this definition and dimensions of learning styles, it clearly indicated that language learning styles include the psychological perspectives. However, there is still an uncertainty whether learning styles could also be discussed from the sociocultural perspective. The researcher opined that there might be a possibility to include the discussion of language learning styles from the sociocultural perspectives because Reid (1987) and Oxford (2011) claimed that learning styles are not fixed modes of behaviour and styles can be extended or modified based on various situations and tasks (as cited in Hatami, 2012, p. 488).

In addition, this framework as proposed by the researcher aimed to further confirm the nature of relationship between perceptual learning style preferences and language learning strategies as illustrated in Figure 2.8 as limited studies were conducted to examine the nature of the relationship between language learning styles and strategies. Having discussed the proposed framework of this study based on different perspectives of language learning styles and strategies, the following section will continue to reveal the importance of language learning strategies research.

### 2.6.4 Importance of Language Learning Strategies Research

Numerous researchers seem to support that learning strategies are important in the process of language learning (Altunay, 2014; Oxford, 1989a). Despite the importance of learning strategies in second language learning, five problematic issues were found in area of learning strategies and various means were used to tackle these issues (Cohen, 1998). Firstly, there are no clear distinction among strategies, sub-strategies, techniques and tactics. Based on the literature, different researchers use different terms in order to refer to language learning like technique by Stern (1983), tactic by Seliger (1984) and move by Sarig (1987) (as cited in Cohen, 1998). In order to solve this problem, all of these words are categorised as strategies, with the assumption that "there is a continuum from the broadest categories to the most specific or low-level" (Cohen, 1998, p. 10). Secondly, there is no consensus as to whether strategies need to conscious in order to be known as strategies (Cohen, 1998). Thirdly, the use of different criteria to classify language learning strategies resulted in inconsistencies and mismatches across existing taxonomies and other categorization (Cohen, 1998). Fourthly, the term strategic competence has extended beyond its original meaning (Cohen, 1998). Lastly, there is lack of linking of learning strategies and learning styles in the language learning field. According to Cohen (1998), learning strategies cannot operate by them, but rather are linked to the learners' underlying learning styles and other personality-related variables in the learner. Oxford (1989) further indicated learning strategies are also related to differences in "demographic factors like sex, age and ethnicity" (as cited in Cohen, 1998, p. 15).

In addition, Grenfell and Macaro (2011) revealed there is a shift in language learning strategy research. Language learning strategy include the strategic reaction of learner towards a contextualised task or series of task rather than investigating the general profile of the good language learner (Grenfell & Macaro, 2011). Secondly, it considers the

quality of strategy use rather than the interest in the quantity of strategy use. According to Grenfell and Macaro (2011), there is a lack of research to answer the question 'why do certain learners behave in a certain ways' (p. 28) and the level of students chosen is usually those that have achieved a certain standard of academic performance. Furthermore, Grenfell and Macaro indicated language learning strategy research is "still quite an immature field" (p. 28).

Furthermore, Hardan (2013) also stated that there was a prominent shift within the area of teaching and learning with much emphasis on learners and learning over the last twenty years. In line with this new shift, more studies that focus on learners, the strategies that they use and the contexts where learning occurs are conducted and this move further supports the Murat's (2002) hypothesis to focus on the process of learning in language learning studies (as cited in Hardan, 2013, p. 1717).

Studies have repeated revealed that appropriate use of strategies might be related to achievement and proficiency (Fewell, 2010; Hardan, 2013). Other researchers (Green & Oxford, 1995; Khaldieh, 2000, & Wharton, 2000) also mentioned that language learning achievement or proficiency is consistently associated with strategy use (as cited in Suwanarak, 2012, p. 3). Researchers has also determined achievement or proficiency using various methods, namely self-ratings (Oxford & Nyikos, 1989), language achievement tests (Philips, 1991), entrance and placement examinations, language course grades (Mullin, 1992); years of language study (Watanabe, 1990) and career status (Ehrman & Oxford, 1989) (as cited in Suwanarak, 2012, p. 3). Hence, using the appropriate strategies might be affecting the language achievement of learners. Nevertheless, despite the fact that language learning achievement or proficiency is always linked to strategy use, MacIntryre (2000) emphasised that it is difficult to identify whether

strategy use influences learning achievement or learning achievement affect the choice of strategy (as cited in Suwanarak, 2012, p. 4).

Numerous studies have proven that study related to strategies use is still necessary due to the differences in results and research gaps in this area of language learning research. As such, this study will also identify the overall language learning strategies of undergraduates in the tertiary context from the perspectives of psychological and sociocultural. In addition, this study also attempted to explore the possible factors that might influence the learners' language learning strategies choice qualitatively. Hence, further details on the specific strategies employed by learners could be compared and reported against the quantitative findings on strategies. The next section will discuss past studies related to the overall language learning strategies of learners and factors that could affect language learning strategies.

### 2.6.5 Studies on Overall Use of Language Learning Strategies (SILL)

Numerous studies had employed Oxford's Strategy Inventory for Language Learning (SILL, 1990) in the research on language learning strategies. Most of these studies reported on how frequent these strategies were employed in learning a second or foreign language. Majority of the past reported findings (Abbasian, Khajavi, & Mardani, 2012; Alhaisoni, 2012; Aliakbari & Hayatzadeh, 2008; Al-Shaboul, Asassfeh, & Alshboul, 2010; Bonyadi, Nikou, & Shahbaz, 2012; Goh & Kwah, 1997; Ismail & Khatib, 2013; Kavasoglu, 2009; Mohammadi et al., 2013; Nisbet et al., 2005; Platsidou & Sipitanou, 2015; Tan & Kaur, 2015; Yunus, Sulaiman, & Embi, 2013) revealed metacognitive strategies as the highest strategies employed by learners.

On the other hand, other studies (Afshar et al., 2015; Lai, 2009; Tam, 2013; Yilmaz, 2010) also reported compensatory strategies as the most employed strategies whereas affective strategies were the least preferred strategies. However, some studies (Hakan, Aydin, & Bulent, 2015; Razak, Ismail, Aziz, & Babikkoi, 2012) also found affective strategies to be the most preferred strategies by learners, which yielded contradicting findings with most past studies (Abbasian et al., 2012; Afshar et al., 2015; Ismail & Khatib, 2013) that indicated affective strategies were learners' least used strategies. Social strategies are also found to be highest employed in Wharton's (2000) study.

Some other researchers' findings (Alhaisoni, 2012; Bonyadi et al., 2012; Kavasoglu, 2009; Tan & Kaur, 2015; Yunus et al., 2013) also showed most learners employed more of indirect strategies if compared to direct strategies. For example, the research by Tan and Kaur among undergraduates from the School of the Humanities, *Universiti Sains Malaysia* found these learners employed more indirect strategies than direct strategies despite their high use of both categories of strategies.

Past literature also describes the frequency use of language learning strategies ranging from high (Bonyadi et al., 2012; Tan & Kaur, 2015; Yunus et al., 2013), medium to high (Deneme, 2008; Kavasoglu, 2009), medium (Pawlak, 2013; Platsidou & Sipitanou, 2015; Wharton, 2000) and low to medium (Alhaisoni, 2012). Other researchers (Hakan et al., 2015; Nisbet et al, 2005) also indicate the significant correlations among the components of language learning strategies by Oxford (1990b). For example, Hakan et al.' study on 120 undergraduates in a university at Turkey revealed significant positive correlations among the components of language learning strategies. Similarly, the study by Nisbet et al. on 168 third year English majors' Chinese university students indicated significant correlations among the six categories of learning strategies with one another and with the total learning strategies score.

After elaborating the patterns of overall preferred language learning strategies, the following section will continue to reveal some of the factors that could affect the choice of language learning strategies based on past literature and findings of this study.

### 2.6.6 Factors Affecting Language Learning Strategies

Various factors are influencing the deployment of strategies among the learners. Among these include gender (Hashemi, 2011; Pawlak, 2013; Platsidou & Sipitanou, 2015), academic majors (Mochizuki, 1999; Peacock & Ho, 2003; Ras, 2013), motivation (Mehrpour & Motlagh, 2015; Mochizuki, 1999; Oxford & Nyikos, 1989), language proficiency (Kunasaraphan, 2015; Platsidou & Sipitanou, 2015; Savas & Erol, 2015), nationality or cultural differences (Goh & Kwah, 1997; Nguyen & Godwyll, 2010; Ras, 2013), language learning environment (Asgari & Mustapha, 2011; Kameli, Mostapha, & Baki, 2012) and parents' socioeconomic status (Babikkoi & Razak, 2014; Ras, 2013). However, the following section will describe the prominent factors influencing the strategies as reported in the current study. Factors, namely gender, motivation, language proficiency could be classified under psychological perspective whereas language learning environment and parents' socioeconomic could be discussed from the sociocultural perspective.

#### 2.6.6.1 Gender

Gender is an important factor that affects language learning (Gu, 2002). Gender includes as "the social, cultural and psychological constructs" and denotes males and females (Mcelhninny, 2003, as cited in Ho & Ng, 2016, p. 4). The term "gender" refers to "masculine and feminine categories constructed in society" (Sadiqi, as cited in Kayaoğlu, 2012, p. 14). Based on the description of the term "gender", numerous studies

used this term to refer to male and female learners. Empirical studies on the influence of gender on strategy use often produced inconsistent results (Chamot, 2004; Gu, 2002). Ellis (2002) stated females usually portrayed more positive attitudes in language learning and resulted in higher success in second language learning (as cited in Yunus et al., 2013).

Reported results indicate differences in types of language learning strategies used based on gender. For example, a study by Hashemi (2011) among 150 EFL students at Islamic Azad University using SILL revealed female learners had higher use of affective and compensation strategies compared to male learners. Hong-Nam and Leavell's (2006) study on of 55 ESL students from various culture and linguistics backgrounds in a college Intensive English Program (IEP) revealed females had frequent and higher use of affective and social strategies compared to males. These learners also highly employed metacognitive strategies and least used of affective and memory strategies.

In most studies (Al-Shaboul et al., 2010; Green & Oxford, 1995; Kavasoglu, 2009; Pawlak, 2013; Platsidou & Sipitanou, 2015; Razak et al., 2012; Yunus et al., 2013; Zeynali, 2012), females were reported to employ more strategies than males. Nevertheless, in some studies (Abbasian et al., 2012; Aliakbari & Hayatzadeh, 2008; Hakan et al., 2015; Ras, 2013; Wharton, 2000), male learners were sometimes found to employed more strategies as compared to female learners.

On the contrary, Tuncer's study (2009) showed gender did not have much influence on the use of strategies. This study found only a small difference in term of strategies used based on gender. This finding contradicted the beliefs by Coleman (1997) in which females generally employed more learning strategies in relation to their "greater integrative motivation and more positive attitudes" (as cited in Tuncer, 2009, p. 854). In addition, Wharton (2000) indicated "gender-related differences generally are probably

due to a combination of socialisation and physiology" (p. 235). Hence, this view might possibly explain why gender had not much influence of language learning strategies use.

Most studies (Abbasian et al., 2012; Alhaisoni, 2012; Bonyadi et al., 2012; Hakan et al., 2015; Ehrman & Oxford, 1989; Goh & Kwah, 1997; Hashim & Sahil, 1994; Kavasoglu, 2009; Pawlak, 2013; Zeynali, 2012) also reported significant differences for some of the language learning strategies based on gender. Nevertheless, a study by Razak et al. (2012) reported significant differences for all the language learning strategies based on gender. On the other hand, other studies (Abbasian et al., 2012; Aliakbari & Hayatzadeh, 2008; Ismail & Khatib, 2013; Ko, 2011; McMullen, 2009; Nisbet et al., 2005; Wharton, 2000; Zokaee et al, 2012) reported gender did not have statistical significant differences on the language learning strategies employed by learners.

#### 2.6.6.2 Motivation

Motivation is also a factor that could affect the choice of language learning strategies (Mehrpour & Motlagh, 2015; Mochizuki, 1999; Oxford & Nyikos, 1989; Wharton, 2000). Richards and Schmidt (2002) described motivation is the "combination of the individuals' attitudes, willingness and desires to expand efforts" in second language learning (as cited in Mehrpour & Motlagh, 2015, p. 147). Motivated students were found to use strategies more frequently and the degree of motivation had highest significant main effect on the use of language learning strategies based on findings from past studies (Mochizuki, 1999; Oxford & Nyikos, 1989; Šafranj, 2013; Wharton, 2000).

#### 2.6.6.3 Language Proficiency

Another prominent factor that could affect the choice of language learning strategies is language proficiency or language achievement. Some studies (Al-Shaboul et al., 2010; Embi et al., 2001; Griffiths, 2003; Hong-Nam & Leavell, 2006; Jie & Xiaoqing, 2006; Kunasaraphan, 2015; Mochizuki, 1999; Platsidou & Sipitanou, 2015; Savas & Erol, 2015; Wong, 2012; Yang, 2007; Yilmaz, 2010; Zhang & Xiao, 2006) revealed students with higher language proficiency or higher language achievement were found to employ more language learning strategies. In addition, reported findings (Gerami & Baighlou, 2011; Hong-Nam & Leavell, 2006; Salahshour, Sharifi, & Salahshour, 2013) showed students with learners with higher language proficiency preferred mostly metacognitive strategies.

Studies also highlighted the relationship between language learning strategies and language proficiency. Most studies (Gharbavi & Mousavi, 2012; Madhumathi, Ramani, & Prema, 2014; Park, 1997a; Rahimi, Riazi, & Saif, 2008; Tam, 2013; Zhang & Xiao, 2006) have found a linear relationship between language proficiency and language learning strategies. Other studies (Hong-Nam & Leavell, 2006; Philips 1991, as cited in Oxford, 1996b) also found a curvilinear relationship between language learning strategies and their language proficiency. A curvilinear relationship is the situation if one variable increases, so does the other variable, but only up to a certain limit, after which, as one variable continues to increase, the other decreases. For example, Gharbavi and Mousavi's study on 90 university students at Iran found a direct and strong relationship between the learners' language proficiency and their strategies used. Other study by Madhumathi et al. on 60 below average Indian ESL undergraduates at South India found a linear relationship between their low proficiency and their overall language learning strategies. Rahimi et al also found out that there were linear relationship between language proficiency and overall use of language learning strategies.

Park (1997a) study's among 322 university students in Korea revealed using SILL revealed that there were linear relationship between language learning strategies and second language proficiency. In addition, this study also found all the six categories of language learning strategies had significant correlation with TOEFL scores. Cognitive and social strategies were found to more predictive of TOEFL scores compared to the other four strategies categories (Park, 1997a). Similarly, Tam's (2013) study on 50 first year students from University of Hong Kong demonstrated positive correlations between compensation, cognitive and social strategies and their language proficiency. The research by Zhang and Xiao (2006) also revealed that 550 tertiary level non-English majors using SILL and the Language Learning Motivation Questionnaire also showed learners' learning strategies correlated with EFL proficiency except for cognitive strategies. In addition, Hong-Nam and Leavell's (2006) study on 55 ESL students from various culture and linguistics backgrounds in a college Intensive English Program (IEP) revealed a curvilinear relationship between language strategy use and English proficiency.

A more detailed analysis of past findings indicated significant differences between the overall language learning strategies and language proficiency or academic achievement (Afshar, Tofighi, & Hamazavi, 2016; Alhaisoni, 2012; Griffiths, 2003; Lai, 2009; Park, 1997a; Platsidou & Sipitanou, 2015; Su, 2005; Wong, 2012). On the contrary, some studies (Afshar et al., 2015; Al-Shaboul et al., 2010; Ghadirzadeh et al., 2013; Khandari, Setiyadi, & Nurweni, 2015; Kunasaraphan, 2015; Magogwe & Oliver, 2007; Shmais, 2003; Wharton, 2000; Yilmaz, 2010) showed only certain language learning strategies had significant differences with language proficiency.

Moreover, other studies (Fewell, 2010; Ismail & Khatib, 2013; Kiram, Sulaiman, Swanto, & Din, 2014; Tezcan & Deneme, 2016) indicated no significant effect on the use of overall strategies based on language proficiency. For example, Fewell's (2010) study on 56 first-year Japanese college students found that learners utilized less language learning strategies as their English language proficiency increased. Likewise, Ismail and Khatib's (2013) study on 190 students in a Foundation Program of the United Arab Emirates University using translated version of SILL revealed no significant effect between proficiency level and the use of overall and individual strategy. Similarly, the research by Kiram et al., (2014) on 56 pre-university science students in *Universiti Malaysia Sabah*, Malaysia also revealed no significant between the overall language learning strategies and their language proficiency. In addition, other empirical studies (Magogwe & Oliver, 2007; Savas & Erol, 2015; Tsutsui, Ueda, & Nakano, 2005) also revealed language achievement or proficiency had no significant difference on the use of some language learning strategies.

#### 2.6.6.4 Language Learning Environment

Since language is "socially mediated and context dependent", learners' use of language learning strategies could change based on the environment (Hong-Nam & Leavell, 2007, p. 71) on the choice of vocabulary learning strategies on the ESL university learners. Language learning environment also might influence the language learning performance of learners (Asgari & Mustapha, 2011). Language learning environment could be divided into formal and informal language. Formal language learning environment could denote the classroom, teachers and peer in influencing the use of language learning strategies by learners (Kameli, Mostapha, & Baki, 2012). The informal language learning environment could refer to home environment. For example, Asgari and Mustapha's (2011) study revealed that the learner's home environment did not support the use of strategies in

learning new words, as both her parents were uneducated. However, another learner in the same study revealed that their parents did encourage them to learn English by sending them to private tuitions. As for formal language learning environment, Kameli et al. found that "teaching methods, the level of encouragement students received, peers' negative and positive behaviors, classroom's activity and textbooks" had a profound effect on the choice of vocabulary learning strategies (p. 23).

#### 2.6.6.5 Parents' Socioeconomic Status

There are various ways to define socioeconomic status. Hess, Markson, and Stein (1988) described socioeconomic status as "a measure based on a combination of income, occupational prestige, and education" (as cited in Tam, 2013, p. 10). Likewise, Akram and Ghani (2013) also described that socioeconomic status could be measured by income, parents' level of education and occupation. Home environment, which is also influenced by parents' education, job, attention and income is also labelled as socioeconomic status (Akram & Ghani, 2013). Limited studies were reported on the influence of parents' socioeconomic status in the choice of language learning strategies (Tam, 2013).

A number of studies showed that parents' income could influence the choice of language learning strategies. For example, the outstanding university students with parents from higher income category demonstrated better use of learning strategies (Ras, 2013). A study by Babikkoi and Razak (2014) on 559 secondary school students also showed that there was a correlation between parents' socioeconomic status and the choice of memory, cognitive and compensation strategies.

## 2.7 Importance of Language Learning Styles and Language Learning Strategies

Various researchers (Chen et al., 2010; Moenikia & Zahed-Babelan, 2010) have agreed that language learning styles and language learning strategies are among the crucial variables that might affect the second language learning performance. Griffiths and Oxford (2014) also reviewed that language learning strategies was still "a valid area of research because the formation of strong research connection was greatly connected with the amount of research contributed to the existing body of literature" (as cited in Tan & Kaur, 2015, p. 18). Such studies will continue to "build a stronger foundation of usable knowledge" in this particular area (Tan & Kaur, 2015, p. 18). Tan and Kaur (2015) further indicated lack of studies on undergraduates' language learning strategies in Malaysian public universities, especially in English majors. Most reported studies have focused on secondary schools students (Teh, Embi, Yusoff, & Mahamod, 2009; Babikkoi & Razak, 2014; Razak et al., 2012; Subramaniam & Palanisamy, 2014) and primary school students (Kaur & Embi, 2011).

Furthermore, Zhong (2015) also indicated strategy use would enhance the proficiency of learners and resulted in a more use of strategies. Hakan et al. (2015) indicated language learning strategies played a prominent role to facilitate the understanding of language learning processes and the skills that learners develop in learning a foreign or second language. Additionally, Hakan et al. stated language learning strategies could enhance academic achievement. Besides, knowing the learning style preferences of learners is equally important compared to language learning strategies. Anderson and Elloumi (2004) supported identification of learner's learning styles may assist the "educational planners and teachers to provide necessary educational support and supplies" (as cited in Moenikia & Zahed-Babelan, 2010, p. 1170). In other words, language learning strategies and language learning styles are important variables to could affect the learners' language learning process.

Past literature has indicated the relationship between language learning styles and language learning strategies. Despite the differences between learning styles and learning strategies, these two terms are related to one another in terms of cognitive and affective elements and could predict learners' language proficiency (Li & Qin, 2006). Furthermore, Brown (1994) further pointed that learning strategies did not operate by themselves; instead, they were linked directly to the learner's innate learning styles and other personality-related factors. Similarly, Oxford (1990) described learning style as "the general inclination of learners to employ certain learning strategies while avoiding others" (as cited in Li & Qin, 2006, p. 68). Oxford (1990) also viewed that learners' learning styles may determine the use of language learning strategies (as cited in Levine, Reves, & Leaver, 1996). Likewise, Cohen (2003) stressed the deployment of strategies by learners were influenced by their learning styles. Learning styles are described as the "underlying or internal construct" and learning strategies are known as the more "outward" manifestation of learning styles (Oxford, 1996a, p. 37).

Moreover, various empirical studies (Carson & Longhini, 2002; Ehrman & Oxford, 1990; Li & Qin, 2006; Littlemore, 2001; Moenikia & Zahed-Babelan, 2010; Oxford, 1996a), had shown that learning styles might significantly influence on the choice of language learning strategies despite the differences of instruments and contexts in conducting these studies. For example, Oxford, Ehrman, and Lavine (1991) suggested the strong relationships between the use of learning strategy and sensory preferences, an aspect of learning style (as cited in Oxford, 1996a, p. 36). Such relationship served as the partial evidence of the construct validity of SILL (Oxford, 1996a, p. 36). Similarly, Li and Qin's study (2006) also confirmed such significant influence of learning styles on the learners' language learning strategies. Oxford (2002) further confirmed that language learning style as one factor that might affect the choice of second language strategies.

Oxford further explained that students might have the tendency to apply strategies related to their preferred styles if given a choice.

Griffiths (2013) also supported learning style is one possible contributor to different choices of strategies use. Such view was in accordance with Boström (2004) who supported learning strategies not merely rely on, but also included learning styles (as cited in Boström & Lassen, 2006, p.186). Boström's finding confirmed that learning style-based methods were the crucial aspects of their learning process and they were able to use the strategies given and develop new strategies. In addition, Boström proposed that further research was needed to find out the complex relationships between choice of strategies, use of strategies and successful learning.

Researchers have found a statistically link between students' L2 learning strategies and their underlying learning styles (Ely, 1989; Erhman & Oxford, 1990). These styles are often directly related to learners' culturally inculcated values (Oxford, 2002). Oxford (2005) further emphasised learning styles and strategies were the main factors in determining how the learners learn a second language or foreign language (as cited in Weng, 2012, p. 231). Li and Qin (2006) also echoed that learning styles was an influential factor of strategy use.

In addition, Rivera-Mills and Plonsky (2007) also supported learner's styles were closely related to the appropriate or inappropriate use of learning strategies. Carson and Longhini (2002) and Fan (2003) indicated styles were assumed "to be relatively permanent characteristics of an individual" whereas strategy type and use would be based on various factors like "amount of language learning experience, levels of metalinguistic awareness and attitude toward the learning task" (as cited in Rivera-Mills & Plonsky, 2007, p. 540). Styles are "set in the student" while strategies "provide a more promising prospect in terms of teachability and potential for improvement" (Rivera-Mills &

Plonsky, 2007, p. 540). Cohen (1998) further supported "strategies do not function independently of styles" (as cited in Rivera-Mills & Plonsky, 2007, p. 540).

Researchers also claimed that strategies were related to learning styles and specific syllabus and curriculum plans (Grenfell & Erler, 2007). In addition, learning style preferences usually help to shape the learners' choice of learning strategies (Nam & Oxford, 1998). Besides, various researchers (Ehrman, 1996; Oxford et al., 1991; Reid, 1995, 1997) have affirmed that appropriate understanding of the learning styles and choosing the learning strategies that matches the learning style will determine the success of foreign or second language development (as cited in Nam & Oxford, 1998, p. 53 ).

Since language learning styles and strategies are two important variables that might influence second language learning, more investigations are required to determine the precise roles of styles and strategies (Moenikia & Zahed-Babelan, 2010). Despite the influence of learning styles on the choices for language learning strategy, numerous studies had examined language learning styles and strategies variables separately (Uhrig, 2015). Furthermore, most studies on learning styles and strategies were not in the context of language learning and focus on self-reported surveys to identify the styles and strategies. Limited studies were found to investigate of learning styles on strategy use in an EFL context, especially for university learners (Weng, 2012). Likewise, lack of studies on perceptual learning style preferences and language learning strategies are found across different cultures (Chen & Hung, 2012).

Hence, based on the discussions above, this study investigated the relationship between perceptual learning style preferences and language learning strategies besides exploring the factors that might influence these styles and strategies of the first year undergraduates in a Malaysian public university based on the psychological and sociocultural perspectives by incorporating the quantitative and qualitative methods. The

following section will discuss past studies on language learning styles and language learning strategies.

## 2.8 Research on Language Learning Styles and Language Learning Strategies

There were studies (Ghadirzadeh et al., 2013; Muniandy & Shuib, 2016; Psaltou-Joycey & Kantaridou, 2009; Radwan, 2014) that merely investigated the overall aspects of learners' language learning styles and language learning strategies. However, these studies did not address the nature of relationship between these two variables. For example, Ghadirzadeh et al.'s (2013) study on 260 Iranian undergraduates using the adapted version of SILL, PLSP and Demotivation Questionnaire of English Language Learning reported that only metacognitive strategies highly and significantly predicting the learners' language learning achievement. In addition, students' learning styles preferences did not have statistical significant difference with the learners' academic achievements. However, this study did not attempt to investigate the relationship between these the styles and strategies.

Likewise, another study on 1555 Greek undergraduates from various disciplines of study also identified their language learning strategy and language learning style preferences, but did not make any connection between these variables (Psaltou-Joycey & Kantaridou, 2009). Similarly, Radwan's (2014) study on 212 undergraduates also examined the learning styles and strategies respectively based on gender but they did not further identify the relationship between these two variables.

Past literature has reported that a few studies (Afshar et al., 2015; Baghban & Zohoorian 2012; Chen, 2009; Chu, 2013; Fahim & Noormohammadi, 2014; Gao, 2016; Jie & Xiaoqing, 2006; Ma & Oxford, 2014; Weng, 2012) were found to examine the relationship between language learning styles and strategies. For example, Afshar et al.'s

(2015) study on 355 ESP students of Humanities and Social Sciences at three universities in Iran, which combined quantitative and qualitative research methods, showed significant differences between the ESP learners' learning styles and their use of memory and cognitive strategies. Similarly, another research by Fahim and Noormohammadi (2014) on 265 EFL second-year undergraduates, which employed the Persian version of Learning Style Questionnaire and of Strategy Inventory for Language Learning (SILL) and incorporated semi-structured interviews for the qualitative data, revealed that language learning styles were found to predict the choice of language learning strategies use. More specifically, this study showed that synoptic language learning style significantly predicted more use of language learning strategies compared to ectenic style. However, this study did not really indicate the nature of relationship between styles and strategies.

Likewise, Chen's (2009) research on 390 junior high school students, which aimed to determine the relationships between grade level, perceptual learning style preferences and language learning strategies by using PLSP and SILL questionnaires revealed that there were statistically significant relationships between perceptual learning style preferences and language learning strategies. Other study by Gao (2016) on 250 non-English majors employing PLSPQ and SILL instruments demonstrated positive correlations between language learning styles and language learning strategies.

The research by Wong (2012) on 71 non-English major sophomore students from a university of New Taipei City using PSLP and SILL revealed a significant difference between all the categories of learning styles and social strategies. In addition, Wong found learners who preferred auditory learning styles would deploy greater social strategies compared to those favouring visual learning styles. Another study by Alireza and Abdullah (2010) on 30 Iranian post graduate students studying abroad (non-language

major) and based on two disciplines of study in their foreign language learning process at *Universiti Putra Malaysia* (UPM) employed PLSP questionnaire, Oxford's SILL and semi-structured interview. This study indicated the overall learning style was linked to the preferences for language learning strategies. Research by Jie and Xiaoqing (2006) among 187 second-year undergraduates using Chinese version of MBTI-G and adapted questionnaire by O'Malley and Chamot's language learning strategies and structured interviews revealed learning styles had significantly influence the choices of learners' language learning strategies.

A typical study by Baghban and Zohoorian (2012) among 200 female Iranian college students, within the age of 17 to 22 and studying English Teaching at Mashhad Azad University and English language learners at the Iran Language Institute using Reid's PLSP questionnaire and adapted SILL questionnaire revealed the learning styles had a significant impact on the learning strategies. In addition, this study found cognitive, metacognitive and especially affective strategies were highly correlated with the auditory learning style. Besides, their study also found metacognitive and memory and social strategies highly correlated with the kinesthetic style. Similarly, Gao's (2016) study on 250 non-English major undergraduates revealed visual learning styles had significant positive correlations with other learning strategies except for compensation strategies.

On the contrary, Afshar et al.'s (2015) study showed no significant correlation between language learning styles and the total strategy use despite the significant differences between the learning styles and learning strategies. This study showed that there were significant differences between the ESP learners' learning style and their use of memory and cognitive strategies even though the total strategy use did not significantly correlated with the learning styles. Afshar et al.'s (2016) study on 138 Iranian EFL learners quantitatively revealed that there was a reverse relationship between their learning styles

and language learning strategies. Such differences might be due to unawareness of learners and teachers on using appropriate strategies that could match the learning styles.

Based on earlier discussions, relatively, not many researches are conducted on the relationship between language learning styles and language learning strategies. Besides, most of these studies (Afshar et. al., 2016; Baghban & Zohoorian, 2012; Chen, 2009; Gao, 2016; Ghadirzadeh et al., 2013; Gürses & Bouvet, 2016; Wong, 2012) only applied quantitative approach using either one or more survey instruments. Up to date, not many reported studies (Afshar et al., 2015; Alireza & Abdullah, 2010; Fahim & Noormohammadi, 2014; Jie & Xiaoqing, 2006) have indicated the use of mixed method design to investigate language learning styles and language learning strategies at one point of data collection. In addition, some studies also reported that styles did not significantly affect the choice of language learning strategies (Afshar et al., 2015; Afshar et. al., 2016).

In conclusion, a number of studies indicated styles to a certain degree are linked to the use of language learning learning strategies. Nevertheless, most reported studies did not really indicate the nature and direction of the relationship between styles and strategies. In addition, since majority of such studies were conducted quantitatively and using a large sample population, it is quite difficult to discuss which specific styles could affect the use of certain strategies or vice versa. Hence, more research on styles and strategies might be needed in order to determine the nature of relationship between styles and strategies as limited findings were reported to describe how styles would influence strategies.

## 2.9 Conclusion

This chapter has discussed the theories related to language learning, language learning styles, and language learning strategies. It also described various factors that might affect the learners' language learning styles and language learning strategies. Besides, this chapter also provides review of previous studies related to language learning styles and language learning strategies. The next chapter will describe the methodology used in this study.

# CHAPTER 3: METHODOLOGY

## 3.1 Introduction

This chapter outlines the methodology employed in this study. It attempts to describe the overall research design, research sampling, instruments used, data collection procedure and analysis of data. This study addressed five research questions (RQ). It aimed to identify the perceptual learning style preferences (RQ1) and language learning strategies (RQ2) among the first year undergraduates in learning English language at Unimas. This included the correlation between respondents' English language perceptual learning style preferences and language learning strategies quantitatively (RQ3) besides exploring the factors that influence their perceptual learning style preferences (RQ4) and language learning strategies (RQ5) qualitatively.

## 3.2 Research Design

This study employed a mixed methods research design, which comprised quantitative and qualitative approaches (Brannen, 2008; Creswell, 2005) as shown in Figure 3.1. Employing mixed method design might bridge the qualitative-quantitative gap (Moghaddam, Walker, & Harré, 2003; Ridenour & Newman, 2008), generate a broader, deeper and more inclusive understanding of phenomena being studied (Creswell, 2012; Creswell & Plano Clark, 2011; Greene, 2007; Schensul, Schensul, & LeCompte, 1999) and encouraged thinking outside the box (Brannen, 2008). This study specifically utilised the explanatory sequential design, in which quantitative data was first collected and analysed and then followed by qualitative data collection, analysis and interpretation (Creswell & Plano Clark, 2011, p. 70).

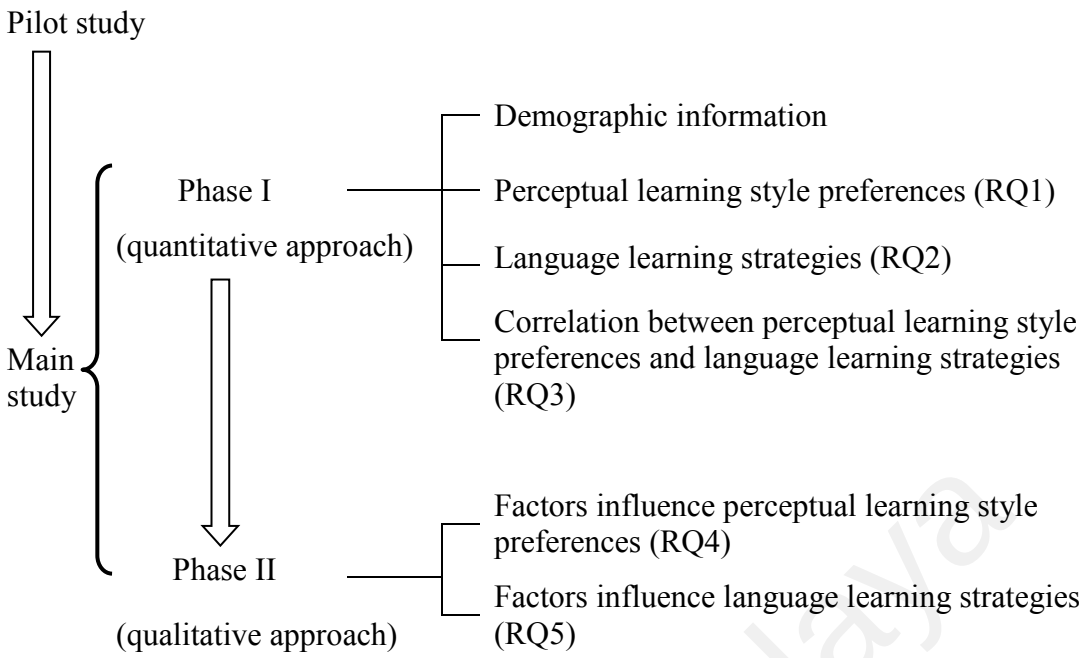



**Figure 3.1: Incorporation of mixed method design in main study**

Based on Figure 3.1, the main study was carried out in two phases after the process of pilot study had completed. In phase I, a cross-sectional survey design (Creswell, 2005) was used because it included a wide range of respondents at a single research. Survey questionnaires were distributed to all the first year undergraduates in order to identify their demographic information, perceptual learning style preferences and language learning strategies in learning English. It also aimed to investigate the correlation between perceptual learning style preferences and language learning strategies.

In addition, phase II of the main study, that applied a qualitative approach using one-to-one interview, aimed to explore factors that might affect the respondents' perceptual learning style preferences and language learning strategies. Onwuegbuzie and Mallette (2011, p. 302) described that qualitative findings under optimal conditions might provide insights into psychological, social and or cultural processes and practices within a specific setting, location, context, event, activity, incident, time and or experience of the selected respondents. Through qualitative method, constructing social experiences processes and

providing meanings to a phenomena brought by respondents in the natural settings individually can be interpreted (Denzin & Lincoln, 2011). Gray (2009) revealed the use of semi-structured interview could provide more detailed responses besides to provide an immediate clarification of the meanings ascribed to the phenomena. Therefore, collection of in-depth primary source of information through interview helped to supplement the prior data which might be incomplete (Kumar, 2011).

## 3.3 Setting

This study was carried out in a local public university in Sarawak as majority of the language learning studies were reported in West Malaysia compared to East Malaysia. There are two local public universities situated in Kota Samarahan Division, Sarawak, Malaysia, namely *Universiti Malaysia Sarawak* (Unimas) and MARA University of Technology (UiTM). However, only Unimas was chosen for this study because it comprised various ethnicities with a larger population size compared to UiTM. Additionally, Unimas also offerred various academic programmes compared to UiTM, which mainly offers pre-diploma, diploma and degree programmes in certain fields of study. Since the population at Unimas was more diversified, it is perceived that comprehensive findings on the perceptual learning style preferences and language learning strategies could be obtained. Gilgum and Abrams (2012) also indicated that when study in same area is replicated, the current findings could test further whether prior findings in this area of study could be applied at new settings, persons and time through different research participants' voices and experiences.

The first year undergraduates in Unimas were chosen for this study because knowing their perceptual learning style preferences and language learning strategies through the survey instruments, namely PLSPQ and SILL might guide them to learn language effectively at the tertiary level. Prior study by Nelson et al. (1993) also indicated that students who completed the learning instrument at the beginning of the course achieved better grades at the end (as cited in Mulalic et al., 2009, p. 10). Oxford (1990a) also stated that responses from the SILL questionnaire could enable the learners to assess the frequencies of using various language learning strategies. By being exposed to specific items for each category of strategies, these learners might be able to try using new language learning strategies (Ehrman, 1996). On the other hand, findings on PLSPQ will enable learners to be more aware of their preferred learning styles. Such awareness not only benefited the learners, it also could assist the instructors to create better learning environment that match the learners' styles (Hickcox, 1995).

### 3.4 Pilot Study

An external pilot study to collect quantitative data within a two-week duration was conducted prior to the main study. External pilot study involved a small data scale and its data was excluded from the main study (Eldridge & Kerry, 2012; Ryan, 2013) to prevent selection bias and type I error (Ferguson & Brophy, 2017) in main study. Such pilot test aimed to try out the survey questionnaire comprised demographic variables, and items to measure the learners' perceptual learning style preferences and language learning strategies in learning English. Pilot testing of survey questionnaires served as a trial before administering the refined questionnaire for the main study. It also helped to estimate the time required to respond to the survey questions for better administration of survey in the main study.

133 or 6.22% of first-year undergraduates out of 2139 from Semester 1 2009/2010 intake as of 31 July 2009 in Unimas were selected as sample of subjects for pilot study. These subjects encompassed all the 34 academic programmes offered by eight faculties in Unimas, namely Faculty of Social Sciences, Faculty of Applied and Creative Arts, Faculty of Computer Science and Information Technology, Faculty of Business and Economics, Faculty of Engineering, Faculty of Medicine and Health Science, Faculty of Cognitive Sciences and Human Development, Faculty of Resource Science and Technology. Besides these faculties, an academic centre, namely Centre for Language Studies was excluded from this study as it did not offer any degree programme. Nevertheless, all undergraduates who enrolled in Unimas were required to fulfill certain hours of English language courses from Centre for Language Studies, Unimas.

Subjects for the pilot study were selected using proportionate stratified sampling (Dattalo, 2008; Gregoire & Valentine, 2008; Hibberts, Johnson, & Hudson, 2012; Rubin & Babbie, 2008) to ensure specific characteristics required in the study were included in the sample (Creswell, 2005). Such sampling was crucial to ensure the effectiveness of large-scale surveys (Brown, 2001). In this study, the eight faculties, which composed learners with various academic programmes served as the strata. The subjects involved in pilot study were purposively stratified to reflect their different characteristics.

Cargan (2007) stated the sample size from each stratum could be determined based on its proportion in the population where additional elements of various respondents' background in each proportion could ensure its optimal variability. Hence, the sample became more representative for comparison purpose. It might also reduce the sampling error (Northrop, 1999; Rubin & Babbie, 2008), higher precision in estimating population parameter (Gregoire & Valentine, 2008) and generalization of research findings (Punch, 2005).

Before the actual selection of respondents for pilot study, a statistical methodology was used to predetermine the sample size of pilot study. The calculation of sample size was determined by using the precision analysis based on a fixed confidence level, α (Chow & Liu, 2004) and a margin of error (Ahn, Heo, & Zhang, 2015). Based on these two criteria, the survey's sample size could be determined accurately (Stevens, Wrenn, Sherwood, & Ruddick, 2006). Such view was similar to Webb and Wang (2016) who stated that appropriate sample size depends on three factors namely "statistics of interest, tolerance for error and population size" (p. 658). Based on these criteria, the formula used to predetermine the sample size, *n* of pilot study based on stratified random sampling as suggested by Lemeshow, Hosmer, Klar, and Lwanga (1990) was as follows:

$$n = \frac{z_{1-\alpha/2}^2}{N^2 d^2} \sum_{h=1}^{L} N_h^2 P_h(1 - P_h)/W_h$$

where

$\alpha$ = Significance level = .05

$z_{1-\alpha/2}$ = 100(1 – $\alpha$/2)th percentile of standard normal distribution = 1.960

$N$ = Population size = 2139

$d$ = Percentage points (Lemeshow et al., 1990) or margin of error (Ahn, Heo, & Zhang, 2015) or degree of accuracy (Krejcie & Morgan, 1970)

= 9% or .09

$L$ = Number of strata = 8

$N_h$ = Number of undergraduates in each stratum

$P_h$ = Proportion of undergraduates in stratum *h* possessing the characteristic of interest (Lemeshow et al., 1990) or population proportion (Lwanga & Lemeshow, 1991)

= .50

$W_h$ = Weightage of graduates in each stratum compared to population

Alpha, $\alpha$ which is also known as significance level is a small probability that statistic can deviate from the expected value or type I error and includes the error of false positive (Liu, 2014). Value of α in this study was set at .05 with its confidence interval equals to 95%. The pre-specified confidence interval was allowed in precision analysis (Ahn, Heo, & Zhang, 2015). Dattalo (2008) further mentioned confidence interval was able to provide information about an estimated measure of precision. Confidence interval at 95% suggests probability that true population parameter of interest such as mean within the intervals is 0.95.

In this study, value of population proportion, $P_h$ was set at .50. The value of $P_h$ required judgment or a 'best guess' by the researcher (Anderson, Sweeney, Williams, Freeman, & Shoesmith, 2007). Value of $P_h$ at .05 was the 'safest' choice of population proportion (Lwanga & Lemeshow, 1991) and would provide the maximum sample size in a study (Krejcie & Morgan, 1970).

In precision analysis, the researcher was also required to decide the maximum margin of error, *d* of the unknown population parameter (Ahn, Heo, & Zhang, 2015; Chow, 2014). The value *d* shows the desired precision (Lemeshow et al., 1990; Rumsey, 2005) that indicates the maximum expected distance between sample result and the actual result of population being studied (Rumsey, 2011). The margin of error, *d* in predetermining the

sample size of the pilot study was set at 9% or .09, with the consideration of the pilot study that aimed in trying out the survey questionnaire and refining the clarity of items in survey questionnaire. For the actual pilot study that involved 133 first year undergraduates (Appendix A), its margin of error was .823. This value indicated the random variation underlying findings of the pilot study was 8.23% from the true population parameter at 95% confidence level.

The aim of study, statistical quality needed and availability of resources were the three main factors that could affect the target sample size (Kelley, Clark, Brown, & Sitzia, 2003). Besides being the representativeness of population of interest, sample size which was sufficiently large (Johanson & Brooks, 2009) would ensure feasibility and success of main study (Thabane et al., 2010). Hence, based on the formula given for proportionate stratified sampling, (Lemeshow et al., 1990) calculation in predetermining the sample size for pilot study was illustrated in Table 3.1.

**Table 3.1: Predetermined sample size for pilot study**

| **Faculties (strata)** | **Number of undergraduates in each Faculty, $N_h$** | **Weightage of each stratum, $W_h$** | $N_h^2 P_h(1-P_h)/W_h$ |
|---|---|---|---|
| FSS | 242 | .1131 | 129,451.8 |
| FSGK | 407 | .1903 | 217,615.6 |
| FIT | 116 | .0542 | 62,066.4 |
| FEB | 271 | .1267 | 144,911.2 |
| FK | 335 | .1566 | 179,158.7 |
| FPSK | 143 | .0669 | 76,416.3 |
| FSKPM | 277 | .1295 | 148,125.5 |
| FSTS | 348 | .1627 | 186,084.8 |
| Total | 2139 | 1.000 | 1,143,830.3 |

Predetermined sample size, $n = \frac{1.960^2}{2139^2(.09)^2}(1{,}143{,}830.3)$

$\approx 119$

Based on the predetermined sample size ($n$ = 119), the approximate number of respondents from each faculty in pilot study

= Predetermined sample size X Proportionate percentage of first year undergraduates of a Faculty from the population

in which

proportionate percentage of first year undergraduates of a Faculty from the population

$$= \frac{\text{Number of first year undergraduates of a Faculty}}{\text{Total number of first year undergraduates in Unimas}} \text{ X } 100\%$$

This calculated value was then rounded to determine the equal number of respondents from each academic programme in a faculty. Rounding the numbers of respondents to the whole number produced 133 first-year undergraduates for the pilot study (Appendix A). The rounding of numbers resulted in small percentage differences between the actual number of first year undergraduates who participated as the survey respondent and the predetermined sample size in pilot study.

During the pilot study, respondents from the same programme of study completed the survey questionnaire at the same time. Respondents were encouraged to ask the researcher if they were doubtful about items or choices provided in the survey questionnaire. They

were allowed to add their comments on the items in the questionnaire while responding. Based on the written comments by the respondents on the survey questionnaire, some options of demographic variables were amended as indicated by a few examples in Table 3.2.

**Table 3.2: Changes of pilot survey questionnaire compared to main study**

| No. | Demographic variables | Pilot study | Main study |
|---|---|---|---|
| 1 | Location of hometown | 2 options (city, rural area) | 3 options (city, suburban, rural area) |
| 2 | Number of siblings | Not included | Included |
| 3 | Position among siblings | 2 options (eldest, youngest) | 16 options (from eldest till 16th) |
| 4 | Parents' total monthly income | 11 options (none, interval of RM500 till >RM4500) | 16 options (none, interval of RM500 till >RM7000) |
| 5 | Faculty | Written by participants | Tick one of the eight Faculties |

Blessing and Chakrabarti (2009) pointed out that pilot study was necessary as potential problems that might affect the quality and validity of actual study could be identified earlier. The researcher then amended items in questionnaires based on respondents' feedbacks in the pilot study. This is to evaluate the instrument (Creswell, 2005) and to improve its internal validity (Nirmala & Silvia, 2011).

## 3.5 Subjects of Main Study

The main study comprised two phases of data collection, namely phase I and phase II which incorporated quantitative and qualitative approaches respectively. Quantitative data of phase I was collected through administration of survey questionnaires while collection of qualitative data of phase II involved interviews.

### 3.5.1 Survey Respondents of Main Study

Subjects who were involved in pilot study were excluded from phase I of the main study involving surveys. The subjects, first year undergraduates from eight faculties were those present on the particular day and time allocated for data collection pertaining to permission obtained from deans and lecturers of these faculties respectively. The survey was carried out based the respondents' willingness to participate in the study. Respondents with incomplete information were contacted either through phones or e-mails. Incomplete data due to nonresponses were discarded. As such, 1708 first year undergraduates or 85.14% of its population responded to the survey questionnaires (Appendix A).

Excluding respondents involved in the pilot study from the actual study could prevent contamination of data collected in the main study (Nirmala & Silvia, 2011). Tayie (2005) mentioned that the sample size included more than 1000 respondents for an analysis of a dependent variable was categorised as excellent. However, the emphasis was whether the sample were representative of the population targeted rather than focusing on the number. Nevertheless, Mathews (2010) stated that a larger sample size provided a better precision and reduced the chances of making mistakes.

From the completed responses of survey questionnaires, it was found that the proportion of respondents of each faculty who participated in the main study was similar to the numbers of first year undergraduates registered in each faculty (Appendix A). When comparing percentages of actual number of first year undergraduates registered in each faculty with number of respondents involved in the survey, Faculty of Social Sciences indicated 11.31% and 10.89%, followed by Faculty of Applied and Creative Arts with 19.03% and 19.85%, Faculty of Computer Science and Information Technology with 5.42% and 4.80%, Faculty of Business and Economics with 12.67% and 12.82%,

Faculty of Engineering with 15.66% and 15.69%, Faculty of Medicine and Health Science with 6.69% and 7.38%, Faculty of Cognitive Sciences and Human Development with 12.95% and 12.65%, and last Faculty of Resource Science and Technology with 16.27% and 15.93% respectively.

### 3.5.2 Qualitative Research Interviewees of Main Study

Incorporation of qualitative research interviews during phase II of main study aimed to further investigate factors that might influence first year undergraduates' perceptual learning style preferences and language learning strategies in learning English language. Selection of interviewees in this study employed non-probability quota sampling technique (Foreman, 1991; Gregoire & Valentine, 2008; Hibberts et al., 2012). Quota sampling is a non-probability technique depending on the availability of elements in the population (Monette, Sullivan, & DeJong, 2011; Schutt, 2006), in which not all the elements have equal chances of being selected (Beri, 2010). In quota sampling, the researcher had the discretion to fix certain quotas (Beri, 2010) or numbers of the particular types of population units (Lohr, 2010) to describe the characteristics of target population (Rubin & Babbie, 2010). Some key demographic characteristics or variables could be used as quotas (Monette et al., 2011) in choosing representative sample (Wrenn, Stevens, & Loudon, 2007).

In this study, there were 14 demographic variables (Table 3.3) pre-established as quotas in selecting potential interviewees. Each quota of demographic variables was maximally fulfilled as indicated by the matrix used in selecting of interviewees through quota sampling (Appendix B). The quota sampling aimed to gain optimal representative information from interviewees of the population being studied. With emphasis on certain specific variables (Sharma, 1997), purposive and careful selection of interviewees assured

that specific required, important and relevant information could be collected (Rajamanickam, 2001). Hence, the interviewees selected as sample could be assumed to have same distribution of characteristics as its population (Rubin & Babbie, 2008).

**Table 3.3: List of demographic variables for selecting interviewees**

| No. | Demographic variables | No. | Demographic variables |
|---|---|---|---|
| 1 | Gender | 8 | Father's educational level |
| 2 | Ethnicity | 9 | Mother's education level |
| 3 | Faculty | 10 | Father's occupation |
| 4 | Programme of study | 11 | Mother's occupation |
| 5 | MUET result | 12 | English Language spoken at home |
| 6 | Geographic area | 13 | Type of primary school |
| 7 | Parents' total income | 14 | Position among siblings |

The selection of interviewees with these 14 demographic variables (Table 3.3) was based on two criteria. The first selection criterion for interviewees was based on findings related to past studies whereas the second criterion was based on the statistical analyses of quantitative data from phase I of main study.

Findings of past studies showed demographic variables such as gender (Alkubaidi, 2014; Lincoln & Rademacher, 2006), ethnicity (Obralić & Akbarov, 2012), fields of study (Babacan, 2015; Vaseghi et al., 2012), language proficiency (Paulraj, Ali, & Vetrayan, 2013), geographical area (Karthigeyan & Nirmala, 2013), language background (Reid, 1987), availability of instructional materials or equipment and learners' social status (Abante, Almendral, Manansala, & Mañibo, 2014) are crucial in investigating learners' perceptual learning style preferences. A study by Akram and Ghani (2013) showed learners' socioeconomic status was related to their motivation in language learning. Hence, this variable was also included as one selection criteria for interviewees.

On the other hand, findings of past studies related to language learning strategies also showed the demographic variables such as gender (Hashemi, 2011; Khamkhien, 2010; Lai, 2009; Pawlak, 2013), fields of study (Alireza & Abdulllah, 2010), language proficiency (Kunasaraphan, 2015; Platsidou & Sipitanou, 2015; Psaltou-Joycey & Kantaridou, 2009; Wharton, 2000), levels of education (Saeb & Zamani, 2013) and language of instruction (Chamot, 2004) are worth to be investigated.

In addition to findings of past studies, statistical analyses were also conducted on data collected through survey in phase I of this study. Significant level of the statistical tests, $\alpha$ was set at .05. Independent-samples *t*-tests were conducted for two demographic variables, namely gender and English language spoken at home that affected the perceptual learning style preferences and language learning strategies. The remaining 12 demographic variables that had more than two categories of mean scores were analysed using One-way Analysis of Variance of SPSS (Statistical Package for the Social Sciences) version 18.

Table 3.4 summarised the statistical analyses of six perceptual learning style preferences based on 14 pre-determined demographic variables. From the 84 statistical tests conducted, there were 61 or 72.62% of findings showing significant differences for all the 14 demographic variables selected.

**Table 3.4: Analyses of perceptual learning style preferences based on demographic variables**

| Demographic variables | Perceptual learning style preferences | | | | | |
|---|---|---|---|---|---|---|
| | Visual | Tactile | Auditory | Group | Kinesthetic | Individual |
| Gender | | * | * | | * | * |
| Ethnicity | * | * | | * | * | * |
| Faculty | * | * | * | * | * | * |
| Programme of study | * | * | * | * | * | * |
| MUET result | * | * | * | * | * | * |
| Geographic area | * | | * | | | * |
| Parents' total income | * | * | * | | * | * |
| Father's education | * | * | * | | * | * |
| Mother's education | | * | * | | * | |
| Father's occupation | * | | | | * | * |
| Mother's occupation | | | * | | * | * |
| English Language spoken at home | * | * | * | | * | * |
| Type of primary school | * | | | * | * | * |
| Position among siblings | * | | * | | | * |

Note: * = significant differences at $p < .05$

Statistical analyses were also conducted for undergraduates' employment of language learning strategies based on the predetermined 14 demographic variables (Table 3.5). From the 84 statistical tests conducted, 54 or 64.29% of the findings showed significant differences.

**Table 3.5: Analyses of language learning strategies based on demographic variables**

| Demographic variables | Language learning strategies | | | | | |
|---|---|---|---|---|---|---|
| | Memory | Cognitive | Compen-sation | Metacog-nitive | Affective | Social |
| Gender | * | | | * | * | |
| Ethnicity | * | * | * | * | * | * |
| Faculty | | * | * | | * | * |
| Programme of study | * | * | * | * | * | * |
| MUET result | | * | * | * | * | * |
| Geographic area | | * | * | * | * | * |
| Parents' total income | | * | * | * | * | * |
| Father's education | | * | | | | * |
| Mother's education | | * | * | | * | * |
| Father's occupation | | * | | | | * |
| Mother's occupation | | * | * | | | * |
| English Language spoken at home | * | * | | * | | * |
| Type of primary school | * | | | * | * | |
| Position among siblings | | * | | | | * |

Note: * = significant differences at $p < .05$

Significant differences of both perceptual learning style preferences and language learning strategies for each demographic variable further indicated that those 14 demographic variables should be included in selection of interviewees. The details of significant statistics based on the 14 demographic variables for perceptual learning style preferences and language learning strategies were as shown in Appendix C. With these 14 demographic variables that were set as criteria in interviewees' selection, 27 respondents from the subject pool of phase I in the main study were chosen.

In summary, selection of interviewees comprised all the most preferred or least preferred categories of PLSP. 11 (40.74%) interviewees mostly preferred individual learning style, followed by group (10 or 37.04%), and auditory (5 or 18.52%). Visual, tactile and kinesthetic learning styles were similarly preferred by the same number of interviewees (4 or 14.81%). Seven (25.93%) interviewees least preferred both group and visual learning styles, six (22.22%) interviewees for tactile learning style, five (18.52%) for kinesthetic, four (14.81%) for auditory and three (11.11%) for individual learning style. The total percentage exceeded 100% as some interviewees showed more than one mostly or the least preferred learning styles (Appendix D).

The pool of interviewees selected also included all categories of the other dependent variable, namely language learning strategies (Appendix D). Nine (33.33%) interviewees mostly employed compensation strategies, eight (29.63%) for metacognitive, four (14.81%) for social and cognitive, three (11.11%) for affective and one (3.70%) for memory strategies. On the contrary, 13 (48.15%) interviewees least utilised affective strategies, six (22.22%) for memory, five (18.52%) for compensation, three (11.11%) for social and one (3.70%) interviewee for metacognitive and cognitive strategies.

## 3.6 Instrumentation

This study combined the use of two adapted questionnaires, namely Reid's Perceptual Learning Style Preferences (Reid, 1987) and Oxford's Strategy Inventory for Language Learning (Oxford, 1990a) into one survey instrument. Pilot study only involved the use of survey questionnaire to be responded by each subject. Phase I and phase II of the main study were carried after the pilot study. Phase I of the main study involved the use of a refined survey questionnaire based on responses from the pilot study with the purpose of

obtaining quantitative data through survey. On the other hand, Phase II involved one-to-one interviews with selected respondents to obtain data qualitatively.

### 3.6.1 Survey Questionnaire

A consent form, prepared in both languages, *Bahasa Melayu* and English, was attached to the questionnaire when each respondent responded to the survey questions (Appendix E). Subjects were informed about the title of this study, type of data collected from three different sections of this questionnaire, confidentiality of their responses and their willingness to participate in this study. This includes a cover letter of the questionnaire which described the objectives of the study, appreciation of their participation and emphasis of confidentiality of data collected (Appendix F).

Survey in phase I of the main study used self-administered questionnaire. The questionnaires were group administered based on the programme of studies by respondents. Administration of the survey in smaller groups was to cater to the needs of the respondents' availability and to clarify the items more effectively besides to ensure higher response rate. Forward translation was done to translate the original questionnaire from English language to *Bahasa Melayu*. This translated version of the instrument was further checked by two language experts (Appendix G) for language clarity and accuracy of the translation.

#### 3.6.1.1 Demographic Variables

Section A of survey questionnaire (Appendix H) was used to collect some demographic information of the first year undergraduates with various cultural backgrounds. Variables included were age, state of origin, location of hometown, ethnicity, gender, marital status, position among their siblings, parents' income together

with their educational levels and occupations, faculty and academic programme enrolled, MUET result, medium of prior educational instruction and languages used at home and with others. This section also identified the purposes of learning English language, the influence of others and the frequency of communicating in English. The demographic information was then used to identify whether there were key factors that influence respondents' perceptual learning style preferences or language learning strategies.

#### 3.6.1.2 Perceptual Learning Style Preference Questionnaire

Section B of survey questionnaire (Appendix I) measured perceptual learning style preferences of the respondents in learning English language by using an adapted version of Reid's (1987) Perceptual Learning Style Preference Questionnaire. Findings from PLSPQ were used to answer the first research question (RQ1) on the overall perceptual learning style preferences of the first year undergraduates in learning English language.

Reid (1998) categorised perceptual learning style preferences into visual, tactile, auditory, group, kinesthetic and individual learning styles. Hence, PLSPQ comprised 30 randomly arranged items which measured these six perceptual learning styles. There were five items for each learning style preference. Each item had five-point Likert scale option ranging from "strongly agree" to "strongly disagree". The corresponding item numbers with their perceptual learning style preferences were as indicated in Table 3.7. For this section, the extent of questions being edited based on the original questionnaire were minimal before the implementation of the pilot study. The word 'teacher' used in Questions 1, 6, and 17 in Reid's original questionnaire was replaced with the word 'instructor' in the questionnaire distributed during the pilot and actual studies as this word 'instructor' was more commonly used in the university context.

Upon obtaining quantitative data regarding the perceptual learning style preferences (PLSPQ) in Section B, reliabilities of items in each preference were calculated. George and Mallery (2005) mentioned the reliability of an instrument, which involved internal consistency of items for particular underlying factor could be measured through their Chronbach's alpha coefficients (α). These reliability coefficients were used as the benchmark by the researcher to decide whether to continue using the questionnaire in the main study. Generally, the levels of reliability of items (George & Mallery, 2005, p. 231) were as shown in Table 3.6.

**Table 3.6: Level of reliabilities of items**

| **Chronbach's alpha coefficient, *α*** | **Level of reliabilities** |
|---|---|
| $\alpha > 0.9$ | Excellent |
| $\alpha > 0.8$ | Good |
| $\alpha > 0.7$ | Acceptable |
| $\alpha > 0.6$ | Questionable |
| $\alpha > 0.5$ | Poor |
| $\alpha < 0.5$ | Unacceptable |

In this study, overall reliabilities for 30 items of PLSPQ were reported .930 in pilot study and .830 for main study (Table 3.7). These coefficients of Cronbach's alpha were classified as "excellent" and "good" respectively by George and Mallery (2005). In other words, the items in questionnaire were highly reliable. Based on the breakdown of perceptual learning style preferences, only auditory learning style reported poor reliability ($\alpha$ = .561) in the main study. Similarly, Martin and Bateson (1993) mentioned the reliability of straightforward measurement of categories in behaviour should be higher than .7. Besides, Webb, Shavelson, and Haertel (2007) also stated that coefficient of Cronbach's alpha at 0.80 or higher are always considered sufficiently reliable.

**Table 3.7: Reliabilities of Perceptual Learning Style Preference Questionnaire**

| Perceptual learning style preferences | Number of items | Item numbers in section B | Cronbach's alpha | |
|---|---|---|---|---|
| | | | Pilot study ($n$ = 133) | Main study ($n$ = 1708) |
| Group | 5 | 3, 4, 5, 21, 23 | .832 | .800 |
| Individual | 5 | 13, 18, 27, 28, 30 | .832 | .799 |
| Tactile | 5 | 11, 14, 16, 22, 25 | .760 | .684 |
| Kinesthetic | 5 | 2, 8, 15, 19, 26 | .748 | .718 |
| Visual | 5 | 6, 10, 12, 24, 29 | .569 | .614 |
| Auditory | 5 | 1, 7, 9, 17, 20 | .519 | .561 |
| Total | 30 | 30 | .930 | .830 |

In short, the result of high total reliability value for PLSPQ in this study was similar to studies conducted by many others researchers (Khamkhien, 2010; Li, 2012; Vaseghi, Barjesteh, & Shakib, 2013) using different samples and contexts. For example, Khamkhien's (2010) study on Thai University students reported a high reliability, $\alpha$ = .873 similar to the total reliability for this PLSPQ. Similarly, another study on 75 Iranian high schools also showed a high reliability, $\alpha$ = .72 for PLSPQ. Another study by Li (2012) on 92 university students using PLSPQ also indicated a high reliability, $\alpha$ = .81.

### 3.6.1.3 Strategy Inventory for Language Learning Strategies

Section C of this survey questionnaire (Appendix J) consisted 50 items, used to identify the respondents' language learning strategies in learning English by using an adapted version of Oxford's Strategy Inventory for Language Learning (SILL) ESL/EFL version 7.0 (1989) (as cited in Oxford, 1990a, pp. 293-300). Findings from this section were used to answer second research question (RQ2) regarding the language learning strategies employed by these first year undergraduates in learning English language.

SILL was chosen because it was designed to expand the frequently restricted conception where most other inventories seemed to emphasise "information-processing and executive management aspects of the learner and did not capture the essence of the whole learner" (as cited in Green & Oxford, 1995, p. 265). In other words, this inventory might be more holistic compared to other inventories though it did not aim to "reflect a perfected theoretical construct of language learning strategies" (Green & Oxford, 1995, p. 265).

Nazri, Yunus, & Nazri (2016) stated SILL was suitable to assess the language learning strategies of learners with cultural differences in the context of English as a second language (ESL) or English as a Foreign Language (EFL). Oxford (1992) also indicated that SILL's reliability and validity had been proven extensively (as cited in Nazri et al, 2016). Furthermore, Oxford (1996a) emphasised SILL had shown a high reliability in various studies across different cultural contexts. Likewise, Chamot (2005) also acknowledged the use of SILL as the most employed instrument in measuring language learning strategies among learners with different cultural backgrounds with the Cronbach alpha value ranging from 0.93 to 0.98 (as cited in Uztosun, 2014). Hence, studies have proven the reliability of the SILL was high across various cultural groups and was often estimated using Cronbach's alpha for internal consistency (Aliakbari & Hayatzadeh, 2008; Chen & Hung, 2012; Kayaoğlu, 2012; Mohammadi & Alizadeh, 2014; Savas & Erol, 2015). In addition, Kaylani (1996) indicated SILL had been used by almost ten thousand language learners from varous disciplines of studies across the world (as cited in Nazri et al., 2016).

Prior to the pilot study, a few changes were made to some items in SILL. For question 9, the word 'board' was added after 'notice' and the phrase 'street sign' was changed to 'signboard' as shown in the following statements:

Original: I remember new English words or phrases by remembering their location on the page, on the board or on a street sign.

Amended: I remember new English words or phrases by remembering their location on the page, on the notice board or on a signboard.

As for other items, namely Questions 14, 17, 20, 38, 46, 47 and 49, the word 'language' was added to these questions after the word 'English'. After the implementation of this pilot study, further changes were made to some of the items in the questionnaire. The word 'language' was also added to most of the questions namely Questions 1, 15, 18, 23, 25, 26, 28, 30, 32, 34, 35, 36, 37, 39, 41, 42, 44 to 45 after the word 'English' in order to improve clarity of questions to the respondents in a Malaysian context.

For each item in this section, respondents were required to circle one of the five-point Likert rating scale that indicated their frequency of employing a particular language learning strategy, ranging from "never or almost never true of me" to "always or almost true of me". The underlying constructs of these 50 items were six language learning strategies, namely metacognitive, cognitive, social, memory, compensation and affective strategies. Their corresponding item numbers were illustrated in Table 3.8. Nine items measured metacognitive and memory strategies respectively. In addition, 14 items were on cognitive strategies, and six items on social, compensation and affective strategies respectively.

**Table 3.8: Reliabilities of Strategy Inventory for Language Learning**

| Language learning strategies | Number of items | Item numbers in section C | Cronbach's alpha | |
|---|---|---|---|---|
| | | | Pilot study (*n* = 133) | Main study (*n* = 1708) |
| Metacognitive | 9 | 30 – 38 | .909 | .875 |
| Cognitive | 14 | 10 – 23 | .832 | .839 |
| Social | 6 | 45 – 50 | .799 | .774 |
| Memory | 9 | 1 – 9 | .760 | .736 |
| Compensation | 6 | 24 – 29 | .609 | .660 |
| Affective | 6 | 39 – 44 | .514 | .539 |
| Total | 50 | 50 | .835 | .926 |

The reliability of SILL were reported as good in the pilot study (α = .835) and excellent in the main study (α = .926) through their coefficients of Cronbach's alpha (Table 3.8). Since the overall reliability of SILL was high, this instrument was considered as a reliable instrument. Such finding is in accordance with past studies (Gavriilidou & Mitits, 2013; Kayaoğlu, 2012; Magno, 2010). For example, Kayaoğlu's study on 146 EFL undergraduates in Turkish university revealed the reliability of SILL high (α = .876). Similarly, Magno's study on 302 Korean students indicated a high Cronbach alpha (α = .90). Even though the reliability of SILL was excellent, the breakdown of finding for affective strategies in the main study reported poor reliability (α = .539). It was suggested that reliability of these items to be improved in future study.

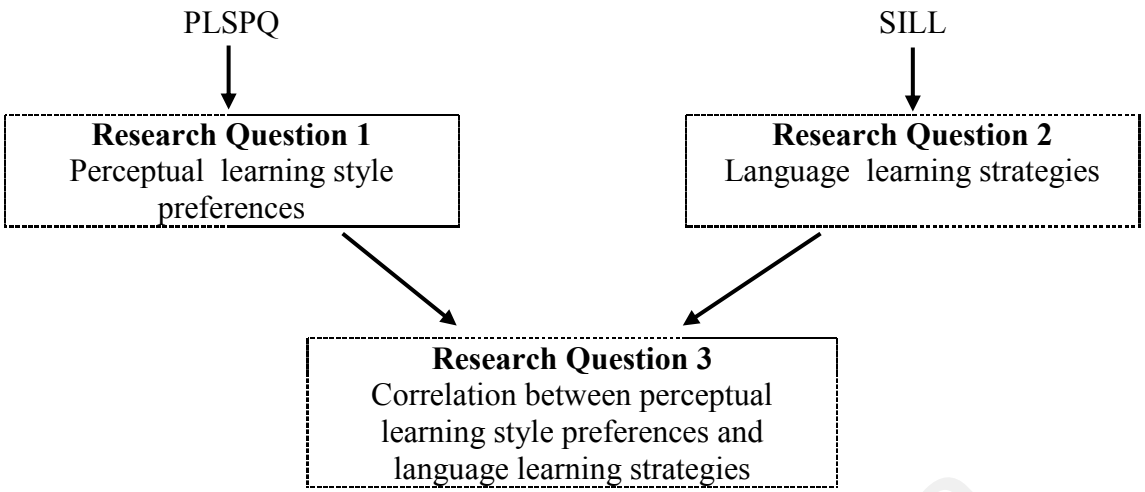



**Figure 3.2: Quantitative enquiry in phase I of main study**

In sum, findings from Reid's Perceptual Learning Style Preference Questionnaire (PLSPQ) were used to answer Research Question 1 (RQ1) and Strategy Inventory for Language Learning (SILL) for answering Research Question 2 (RQ2) (Figure 3.2). Both quantitative findings from PLSPQ and SILL were then correlated to answer Research Question 3 (RQ3) in order to identify the correlation between perceptual learning style preferences and language learning strategies.

### 3.6.2 Interview

Phase II of the main study incorporated qualitative approach by conducting individual face-to-face interview. It aimed to answer two research questions to identify and explore the factors that might influence perceptual learning style preferences (RQ4) and language learning strategies (RQ5) among the first year undergraduates of Unimas in learning English. The interview was necessary as it served as a continual enquiry process for RQ4 and RQ5 based on the first (RQ1) and second (RQ2) research questions respectively. Both RQ1 and RQ2 involved quantitative enquiries in phase I of the main study that aimed to

identify undergraduates' perceptual learning style preferences (RQ1) and language learning strategies (RQ2) in learning English language.

Through interviews, the researcher could obtain interviewees' perspectives related to the quantitative findings in phase I of the study. Interviews could provide data or themes which might not be observed in quantitative analyses. Hence, interviews provided the platform for the researcher to arrive at an in-depth understanding of interviewees' perceptual learning style preferences and language learning strategies. Hence, a more comprehensive knowledge about perceptual learning style preferences and language learning strategies among Unimas first year undergraduates could be gained through the combination of findings from both phases of main study.

Sequence of events in each interview in this study was similar. As emphasized by Patton (2002), interview conducted should employ a general interview guide approach to ensure basic inquiries or subject areas for each interviewee were explored in a fairly conversational and situational environment. Hence, prior to each interview, some demographic information, perceptual learning style preferences and language learning strategies of each interviewee were tabulated. This included a list of semi-structured questions that comprised both main questions and follow-up probes about each interviewee's learning style preferences and language learning strategies. Part of the interview question guideline was as shown in Table 3.9 for an interviewee, $R_{11}$. The list of questions served as a guide for the researcher on the type of questions that could be asked during the process of interview. Interviewees were encouraged to provide their thoughts and related experiences on their perceptual learning style preferences and language learning strategies during process of interview. Interviewees were informed that they would remain anonymous in this study. The sample of interview transcript for the

particular interviewee ($R_{11}$), in which the researcher assigned with letter 'I', was as attached in Appendix K.

**Table 3.9: Interview question guideline for an interviewee, $R_{11}$**

| No. | Interview questions |
|---|---|
| 1. | Group learning style is your most preferred learning style in learning English. How does group learning style help you in learning English language? |
| 2. | How does the learning environment at your Faculty encourage the group learning? How the surrounding environment at your Faculty helps you to learn in group? |
| 3. | Does your command of English (MUET) help you in group learning especially within a group that converse only in English? How? |
| 4. | Are those reasons affecting you to least preferred individual learning style? If not, why? |
| 5. | Since you were brought up in a city, based on your opinion, is there any influence from the city environment that caused you to least preferred individual learning style? If not/ yes, how and why? |
| 6. | Auditory learning style is the second preferred learning style in learning English. How does it help to improve your English language? |
| 7. | From your family background (upper-middle parents' income), is there any effect on you for not choosing individual learning style in learning English? |
| 8. | What about about your father (factory manager, SPM), does he shape your learning styles (group)? |

English language was originally used for the interviews. However, the language used would change as the interviews progressed in order to match the levels of language proficiency of these interviewees in probing more in-depth responses. Although preparing the list of prompts could help to a focus interview (Green, 2005), conversation should be guided based on the priorities of interviewees to gather similar data. Hence, perspectives of interviewees which were the central point of interviews could be elicited (Patton, 2002) besides gathering more and complete information (Bernard, 2006).

The interviews with an approximate duration of half to an hour were conducted at locations that were convenient to interviewees and with least distractions. All the interviews were recorded with a digital voice recorder namely Sony Stereo IC Recorder, ICD-UX300F in MP3 format. The softcopy of taped interviews were then transferred to a notebook and stored for transcription.

### 3.7 Data Collection Procedure

After the supervisor had approved the instruments for data collection and selection of subjects, the researcher requested a formal letter from University of Malaya regarding the intention of the researcher to collect data for this study. A formal letter to request permission for data collection among Unimas first year undergraduates was prepared. Once the approval was granted by Unimas Vice Chancellor, the researcher wrote another letter to request further permission for data collection from the deans of all the faculties. Then, the researcher was directed to discuss further with the assistant registrars or the coordinators or the lecturers involved for each academic programme at the faculty level to arrange the most suitable courses and time slots available for data collection.

The average time for completion of each survey questionnaire was about 45 minutes to an hour. A brief introduction of the study and instruction for survey questionnaire were provided by the researcher at the beginning of the session for data collection. The first few sets of survey questionnaires were thoroughly checked by the researcher immediately to avoid missing data or information when the respondents completed the survey. These respondents would then help to check any missing data in subsequent survey questionnaires submitted by other respondents in order to minimise the missing value.

Upon completion of quantitative data analysis from the phase I of the main study, phase II of the study through interviews was carried out to obtain the qualitative data from selected interviewees. These interviewees were contacted through phone calls in order to decide the appropriate day, date, time and place to conduct the interview. The flow of data collection in the pilot and main studies could be illustrated in Figure 3.3.

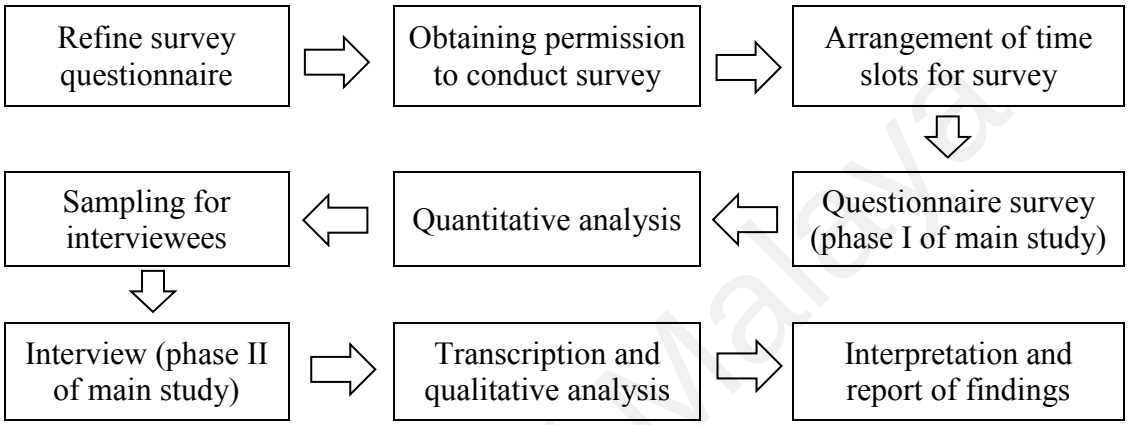



**Figure 3.3: Flowchart of data collection and analysis**

## 3.8 Quantitative Data Analyses

Quantitative data collected from survey questionnaires of phase I of main study were analysed to answer the first three research questions (RQ1, RQ2 and RQ3). Both descriptive and inferential statistics were obtained with the assistance of (International Business Machines) (IBM) Statistical Package for the Social Sciences (SPSS) version 18. The use of analytical tools based on the research questions addressed were as shown in Table 3.10.

**Table 3.10: Analytical tools for research questions 1, 2 and 3**

| No. | Research questions | Analytical tools |
|---|---|---|
| 1 | What are the perceptual learning style preferences of undergraduates in learning English language using Perceptual Learning Style Preference Questionnaire (PLSPQ) (Reid, 1987)? | One-way Analysis of Variance (ANOVA) |
| 2 | What are the language learning strategies of undergraduates using Strategy Inventory for Language Learning (SILL) version 7.0 (Oxford, 1990a)? | One-way ANOVA |
| 3 | What is the correlation between perceptual learning style preferences and language learning strategies? | Pearson product-moment correlation |

The significance criterion, $\alpha$, of this study was set at .05. Statistical power of 95% or *p*-value of less than 0.05 indicated incorrect of finding statistical significant quantitative findings of group effect in this study was less than 5 percent of a time. The *p*-value indicated the actual probability of making type I error (Pavkov & Pierce, 2003). With low *p*-value, explanation of quantitative findings by chance can be ruled out (Peck, Olsen, & Devour, 2012).

### 3.8.1 Outliers

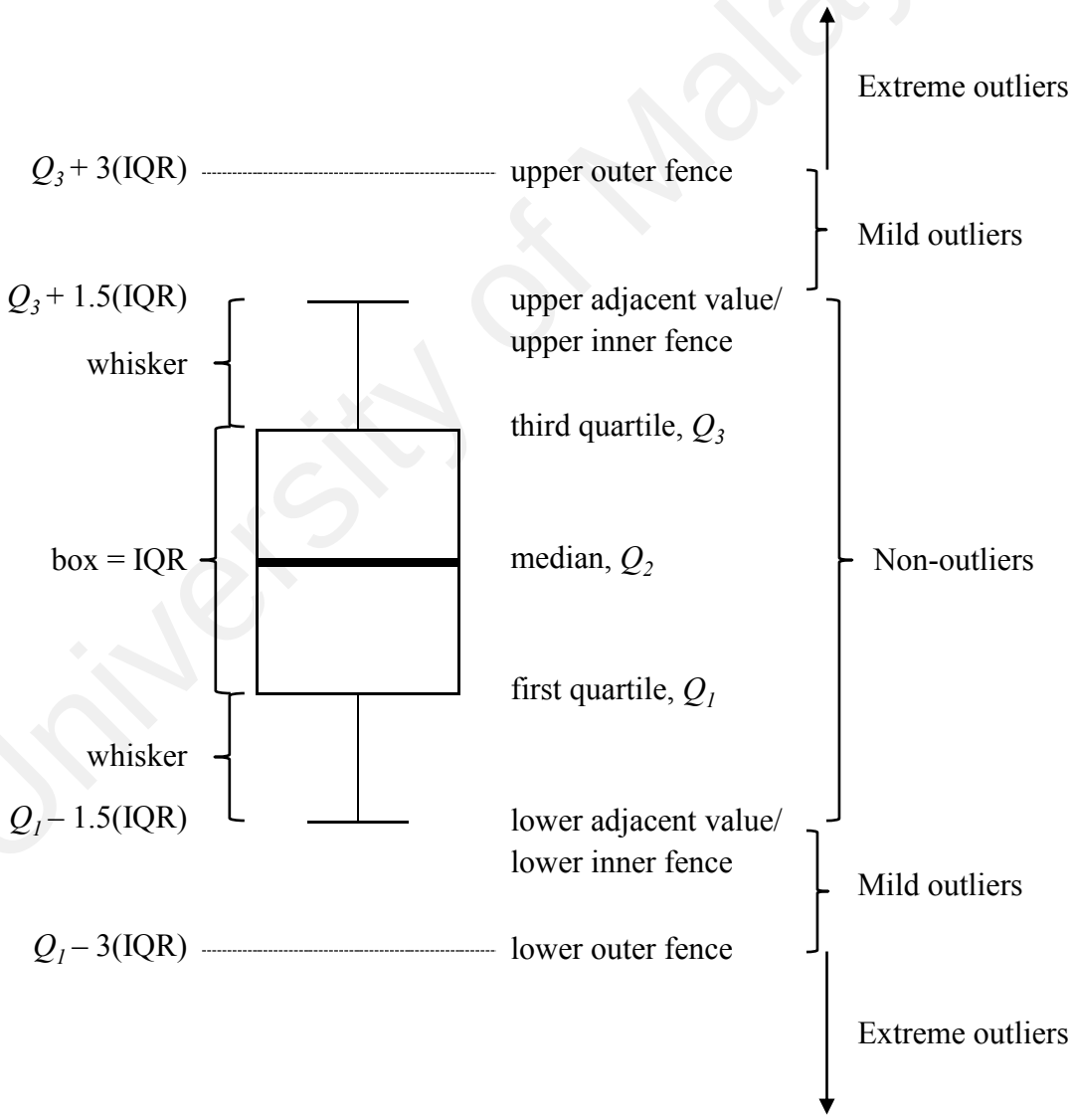
Importance of data screening such as detecting outliers and assessing normality of data should not be underestimated (Afifi, Clark, & May, 2004). By referring to a set of data, Ellison, Barwick, and Farrant (2009) defined outliers were inconsistent or outlying observations with the remainders based on some prior expections. They seemed to be unattached to the rest of the distribution (Tabachnick & Fidell, 2007). Although unusually small or large values in the distribution were possibly outliers (Anderson, Sweeney, & Williams, 2008), it might not necessary indicated data errors (Spatz, 2011). Therefore, careful dealing of outliers was crucial for statistical inference as the outliers could be due

to mistakes or even correct but "different" data value (Siegel, 2012). Ellison et al. (2009) suggested outlier testing method could be used to minimise the impact of outliers objectively. This involved the identification of outliers which distinguished them from variation by chance through inspecting the data visually. Graphical tools such as a boxplot could be used before taking any corrective action either values of outliers were corrected or removed.

Boxplot or box-and-whiskers plot could be used to summarise data (Dalgaard, 2008) of continuous variable graphically (Chawsheen & Latif, 2006; Hubert & Vandervieren, 2008). The boxplot could indicate symmetry of distribution, measures of central tendency, variability of scores (Ott & Longnecker, 2010; Rumsey, 2011) and presence of outliers explicitly (Chawsheen & Latif, 2006; Devore & Berk, 2007; Larson-Hall, 2010; Peck et al., 2012). It was also agreed by Hoaglin, Iglewicz, and Tukey (1986) that although the use of boxplot was practically simple and routine, it was able to spot multiple outliers. It could also be used for a data set which was not normally distributed as it depends on median rather than the mean score (Walfish, 2006).

Boxplot that was aligned vertically displayed the largest score on top and subsequent scores were arranged along a line till the smallest score at the bottom (Rumsey, 2011). Dalgaard (2008) indicated both hinges of the box showed the first quartile ($Q_1$) and third quartile ($Q_3$) with median ($Q_2$) shown by a middle line drawn inside the box. Median indicated the middle score of the distribution. Ott and Longnecker (2010) further stated that the box length which showed the interquartile range, IQR (IQR = $Q_3 - Q_1$) comprised 50% scores of the distribution, with 25% on either side of the median line within the box.

Line segments or "whiskers" from both ends of the box extended to the largest and smallest scores of data set that falls within a distance of 1.5 times of the box length (Dalgaard, 2008) or 1.5(IQR), were non-outliers (Chawsheen & Latif, 2006; Devore & Berk, 2007; Larson-Hall, 2010). Devore and Berk (2007) labelled the largest and smallest data values as upper adjacent value and lower adjacent value respectively. The terms upper adjacent value and lower adjacent value could also be called "upper inner fence" and "lower inner fence" respectively (Ott & Longnecker, 2010, p. 100). The graphical boxplot with the terms used was as shown in Figure 3.4.




Note: The boxplot was not drawn to scale

**Figure 3.4: Boxplot and outliers**

The cutoff values for $Q_3 + 3(\text{IQR})$ and $Q_1 - 3(\text{IQR})$ were known as upper outer fence and lower outer fence respectively (Ott & Longnecker, 2010, p. 100). Hoaglin, Iglewicz, and Tukey (1986) suggested a more resistant outlier labelling rule that scores which came before lower inner fence that is $Q_1 - k(\text{IQR})$ and scores came after upper inner fence, $Q_3 + k(\text{IQR})$ with $k = 1.5$, were considered as outliers. In addition, scores lay between an inner fence and an outer fence on either side were considered as mild outliers and scores beyond an outer fence on either side were termed extreme outliers (Chawsheen & Latif, 2006; Dawson, 2011; Devore & Berk, 2007; Ott & Longnecker, 2010).

In this study, boxplots of two dependent variables, perceptual learning style preferences and language learning strategies, were drawn with the assistance of SPSS. Each respondent was assigned an ID for specific identification of outliers in the SPSS boxplot output. As shown in Figure 3.5, the side-by-side boxplot showed that there were outliers on the scores of all the six categories of perceptual learning style preferences of respondents. Presence of mild outliers was shown with small circles and extreme outliers were indicated by asterisks (Warner, 2013).

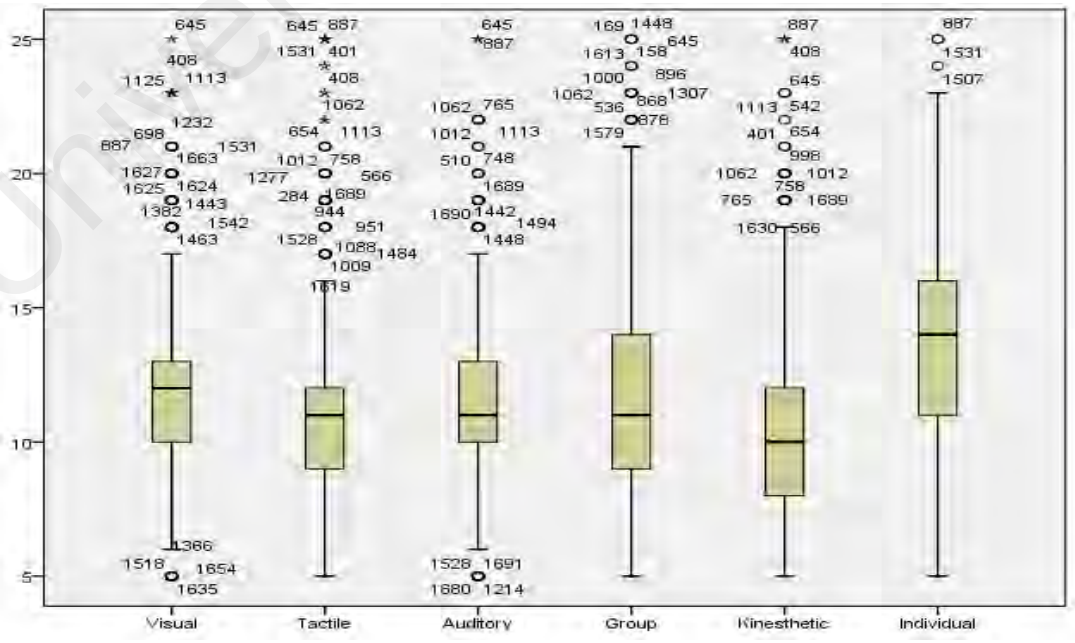



**Figure 3.5: Boxplot with outliers of perceptual learning style preferences**

As the side-by-side boxplot did not show all the outliers that could be due to its large number, cutting points of upper and lower inner fences were used to identify all the actual outliers. First and third quartiles ($Q_1$ and $Q_3$) which were also known as 25th and 75th percentiles of the distribution respectively were computed through SPSS. These values were then used to calculate the values of both inner and outer fences of the boxplot as shown in Table 3.11.

**Table 3.11: Outliers of perceptual learning style preferences**

| | **Perceptual learning style preferences** | | | | | |
|---|---|---|---|---|---|---|
| | **Visual** | **Tactile** | **Auditory** | **Group** | **Kinesthetic** | **Individual** |
| First quartile, $Q_1$ | 10.00 | 9.00 | 10.00 | 9.00 | 8.00 | 11.00 |
| Third quartile, $Q_3$ | 13.00 | 12.00 | 13.00 | 14.00 | 12.00 | 16.00 |
| $Q_1 - 1.5$(IQR) | 5.50 | 4.50 | 5.50 | 1.50 | 2.00 | 3.50 |
| $Q_3 + 1.5$(IQR) | 17.50 | 16.50 | 17.50 | 21.50 | 18.00 | 23.50 |
| $Q_1 - 3$(IQR) | 1.00 | .00 | 1.00 | -6.00 | -4.00 | -4.00 |
| $Q_3 + 3$(IQR) | 22.00 | 21.00 | 22.00 | 29.00 | 24.00 | 31.00 |
| No. of mild outliers | 70 | 45 | 56 | 15 | 19 | 3 |
| (i) $< [Q_1 - 1.5(IQR)]$ | (24) | (0) | (21) | (0) | (0) | (0) |
| (ii) $> [Q_3 + 1.5(IQR)]$ | (46) | (45) | (35) | (15) | (19) | (3) |
| No. of extreme outliers | 4 | 6 | 2 | 0 | 2 | 0 |
| (i) $< [Q_1 - 3(IQR)]$ | (0) | (0) | (0) | (0) | (0) | (0) |
| (ii) $> [Q_3 + 3(IQR)]$ | (4) | (6) | (2) | (0) | (2) | (0) |
| Total outliers: | 74 | 51 | 58 | 15 | 21 | 3 |
| Percentage of outliers, % | 4.33 | 2.99 | 3.40 | .88 | 1.23 | .18 |
| Valid cases, $N$ | 1634 | 1657 | 1650 | 1693 | 1687 | 1705 |

Note: IQR = Interquartile Range; IQR = $Q_3 - Q$; < = "below"; > = "above"

Based on Table 3.11, there were 70 mild outliers and 4 extreme outliers for visual learning style. With a total of 74 outliers for visual learning style that made up 4.33% of 1708 respondents surveyed, this reduced the sample size to 1634 as valid respondents for subsequent statistical analyses. Likewise, there were 51 (2.99%) outliers for tactile, 58 (3.40%) outliers for auditory, 15 (.88%) outliers for group, 21 (1.23%) outliers for kinesthetic and 3 (.18%) outliers for individual learning styles. Hence, as a whole, 222 or 2.17% of the scores for perceptual learning style preferences were outliers.

Side-by-side boxplot of language learning strategies was also drawn and the results indicated outliers were present for five out six language learning strategies namely memory, cognitive, metacognitive, affective and social strategies except for compensation strategies (Figure 3.6).

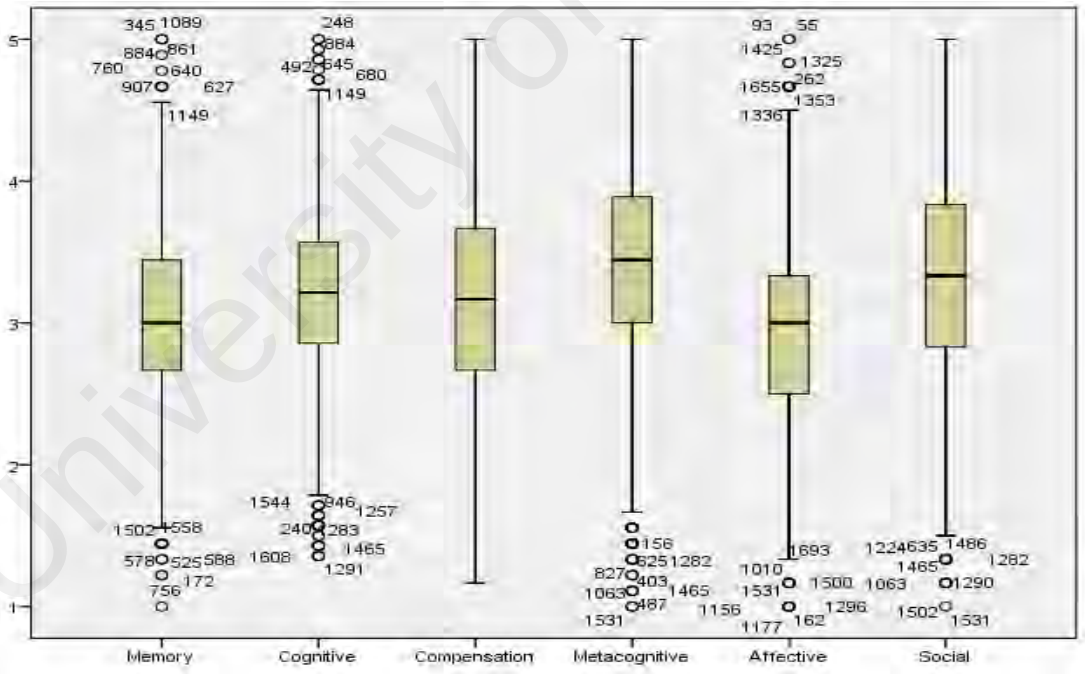



**Figure 3.6: Boxplots with outliers of language learning strategies**

In order to locate all the outliers of language learning strategies, the same calculating steps as used in perceptual learning style preferences were performed to determine the cutting points for inner and outer fences on both sides of the boxplot. Then, these values of fences were used to identify the mild and extreme outliers as indicated in Table 3.12.

**Table 3.12: Outliers of language learning strategies**

| | **Language learning strategies** | | | | | |
|---|---|---|---|---|---|---|
| | **Memory** | **Cognitive** | **Compensation** | **Metacognitive** | **Affective** | **Social** |
| First quartile, $Q_1$ | 2.67 | 2.86 | 2.67 | 3.00 | 2.50 | 2.83 |
| Third quartile, $Q_3$ | 3.44 | 3.57 | 3.67 | 3.89 | 3.33 | 3.83 |
| $Q_1 - 1.5$(IQR) | 1.52 | 1.80 | 1.17 | 1.67 | 1.26 | 1.33 |
| $Q_3 + 1.5$(IQR) | 4.60 | 4.64 | 5.17 | 5.23 | 4.58 | 5.33 |
| $Q_1 - 3$(IQR) | .36 | .73 | -.33 | .33 | .01 | -.17 |
| $Q_3 + 3$(IQR) | 5.75 | 5.70 | 6.67 | 6.56 | 5.82 | 6.83 |
| No. of mild outliers | 22 | 44 | 0 | 22 | 23 | 6 |
| (i) $< [Q_1 - 1.5(IQR)]$ | (13) | (33) | (0) | (22) | (10) | (6) |
| (ii) $> [Q_3 + 1.5(IQR)]$ | (9) | (11) | (0) | (0) | (13) | (0) |
| No. of extreme outliers | 0 | 0 | 0 | 0 | 0 | 0 |
| (i) $< [Q_1 - 3(IQR)]$ | (0) | (0) | (0) | (0) | (0) | (0) |
| (ii) $> [Q_3 + 3(IQR)]$ | (0) | (0) | (0) | (0) | (0) | (0) |
| Total outliers: | 22 | 44 | 0 | 22 | 23 | 6 |
| Percentage of outliers, % | 1.29 | 2.58 | .00 | 1.29 | 1.35 | .35 |
| Valid cases, $N$ | 1686 | 1664 | 1708 | 1686 | 1685 | 1702 |

Note: IQR = Interquartile Range; IQR = $Q_3 - Q$; < = "below"; > = "above"

Based on Table 3.12, there were 22 outliers for memory strategies that made up 1.29% of 1708 survey respondents and reduced the valid sample size to 1686 respodents for subsequent statistical analyses. Meanwhile there were 44 (2.58%) outliers for cognitive, 22 (1.29%) outliers for metacognitive, 23 (1.35%) outliers for affective and 6 (.35%) for social strategies. In total, 117 or 1.14% of the scores for language learning strategies were outliers.

Importance of identification and treatment of outliers could not be denied (Yuen & Mu, 2012). Presence of both outliers and extreme outliers tended to skew the distribution (Field, 2009), distorted statistics that might lead to type I and type II errors (Tabachnick & Fidell, 2007) and producing error in statistical findings (Ellison et al., 2009; Wegner, 2007). Outliers might skew any measures of central tendency (Greasley, 2008) such as the mean as its calculation incorporated all the values of a study (Larson-Hall, 2010). Hawkins (1980) stated outliers which contained no information about a distribution should be discarded. Osborne and Overbay's study (2004) revealed removal of outliers could significantly reduce error of statistical inference in most cases. Chawsheen and Latif (2006) further added outliers which were out of the range of data set and distorted the statistical inference should be removed through an informed choice rather than simply deleted them.

Warner (2013) indicated reasonable judgment of the researcher was required in handling outliers. Upon consideration of the effect of outliers, 339 (or 1.65%) outliers which were detected for two dependent variables, perceptual learning style preferences (222 or 2.17%) and language learning strategies (117 or 1.14%) in this study were discarded. Ellison et al. (2009) stated rejection of outliers which comprised a small portion of the data set was permissible. Hunter and Schmidt (2004) added extreme values in a large sample size would be true outliers and could be removed as the sampling error

was small. Validity of outliers as good data was also uncertain and researchers could decide to delete those outliers (Chapman, 2005).

Deletion of obvious outliers was common for most researchers (Afifi et al. 2004). Pirker (2009) who examined 115 marketing journal publications which comprised seven different analytical methods revealed 49.57% of the researchers deleted the outliers with statistical reasons. Hence, it was crucial to statistically examine the appropriateness of removing outliers in this study. In line with this, coefficients of skewness and kurtosis that described distributions of dependent variables were calculated. This could be done by running the analyses with and without outliers for the same dataset (Albright & Winston, 2017; Norris, Qureshi, Howitt, & Cramer, 2012).

### 3.8.2 Skewness and Kurtosis

Both skewness and kurtosis were two key numerical statistics that could assess normality of a sample (Morgan & Griego, 1998; Vose, 2008) by describing the shape of its frequency distribution (Jain & Aggarwal, 2008). As the sample size of this study exceeded 300, formal normality tests such as Shapiro-Wilk test and Kolmogorov-Smirnov test might not be reliable to assess its normality (Kim, 2013). Afifi et al. (2004) also stated Kolmogorov-Smirnov test had higher tendency to reject null hypothesis ($H_0$) when the sample size was large which led to poor statistical power.

Specifically, skewness described deviation (Larson-Hall, 2010) or degree of asymmetry of a frequency distribution (Jain, Gupta, & Gupta, 2006). According to Karl Pearson's coefficient of skewness, the coefficient would be zero for symmetric distribution while positive coefficient showed a positively skewed distribution and negative coefficient indicated a negatively skewed distribution (Shenoy, Srivastava, &

Sharma, 2002). Symmetric distribution revealed a normal distribution (Landau & Everitt, 2004).

The distribution skewed to one end of its values when most data values clumped at one side and portrayed a tail of values with low frequency at the other end (LeBlanc, 2004). A positively skewed distribution or skewed right (Doane & Seward, 2011) has most of its data values clumped to the left of the mean (Kim, 2013) which led to lower range of values with a long tail at the upper end (LeBlanc, 2004). Vice versa, a negatively skewed distribution or skewed left (Doane & Seward, 2011) showed its tail at the lower end of the range of values (LeBlanc, 2004). Effect of skewness would be greater on type I and type II errors for small sample size (Ott & Longnecker, 2010).

On the other hand, kurtosis measured flatness or peakedness of a distribution which described its degree of concentration (Sharma, 2007) in relation to a normal curve (Jain & Aggarwal, 2008). When the distribution was mesokurtic, its curve was normal or symmetry (Sharma, 2007) with its measure of kurtosis denoted by gamma two, $\gamma_2 = 0$ (Jain et al., 2006) or closes to zero (Diamantopoulos & Schlegelmilch, 2000). The distribution with higher peak than the normal curve was termed as leptokurtic whereas a lower peak than normal curve was defined as platykurtic (Jain & Aggarwal, 2008). Positive values of kurtosis ($\gamma_2 > 0$) reflected leptokurtic distributions while negative values ($\gamma_2 < 0$) indicated platykurtic distributions (Field, 2009; Jain et al., 2006).

**Table 3.13: Skewness and kurtosis of perceptual learning style preferences**

| Perceptual learning style preferences | Skewness | | | | Kurtosis | | | |
|---|---|---|---|---|---|---|---|---|
| | With outliers | | Without outliers | | With outliers | | Without outliers | |
| | Coef. | *SE* | Coef. | *SE* | Coef. | *SE* | Coef. | *SE* |
| Visual | .334 | .059 | -.083 | .061 | .772 | .118 | -.432 | .121 |
| Tactile | .497 | .059 | -.179 | .060 | 1.345 | .118 | -.480 | .120 |
| Auditory | .358 | .059 | -.017 | .060 | .916 | .118 | -.463 | .120 |
| Group | .489 | .059 | .305 | .059 | .222 | .118 | -.298 | .119 |
| Kinesthetic | .521 | .059 | .144 | .060 | .903 | .118 | -.322 | .119 |
| Individual | -.080 | .059 | -.111 | .059 | -.283 | .118 | -.340 | .118 |

Note: Coef. = Coefficient; *SE* = Standard error

By removing all outliers of perceptual learning style preferences, skewness of five perceptual learning style preferences had improved except for individual learning style (Table 3.13). Nevertheless, coefficients of skewness for all the categories of perceptual learning style preferences still ranged from -.179 (*SE* = .060) to .305 (*SE* = .059). Based on categorisation of coefficients of skewness by Bulmer (1979), all the distributions of perceptual learning style preferences were "fairly symmetrical" (p. 63) as all the absolute values of skewness coefficients ranged between 0 and .5. Rubin (2010) further stated the skewness statistics that falled between +2 and –2 showed a minor degree of skewness. Virtually, all distribution of real-world data have some degree of skewness (Rubin, 2010) and skewness coefficient of exactly zero was quite unlikely (Brown, 2016; GoodData Corporation, 2015) due to sampling fluctuations (Diamantopoulos & Schlegelmilch, 2000).

Kurtosis for four perceptual learning style preferences were also improved except for group and individual learning styles that showed a slightly increase in their values. In this study, kurtosis of all the perceptual learning style preferences ranged between -.480 (*SE* = .120) and -.298 (*SE* = .119). Negative values of kurtosis indicated all the distributions were slightly platykurtic (Field, 2009; Jain et al., 2006) in which each distribution had a lower peak than the normal curve as less scores concentrated at the centre (Jain & Aggarwal, 2008). However, the distributions were still approximately normal based on cutting point by Rubin (2010) who stated kurtosis statistic which was less than –1 as platykurtic distributions.

Small standard errors indicated estimates of skewness and kurtoses were precise with small margin of errors (Vogt, Vogt, Gardner, & Haeffele, 2014). As not all the categories of perceptual learning style preferences showed substantial non-normal distributions, removal of outliers for each preference of perceptual learning style was appropriate.

**Table 3.14: Skewness and kurtosis of language learning strategies**

| Language learning strategies | Skewness | | | | Kurtosis | | | |
|---|---|---|---|---|---|---|---|---|
| | With outliers | | Without outliers | | With outliers | | Without outliers | |
| | **Coef.** | ***SE*** | **Coef.** | ***SE*** | **Coef.** | ***SE*** | **Coef.** | ***SE*** |
| Memory | .071 | .059 | .098 | .060 | .205 | .118 | -.199 | .119 |
| Cognitive | -.122 | .059 | .066 | .060 | .313 | .118 | -.254 | .120 |
| Compensation | .007 | .059 | .007 | .059 | -.021 | .118 | -.021 | .118 |
| Metacognitive | -.298 | .059 | -.082 | .060 | .094 | .118 | -.361 | .119 |
| Affective | -.020 | .059 | -.029 | .060 | .224 | .118 | -.150 | .119 |
| Social | -.051 | .059 | .009 | .059 | -.067 | .118 | -.174 | .119 |

Note: Coef. = Coefficient; *SE* = Standard error

After removal of outliers for each language learning strategy, skewness for four language learning strategies became better except coefficients of skewness for memory and affective strategies which showed minor increments (Table 3.14). Besides, kurtosis for four distributions became closer to normal curves except for metacognitive and social strategies. However, the distributions for the six categories of language learning strategies with coefficients of skewness ranged from -.082 (*SE* = .060) to .098 (*SE* = .060) were still "fairly symmetrical" as categorised by Bulmer (1979). On the other hand, negative kurtosis statistics that ranged between -.361 (*SE* = .119) and -.021 (*SE* = .118) for all the categories of language learning strategies indicated that all the distibutions were slightly flatter than the normal curve but they were still approximately normal (Rubin, 2010). Hence, removal of outliers of language learning strategies in this study was appropriate.

### 3.8.3 One-way Analysis of Variance

One-way Analysis of Variance (ANOVA) was used to compare perceptual learning style preferences and language learning strategies respectively. Both perceptual learning style preferences and language learning strategies were continuous dependent variables with an interval scale that had six categories respectively. All the categories of perceptual learning style preferences were measured through the total scores obtained from five items of each category. Measurement of the six categories of language learning strategies used the mean score as each category comprised unequal number of items. Pavkov and Pierce (2003) mentioned One-way ANOVA could be used to compare the means when there were more than two categories. This analysis involved a continuous dependent variable on a sample of individuals grouped according to one independent variable, categorical variable or factor (George & Mallery, 2005). Puri (1996) further pointed out "One-way" comes from the fact that one independent variable was involved for all values of cases.

In this study, One-way ANOVA was carried out to indicate that whether there were any significant differences in the undergraduates' perceptual learning style preferences in learning English language (RQ1). A similar test was used to identify whether there were any significant differences for language learning strategies among these learners (RQ2). *F*-value from a one-way ANOVA only indicated whether there was a significant difference between the group scores (Urdan, 2005). With a significant *F*-value, post-hoc multiple comparison tests could be used to determine the source of differences (Morgan, Griego, & Gloeckner, 2001; Schlotzhauer, 2007). As the post-hoc tests involved pairwise comparisons of the scores between groups (Norušis, 2006), differences between all the possible pairs of scores could be identified (Kirkpatrick & Feeney, 2006). Among the various available post-hoc tests in SPSS, Tukey's Honestly Significant Difference (HSD) test and Scheffé test are two common post-hoc or posteriori tests adopted by researchers.

Tukey's HSD test controls Type I error rate very well and is powerful when testing large numbers of means with similar population variances. It also has greater statistical power (Field, 2005) than Scheffé which is quite conservative for pairwise comparisons (Howell, 2010; Morgan et al., 2001; Wike, 2009). Tukey's HSD test, a more sensitive test, is quite likely to accept a difference as significant (Hinton, 1995). When the post-hoc test is more conservative, it is more difficult to find statistical significant differences between groups compared to Tukey's HSD, which is a moderately liberal test (Urdan, 2005). This is because Scheffé test requires a larger sample mean difference or more evidence before concluding the difference is significant and is less likely to lead to Type I error (Gravetter & Wallnau, 2007). However, reduction of Type I error also increases Type II error that fails to detect the present differences between the groups (Stevens, 2002). Scheffé proposed that people may prefer to run the test at $\alpha = .10$ (Howell, 2010). As such, Tukey's HSD test was used in this study with $\alpha$-value set at .05.

### 3.8.4 Pearson's Product-Moment Correlation

Pearson's product-moment correlation measures the direction and strength of the linear relationship between two quantitative variables (Moore, 2004) with interval-ratio scale (Frankfort-Nachmias & Leon-Guerrero, 2006). Similarly, Pavkov and Pierce (2003) also stated it measured the association between two variables. Correlation does not necessarily indicate causation but sometimes the causation is obvious (George & Mallery, 2005).

In other words, Pearson's product-moment correlation was used to measure the linear relationship between the two continuous dependent variables namely perceptual learning style preferences and language learning strategies in this study. The findings of correlation with $\alpha$-value set at .05 were used to answer the research question 3. Moore (2004) mentioned the values of correlation coefficient, *r,* indicated the strength of linear relationship ranged between -1 and 1. Positive value of *r* indicates positive association between the variables while negative value of *r* indicates negative association (Moore, 2004). In addition, Moore stated value of *r* near 0 indicates a very weak linear relationship. Pavkov and Pierce (2003) added that a correlation coefficient of $r = .0$ indicates absolutely no association between the variables. With the increase in *r* to –1 or 1, the strength of the linear relationship increases (Moore, 2004).

### 3.8.5 Validation of Quantitative Analysing Procedure

After analysing the quantitative data based on Research Questions 1, 2 and 3, two qualified and experienced tertiary lecturers in the area of statistics were requested to validate its statistical analysing procedure (Appendix L). The title, research objectives and research questions were explained to these lecturers. They were also briefed on the tabulated findings, which were based on the three research questions in this study besides

revealing particular statistical output that indicated the analysing procedures using the statistical software, SPSS.

### 3.9 Qualitative Conceptualisation

Phase II of the main study involved qualitative data gained from personal face-to-face interviews. The central aim of this qualitative approach was to further investigate factors that influenced participants' perceptual learning style preferences (Research Question 4) and language learning strategies (Research Question 5) in learning English by thematic analysis. According to Seidel (1998), the analysis of qualitative data could be simplified into a model that comprised three parts, namely "noticing, collecting and thinking about interesting things" (p. 1) as shown in Figure 3.7. While the researcher was reading the interview transcripts, related lines or sections were sorted into categories or subcategories of factors that might influence their perceptual learning style preferences and language learning strategies. Such categories were examined closely in order to confirm whether these categories could fit into the same or different factors. The whole process of analyzing the interview transcripts would be repeated until no further new categories or subcategories were found. Seidel also agreed that the analytical process was iterative and progressive as the cycle would repeat, reverse or each part may include the whole process.

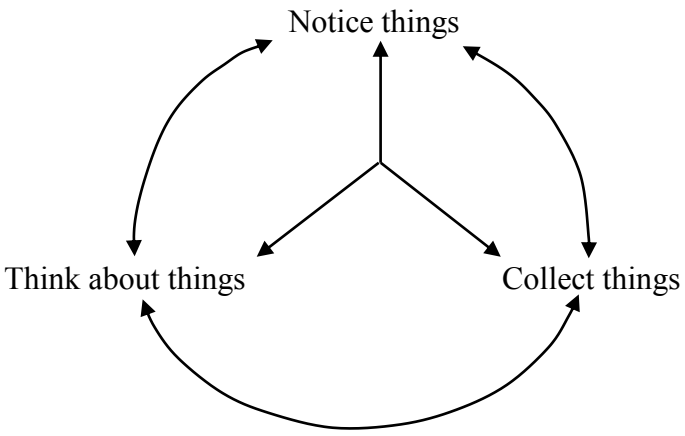



**Figure 3.7: Data analysis process of qualitative data**

Creswell (2007) added the qualitative analysis generally may begin with preparing and organising the data such as text data in transcripts. It was followed by narrowing the data into codes through coding process. The codes would then be reduced and discussed or presented in tables or figures.

### 3.9.1 Transcription

Transcription involved conversion of audiotape recordings into text data (Creswell, 2012). In this study, all the MP3 formats of audio recording during the interviews were transcribed using a computer software, namely Express Scribe version 5.78. Standard orthography was used in transcribing all the conversations between the researcher as the interviewer and interviewees. Transcription would be easier by using standard orthography as it was based on the norm of written language (Kowal & O'Connell, 2004). Although the transcribing task was labour intensive, details of each interview could be captured in the data when all the words were transcribed (Creswell, 2012).

The transcriptions were typed in Microsoft Word in list form format which comprised four columns namely numbering, indication of speaker either interviewer or interviewee, details of conversation and several recording times at a few assigned columns for an easier retrieval and confirmation of information. Each transcribed interview was saved in different text files in Word. Kowal and O'Connell (2004) indicated accurate and neutral prepared transcripts were important for scientific analysis. This is because transcription could provide an analytic focus on a data set by drawing particular relevant and crucial features of data to the researchers (Gibson & Brown, 2009).

### 3.9.2 Coding and Interpretation of Transcripts

Upon completion of transcription of interviews, text data was coded to allow further in-depth analysis. The text coding was aided by using a software package known as NVivo version 10 designed by QSR International. Welsh (2002) mentioned that NVivo is user-friendly and imported word processing documents can be coded easily. The use of computer-assisted software in searching of attributes especially in large data set can produce results that are more reliable compared to manual method, which might create human error. It also facilitates quick coding when the researcher thinks of any possible thematic connection although it might not necessarily provide much understanding of the data. Before the coding process, each interviewee was assigned with one case node under node classifications menu in NVivo as shown in Figure 3.8. The case node contained the demographic information of each interviewee. These case nodes could be linked to attribute function of NVivo in creating query if necessary.

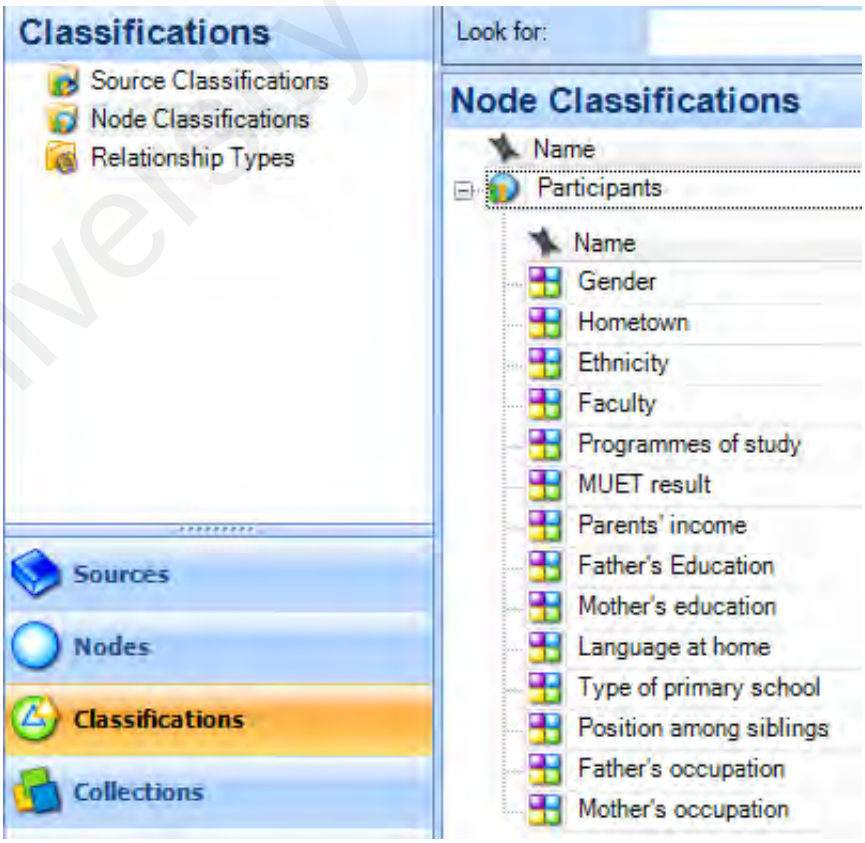



**Figure 3.8: Case node of interviewees in NVivo**

In this study, two levels of coding were done. Inductive approach was used in the thematic coding process. The first level of coding started with open coding of broader themes as shown in Figure 3.11. Chunk of related texts or idea derived while reading texts in the transcriptions would be preliminary identified as themes or factors that influenced interviewees' perceptual learning style preferences and language learning strategies. A final list of parent nodes for both dependent variables was attached in Appendix M. These preliminary factors were coded as main codes or parent nodes in NVivo. Apart from this, these preliminary themes would be reviewed throughout the coding process and similar themes would be regrouped and refined. Creswell (2007) mentioned that all the codes should be emphasized equally despite its frequency of occurrence.

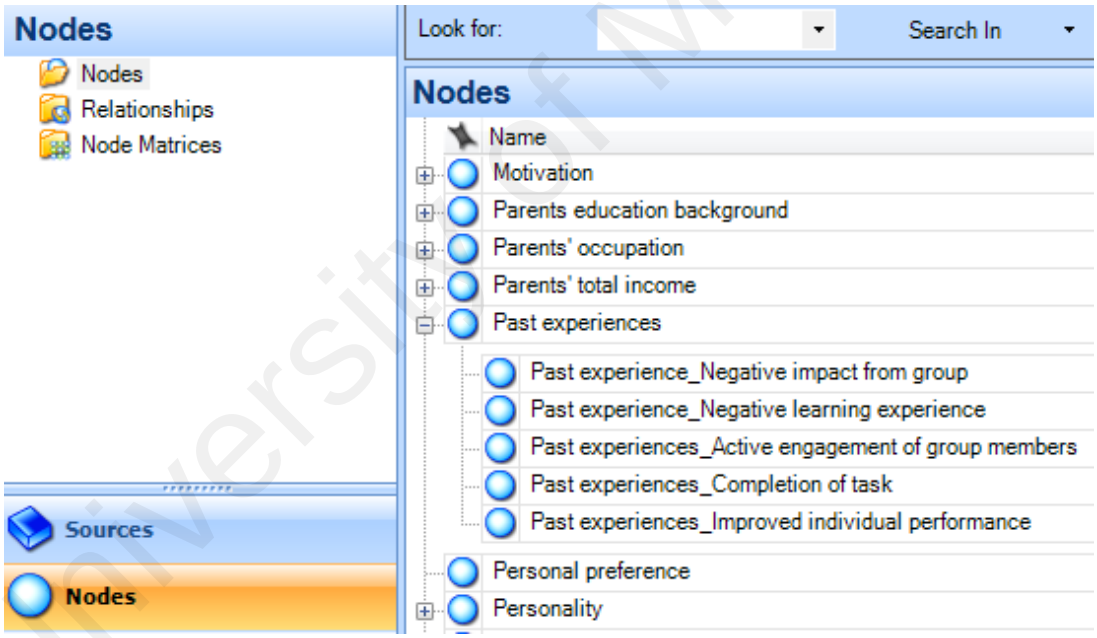



**Figure 3.9: Levels of coding in NVivo**

After the first level of open coding, the second level of coding described as closed or axial coding would be implemented (Figure 3.9). Quotes or statements in each factor or parent node were carefully read through to further subcategorise or subcode the factor. These subcodes or known as child nodes in NVivo further detailed the factors and showed how the factors influenced the learners' perceptual learning style preferences or language

learning strategies. Related texts from interview transcript such as 'it is hard for us to really sit down in a group', 'still taking other elective subjects', 'because of time (constraint)', '(poor) arrangement' and 'not everybody involves (in group discussion) but only us (are active)' were coded into the same child node that is 'negative impact from group' under the parent node, 'past experiences' (Figure 3.10). The child nodes might be removed, merged or transferred to other child nodes or another parent node if necessary. New child node was created for coding any unusual issues indicated by interviewees. Creswell (2007) also supported additional emergent codes that reflected participant's views should be included during the analysis besides 'prefigured' codes.

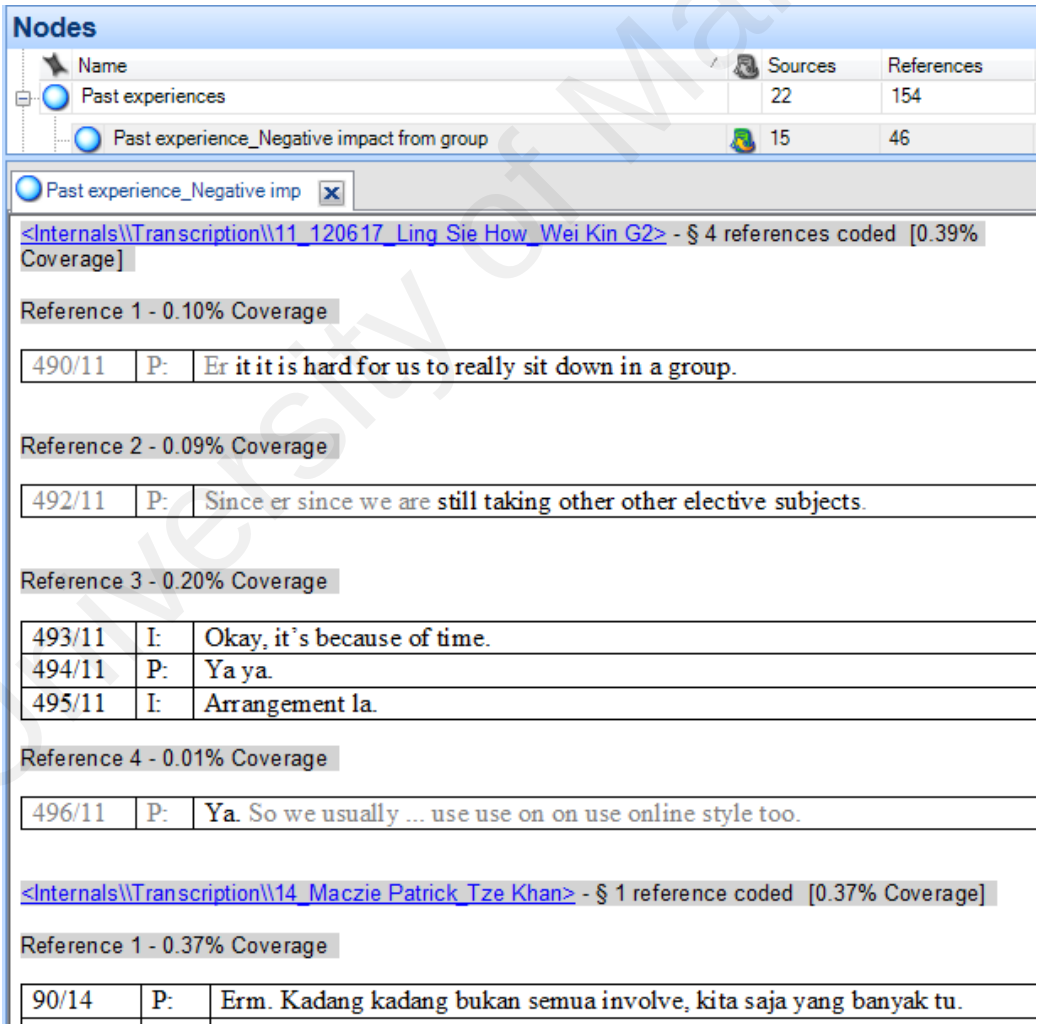



**Figure 3.10: Transcribed texts in particular child node**

Each child node might be attached with a linked memo provided by NVivo application if necessary. The linked memos were used by the researcher to write some short notes, to record certain keywords or sentences along the coding process. This would help the researcher to retrieve and organise the prior ideas after coding process of all the transcripts was completed.

Seidel (1998) suggested heuristic coding of words after noticing interesting texts in the transcripts can be used as a preliminary tool in helping the researchers to reorganise data, provide different views of data and highlight some crucial attributes. However, the researcher still needs to intensively think about the phenomena studied by fitting pieces of coded segments of data with deeper inspection of data. This may facilitate identification of patterns and relationship within and across the collection as the foundation for making general discoveries. It was in line with Welsh (2002) who stated the researchers should combine the best features of electronic and manual methods in qualitative analysis. Although transcribed texts were electronically coded into various nodes in NVivo, written memos and short summaries of nodes are still important for researchers to identify and analyse individual thematic ideas across the data and incorporate all the themes together in order to form the whole picture of the phenomena studied.

After the coding process, all the child nodes in each parent node were reviewed carefully to regroup or transfer to other child nodes or parent node if applicable. Each parent node and related child codes would then be used to interpret and write the discussion. Interrelation between codes was also examined based on research questions and related research literature. Creswell (2007) stated that data should be reduced to a manageable set of categories, themes or dimension of information. Further interpretation of data is crucial for making sense of data. Gilgun and Abrams (2012) also mentioned

that linking of qualitative findings related to prior research and theory may widen the applicability of the findings.

### 3.9.3 Inter-rater Agreement

After the coding process of transcribed texts from audio recorded interviews, inter-rater agreement of data coding was calculated. Inter-rater agreement could assess the reliability in rating qualitative data between different raters (Banerjee, Capozzoli, McSweeney, & Sinha, 1999). Inter-rater agreement, which was also known as inter-rater reliability, demonstrated the consistency in observational rating which quantified the degree of agreement between the coders (Hallgren, 2012). The inter-rater agreement was necessary as different individuals might experience and interpret the phenomena differently (McHugh, 2012). Such inter-rater reliability also indicated the intrinsic precision of classification process (Banerjee et al., 1999) and showed the quality of categories defined and the raters' ability in applying those categories (Wareens, 2013a).

As statistical measure in calculating inter-rater agreement was important (Hallgren, 2012), Cohen's unweighted kappa coefficient, which was one of the common statistics (Gwet, 2010) was employed in this study. The kappa statistic was unweighted as this study did not taken into account the degree of disagreement between the inter-raters (Altman, 1991). The kappa coefficient addressed the level of agreement between two raters in coding nominal scale data (Cohen, 1960; Hallgren, 2012; Hayes & Krippendorff, 2007; Watkins & Pacheco, 2001; Zwick, 1986). The use of kappa coefficient could increase the reliability of qualitative findings (Watkins & Pacheco, 2001) as it could adjust the observed proportional agreement between the two raters by correcting the proportion of agreement expected by chance (Carletta, 1996; Hallgren, 2012; Hayes &

Krippendorff, 2007). This produced a better description about the degree of inter-rater agreement than the proportion of observed agreement ($P_0$) alone (Zwick, 1986).

Table 3.15 shows the interpretation of kappa coefficients by Landis and Koch (1977). The values of kappa coefficient ranged from reflected –1 to 1 could reflect the strength of agreement beyond chance between inter-raters. Its negative values were often considered as of no practical mean (Watkins & Pacheco, 2001) because the agreement between both raters was less than the expected agreement by chance (Warrens, 2013b). Warrens further stated that value of *k* equals to 1 meant perfect agreement and 0 means agreement was completely due to chance.

**Table 3.15: Benchmark scale of kappa coefficient**

| **Kappa coefficient, *k*** | **Strength of sgreement** |
|---|---|
| < .00 | Poor |
| .00 – .20 | Slight |
| .21 – .40 | Fair |
| .41 – .60 | Moderate |
| .61 – .80 | Substantial |
| .81 – 1.00 | Almost perfect |

As the rating is time-intensive, Hallgren (2012) suggested that it would be practical to sample some transcripts for rating and generalise for the whole sample. In this study, the rating tasks were performed by two raters namely the researcher, as the first rater and an experienced second language lecturer as the second rater (Appendix N). Five interview transcripts were chosen for rating due to time constraint. Before the rating, all the six categories of two dependent variables, namely perceptual learning style preferences and language learning strategies were described to the Rater 2. Rater 2 would then identify factors that would influence the two dependent variables independently and wrote these factors or comments manually next to the related paragraph on the transcripts. These

identified factors were compared against the ones identified by the researcher (Rater 1) to count the frequencies of agreement as indicated in Table 3.16.

**Table 3.16: Frequency matrix of inter-rater agreement**

| | | **Factors identified by rater 1, researcher** | | |
|---|---|---|---|---|
| | | **Yes** | **No** | **Total** |
| **Factors identified by rater 2** | **Yes** | (*a*)<br>136 | (*b*)<br>5 | (*a* + *b*)<br>141 |
| | **No** | (*c*)<br>2 | (*d*)<br>13 | (*c* + *d*)<br>15 |
| **Total** | | (*a* + *c*)<br>138 | (*b* + *d*)<br>18 | (*a* + *b* + *c* + *d*)<br>156 |

in which

*a*: Both raters have the same agreement of factors

*b*: Disagreement of factors; factor identified by Rater 2 was accepted

*c*: Disagreement of factors; factor identified by Rater 1 was accepted

*d:* Disagreement of factors; factors identified by both raters were changed or discarded

Based on the formulae provided by Cohen (1960), calculation of kappa coefficient of inter-rater agreement was as follows:

$$\text{Proportion of observed agreement, } P_0 = \frac{a+d}{a+b+c+d} = \frac{136+13}{156} = .9551$$

$$\text{Marginal proportion } A = \frac{(a+b)(a+c)}{a+b+c+d} = \frac{141(138)}{156} = 124.7308$$

$$\text{Marginal proportion } B = \frac{(c+d)(b+d)}{a+b+c+d} = \frac{15(18)}{156} = 1.7308$$

$$\text{Proportion of agreement expected by chance, } P_e = \frac{Marginal\ proportions\ (A\ +\ B)}{a+\ b+c+d} = \frac{124.7308+\ 1.7308}{156} = .8107$$

$$\text{Unweighted kappa coefficient of inter-rater agreement, } k = \frac{P_0 - P_e}{1 - P_e} = \frac{.9551 - .8107}{1 - .8107} = .7628$$

Proportion of observed agreement, $P_0$ = .9551 indicated 95.51% of inter-rater agreement included chance agreement between both raters. Hence, the proportion of agreement that was expected to occur by chance ($P_e$ = .8107) based on marginal proportion from both raters ($A$ = 124.7308, $B$ = .8107) was calculated. When considering the chance agreement, this would avoid over-estimation of inter-rater agreement and generalize a standardised measure of agreement across the studies (Hallgren, 2012). The unweighted kappa coefficient of inter-rater agreement, $k$ = .7628 indicated a substantially strong agreement (Landis & Koch, 1977) between the two raters in rating the qualitative data of this study.

## 3.10 Conclusion

This chapter provided an overall description and rationale on the research methodology of this study. Explanation of research design selected, sampling of subjects, data collection instruments and procedure for both pilot and main studies were provided. This included descriptions on data analysis for quantitative and qualitative of this study. Subsequent chapter will discuss quantitative and qualitative findings from the main study.

# CHAPTER 4: RESEARCH FINDINGS

## 4.1 Introduction

This chapter reports the quantitative and qualitative findings from this study. Quantitative data was obtained from survey questionnaires, namely Reid's (1987) Perceptual Learning Style Preference Questionnaire and Oxford' (1990a) Strategy Inventory for Language Learning version 7. On the other hand, individual interviews were conducted to obtain the qualitative data for this study. Five research questions (RQ) were formulated to fulfil the aim of the study. Out of these questions, three research questions were related to quantitative findings as shown below:

RQ1: What are the perceptual learning style preferences of undergraduates in learning English language using Perceptual Learning Style Preference Questionnaire (PLSPQ) (Reid, 1987)?

RQ2: What are the language learning strategies of undergraduates using Strategy Inventory for Language Learning (SILL) version 7.0 (Oxford, 1990a)?

RQ3: What are the correlation between perceptual learning style preferences and language learning strategies?

Quantitative data from this study was analysed through descriptive and inferential statistics using a statistical tool namely SPSS (Statistical Package for the Social Sciences). Descriptive statistics were used to display the mean scores and standard deviation of both perceptual learning style preferences (Research Question, RQ1) and language learning strategies (RQ2) among first year undergraduates in Unimas. In addition, inferential statistics namely One-way Analysis of Variance (ANOVA) was used to determine whether there were any overall statistical significant differences between all the six categories in perceptual learning style preferences and language learning strategies

respectively. Tukey's HSD post hoc multiple comparisons was further employed to identify which preferences for learning styles and language learning strategies show significant differences if results for the overall perceptual learning styles or language learning strategies were statistically significant. Other than this, Pearson's product-moment correlation was used to identify the extent of linear correlation between perceptual learning style preferences and language learning strategies (RQ3).

Qualitative findings were employed to address the remaining research question four (RQ4) and the research question five (RQ5). RQ4 will explore the factors that might influence the perceptual learning style preferences whereas RQ5 will determine the factors that might influence the language learning strategies as shown below:

RQ4: What are the factors that influence perceptual learning style preferences?

RQ5: What are the factors that influence language learning strategies?

Qualitative data were obtained through interviews from selected survey respondents in phase II of this main study. After the transcription of taped interviews, related texts were coded using an analytical tool, NVivo. Such interviews were aimed to obtain an overall picture and in-depth understanding of these interviewees' perceptual learning style preferences and language learning strategies in learning English. In addition, these interviews also explored the possible factors that may influence their perceptual learning style preferences and language learning strategies.


**Figure 4.1: 100 most common words used during interviews**

Output of "tag cloud" shown in Figure 4.1 was generated by using "word frequency query" in NVivo 10. It alphabetically listed 100 most frequently used words during interviews based on the all written transcripts. Bigger font size indicates higher frequency of the words used. Larger size of related words such as '*kamu*' or you, like, English, learns, '*macam*' or how, strategy and styles could indicate the focus of this study on the respondents' perceptual learning style preferences and language learning strategies in learning English. For example, the listed words include parents, friends or schools (Figure 4.1) provided the guide to determine some factors that may influence the perceptual learning style preferences and language learning strategies of the respondents in this study.

## 4.2 Perceptual Learning Style Preferences (RQ1)

The first research question was "What are the perceptual learning style preferences of undergraduates in learning English language using Perceptual Learning Style Preference Questionnaire (Reid, 1987)?" Perceptual learning style preferences of first year

undergraduates in learning English language were measured using Reid's (1987) Perceptual Learning Style Preference Questionnaire. These perceptual learning style preferences were categorised into individual, visual, auditory, group, tactile and kinesthetic learning styles (Reid, 1998). Mean scores (*M*) and standard deviation (*SD*) of descriptive statistics were used to portray each perceptual learning style preference as indicated in Table 4.1.

**Table 4.1: Descriptive statistics of perceptual learning style preferences**

| Learning styles | Number of respondents, *n* | *M* | *SD* | Rank |
|---|---|---|---|---|
| Individual | 1705 | 13.31 | 3.85 | 1 |
| Visual | 1634 | 11.47 | 2.46 | 2 |
| Auditory | 1650 | 11.38 | 2.43 | 3 |
| Group | 1693 | 11.24 | 3.52 | 4 |
| Tactile | 1657 | 10.45 | 2.60 | 5 |
| Kinesthetic | 1687 | 10.28 | 2.82 | 6 |

Excluding those outliers, Table 4.1 showed the first year undergraduates in Unimas had the highest preference for individual learning style ($M = 13.31$, $SD = 3.85$), followed by visual learning style ($M = 11.47$, $SD = 2.46$), auditory learning style ($M = 11.38$, $SD = 2.43$), group learning style ($M = 11.24$, $SD = 3.52$) and tactile learning style ($M = 10.45$, $SD = 2.60$). The least preferred style among these undergraduates was kinesthetic learning style ($M = 10.28$, $SD = 2.82$).

Based on the rating scale of PLSPQ (Reid, 1987), these undergraduates' demonstrated minor preferences for individual learning style but negligible preferences for visual, auditory, group, tactile and kinesthetic learning styles. Such interpretations of the scores were based on the three categories of rating scales by Reid's (1987) PLSPQ. The first category describes the preference scores of 13.50 and above as major perceptual learning

style preferences whereas the scores ranged from 11.50 to 13.49 is considered a minor perceptual learning style preference. The last category with the score less than 11.50 is described as a negligible learning style preference. When a learning style preference is categorised as a major preference, it indicates that learner could learn best by using such style whereas minor learning styles denote a learner can still employ that particular style to perform well (Reid, 1998). Reid also indicated a negligible learning style implied the learners might encounter problem in the learning process.

In order to determine whether there were statistical significant differences among the six perceptual learning style preferences, One-way ANOVA test was employed. The *p*-value of *F* statistic .000 was less than the predetermined value of .05 for statistical significance in this study (Table 4.2). This *p*-value indicated the mean scores of the overall perceptual learning style preferences showed a significance difference ($F(5, 1) = 217.970$, $p < .05$). Such result implied the respondents employed various perceptual learning style preferences in learning English language.

**Table 4.2: One-way ANOVA for perceptual learning style preferences**

| | **Variation** | ***SS*** | ***df*** | ***MS*** | ***F*** | ***p*** |
|---|---|---|---|---|---|---|
| Learning styles | between | 9842.319 | 5 | 1968.464 | 217.970* | .000 |
| | within | 90489.749 | 10020 | 9.031 | | |

Since there were statistical significant differences ($p < .05$) in the overall perceptual learning style preferences, subsequent statistical test was employed to identify which categories of perceptual learning style preferences differed significantly. Tukey's HSD post hoc multiple comparisons (Appendix O) indicated the individual learning style ($M = 13.31$), a dominant style by these respondents was significantly different with the remaining categories of perceptual learning styles ($p < .05$). However, there were no significant differences among visual, auditory and group learning styles ($p > .05$).

Nevertheless, visual, auditory and group learning styles were found to differ statistically in comparison to tactile, kinesthetic and individual learning styles ($p < .05$). Result also indicated no statistical significant difference between tactile and kinesthetic learning styles ($p > .05$). Hence, the perceptual learning style preferences employed by these undergraduates in learning English are statistically arranged in the sequence illustrated in Figure 4.2.


Note: "→" means "mean score is higher than"

**Figure 4.2: Significant order of perceptual learning style preferences**

Result showed these first year undergraduates mostly preferred individual learning style in learning English language (Figure 4.2). The scores of visual, auditory and group learning style preferences, which showed no statistical differences among them, were employed less compared to individual learning style but more than tactile and kinesthetic learning styles.

The differences in the mean scores between individual and other perceptual learning style preferences were obvious. It implied these respondents mostly preferred to learn English language individually. Hence, they might prefer to work alone through individual based language activities due to their dominant individual learning style. In addition, a quiet environment with minimal distraction was necessary for them to concentrate, remember and comprehend what they learn easily as shown in the excerpts below:

> $R_1$: I still preferred more individual learning style. If group, for sure there is something or topics to be discussed, Sometimes I cannot tolerate with noisy sound during my study. Easy to understand individually.

> $R_{18}$: For individual, I will feel more comfortable. I can focus more on language … remember better and more understanding.

Such preferences for individual learning style may suggest the respondents were intrinsically motivated to learn English alone. In other words, the inner drive might propel these learners to initiate English language learning when alone. Such style also implied they were not relying on other people to learn a language. Instead, they did not consider individual learning style as an obstacle for them to learn. For these learners who dominantly preferred individual learning style, various means could be used by them to improve their command of language such as reading academic and non-academic materials, watching movies or even listening to songs individually. They were self-motivated and would always try to gain more knowledge to perform better besides being able to communicate fluently with others. They were accountable for their own language learning as indicated by interviewee $R_{18}$. Even though they did not seek much help from others when learning individually, they were still capable to learn the language well and to cope with various language tasks to achieve the desired outcome as indicated in the excerpts below:

> $R_{13}$: It's easier for me to learn it on my own … I tried to gain more and all those tougher words … and then just try to get the meaning of it. In fact, sometimes when I watched those shows which I really like … they actually elaborated a lot with good words and good phrases. So, that's how I learn my English. To me, I learned is basically movie. I really push myself … mainly own motivation. To improve myself, I just have to go through individually.

> $R_{22}$: I practise myself ... I practise through song lyrics (in English language). Like I watch Youtube, I read all the lyrics ... If I read myself, I felt more confident a bit.

> $R_{18}$: English movie also. I can hear it and I can also practise it at the same time … I prefer it alone … And also … listening to the songs … so I can practise it. I think study English … like it is for my own knowledge … so that I am easy to communicate to other people.

Being less competent in language proficiency could be another factor that prompted some respondents to show higher preference for individual learning style in learning English. It could be due to the fear of being laughed by others when committing language errors during the communication process as shown below.

> $R_{17}$: Sometimes when … when we practise with … people right, when we make mistakes, sometimes people laugh with you. And then … then that make me feel down and then that's why prefer individual. I can correct myself, if I realize that mistakes.

> $R_{22}$: Because sometimes if we talk with others, my friends always laugh even with little mistake.

The findings on individual learning style as the most preferred language style and followed by visual learning style to a certain extent contradict with findings of other studies (Al-Tamimi & Shuib, 2009; Chen & Hung, 2012; Obralić & Akbarov, 2012; Reid, 1995; Zokaee et al., 2012) that reported visual learning style as the dominant learning style among undergraduates. For example, a study by Zokaee et al. (2012) on 54 EFL learners showed they mostly preferred visual learning style. Likewise, Al-Tamimi and Shuib's (2009) study indicated most English majors' final year ESL learners in *Universiti Sains Malaysia* favoured visual sensory channel in processing information and a means of achieving understanding. Likewise, Tai's (2013) study on 165 EFL adult learners, which showed individual learning style as the least preferred style also contradicted the current finding in this study.

Besides individual learning style being ranked the top style, visual learning style ($M$ = 11.47, $SD$ = 2.46) was statistically ranked the second preferred style as well as auditory learning style ($M$ = 11.38, $SD$ = 2.43) and group learning style ($M$ = 11.24, $SD$ = 3.52). Such findings showed some respondents preferred information visually during lectures in order to them understand what was being taught. They might also prefer to learn through

integration of information with pictures and diagrams in their language learning process as shown in the excerpts below:

$R_{10}$: I need to have a clear picture so that I know what the person is talking about. So that we can catch what is the message which the person is try to … telling us. It will be better for me la, to study as well.

$R_{24}$: *因为我觉得看东西啦会会比较容易记得*
(because I felt that through looking at something, it is easier to remember it).

In addition, some respondents also demonstrated the quite similar preferences for visual, auditory and group learning styles in language classes. This meant some respondents might combine two or more learning styles in the language learning process. They might enjoy language learning through listening, paying attention at verbal explanation as auditory learners and having conversations or interaction with others as group learners besides using verbal cues as visual learners. Respondents could improve their command of English through learning new vocabularies, pronunciation of words or even construction of new sentences through listening to the song lyrics. Combination of both visual and auditory means in learning perhaps enhanced their understanding easily as indicated in the following excerpts.

$R_{20}$: *Kadang-kadang dengar lagu Bahasa Inggeris ... lepas itu ada* certain, certain *perkataan yang tak faham,* then check *kamuslah, tengok maksud dia apa* … watch movie.
(sometimes listening to English songs … then have certain words that don't understand, then check the dictionary to look for its meaning … watch movie)

$R_{21}$: … *macam mendengar lagu ...susunan ayat kesemua daripada lagu la. Saya lebih kepada ah ... untuk Inggeris melalui lagu Inggeris*. Listening music and practise it … pronounce … *bila menyanyi kan. Bila ambil video dalam Youtube, jadi lebih senang lah sebab visual dan audio. Jadi lebih direct daripada mendengar, lebih mudah untuk faham*.
(… like listening to song … all the word arrangement from that song. I am keener to … for Inggeris through English songs. Listening music and practise it … pronounce … during singing. By taking video from Youtube, it becomes easier because visual and audio. So, more direct through listening, easier to understand)

This implied lectures integrated with short video clips presentation would provide advantages for these visual and auditory learners in retaining information. Felder and Henriques (1995) stated language acquisition, which integrated written texts with visual or auditory presentations would be able to increase learners' understanding and interest. The current finding further supported the importance of incorporating visual and auditory learning tasks in language classes as respondents showed similar preferences for visual and auditory learning styles.

Besides, it was not surprising that group learning style was ranked the fourth preferred by these first year undergraduates. Such result may be due to lack of exposure to learn in groups since they were only in their first year of study at the tertiary level. They had not accustomed themselves to work in groups compared to those who were exposed to the importance of group learning style at university context. Those final year undergraduates may find that occasional discussions and working in group might improve their command of language besides enabling them to complete the allocated task efficiently. For example, Burdett's (2003) study on 344 final year business degree undergraduates at University of South Australia showed 63% of them agreed with the statement that "groups worked well". In addition, Burdett revealed only 26% perceived negatively about their experiences in group work. Such view of group learning implied these learners would achieve better outcome by learning alone. In other words, the duration of English language learning experiences at the tertiary level might be one possible reason that contributed to the highest preferences for individual learning style compared to group learning in this study.

In addition, current results also indicated tactile and kinesthetic learning styles were statistically ranked as the last two preferred styles by these undergraduates. Such results concurred with the study by Mustaffa (2007) on the less proficient students of Bachelor

of Arts in English Language Studies (B.A. ELS) at *Universiti Kebangsaan Malaysia,* which reported majority of the learners' least preferred kinaesthetic and/ or tactile learning styles. For example, interviewees' responses further confirmed the quantitative results where tactile and kinesthetic learning styles were the least preferred styles. During interviews, some respondents stated they were not in favour of "hands-on" experiences with materials and physical engagement in language learning activities like role-playing as indicated below.

> $R_2$: Sometimes I need to focus and understand something. If moving, I cannot focus … (prefer to) sit still.
>
> $R_{12}$: I don't like to talk in front of people.
>
> I.: … There's a nervous uh, feeling I think?
>
> $R_{12}$: Yeah.

Nevertheless, an interviewee [$R_{13}$] viewed language learning activities like presentations were beneficial for them to improve their language learning as they need to use English correctly in the next excerpt.

> $R_{13}$: Hand-on experience, um … mainly because I don't get much opportunities yet. Other than running meeting … they don't really care about your English … your grammar ... except for English classes. Other than that, I didn't really emphasize much ... on the presentation.

The least preference for kinethestic and tactile learning styles suggested a need to reconsider the incorporation of physical involvement related activities like role-plays in the language classes. It would be better if activities conducted in language classes match the learners' preferred learning styles for effective and maximum learning outcomes. Furthermore, since all individuals are unique and learn differently, it may be necessary to further investigate factors that influence learners' preferences for the particular perceptual learning style in learning English language. Qualitative findings from interviews conducted during phase II of the main study were aimed to address this matter.

Quantitative data revealed that individual learning style was significantly most preferred by the first undergraduates whereas the tactile or kinesthetic learning styles were the least preferred by first year undergraduates. Qualitative findings further explained that the possible reasons for them to learn individually. For example, some respondents felt more comfortable to learn alone besides the fear of being laughed by others if committing language errors during conversation. Physical engagement in language learning activities such as role-plays or presentations was not in favour by the respondents and caused them to avoid tactile or kinesthetic learning styles.

## 4.3 Language Learning Strategies (RQ2)

Second research question in this study relates to "What are the language learning strategies of undergraduates using Strategy Inventory for Language Learning (SILL) version 7.0 (Oxford, 1990a)?" Descriptive statistics comprises mean scores (*M*) and standard deviation (*SD*) are used to portray language learning strategies as indicated in Table 4.3.

**Table 4.3: Descriptive statistics of language learning strategies**

| Learning strategies | Number of respondents, *n* | *M* | *SD* | Rank |
|---|---|---|---|---|
| Metacognitive | 1686 | 3.45 | .67 | 1 |
| Social | 1702 | 3.27 | .71 | 2 |
| Cognitive | 1664 | 3.23 | .54 | 3 |
| Compensation | 1708 | 3.16 | .63 | 4 |
| Memory | 1686 | 3.03 | .56 | 5 |
| Affective | 1685 | 2.97 | .60 | 6 |

Table 4.3 displays the frequency of the respondents' use of language learning strategies. Metacognitive strategies ($M$ = 3.45, $SD$ = .67) was the most preferred by respondents in learning English language, followed by social ($M$ = 3.27, $SD$ = .71), cognitive ($M$ = 3.23, $SD$ = .54), compensation ($M$ = 3.16, $SD$ = .63), memory ($M$ = 3.03, $SD$ = .56) and affective ($M$ = 2.97, $SD$ = .60) strategies. In addition, since the mean scores ranged from 2.97 to 3.45 for all language learning strategies, it implied all respondents averagely employed these strategies based on Oxford's (1990a) classification of strategy use.

Such finding corroborates with the findings of other studies (Ab Manan, Alias, Yusof, & Pandian, 2011; Alhaisoni, 2012; Alias, Ab Manan, Yusof, & Pandian, 2012; Božinović & Sindik, 2011; Neo, 2015; Tam, 2013), in which the students had medium use of all the six language learning strategies. Besides, the current study also revealed that these undergraduates least deployed affective strategies. Such finding of lowest preference for affective strategies is in accordance with the findings of other researchers (Alhaysony, 2017; Meshkat & Saeb, 2013; Tam, 2013; Yayla, Kozikoglu, & Celik, 2016; Zare, 2010). On the contrary, the current finding contradicts with the finding by some researchers (Chu, Huang, Shih, & Tsai, 2012; Msuya, 2016; Phonhan, 2016; Razak et al., 2012). For example, the finding by Razak et al. found that the secondary learners mostly employed affective strategies. Such difference in finding compared to the current study might be be due to the learners' levels of education. Learners with tertiary contexts might be able to control their affective aspect in language learning compared to learners from the secondary school level.

In addition, this study also revealed these undergraduates frequently employed indirect strategies ($M$ = 3.23, $SD$ = .69) compared to direct strategies ($M$ = 3.14, $SD$ = .59) significantly ($t(9870) = 6.648$, $p < .05$). Memory, cognitive and compensation strategies

were categorised as direct strategies whereas metacognitive, affective and social strategies were under category of indirect strategies (Oxford, 1990a). Such finding on frequent use of indirect strategies was similar to some empirical studies by various researchers in different contexts and samples (Tan & Kaur, 2015; Yunus et al., 2013). For example, Yunus et al.' study (2013) indicated the gifted students applied more indirect strategies compared to direct strategies.

In order to obtain more in-depth information about learners' use of language learning strategies, further statistical analysis was conducted. One-way ANOVA test was used to determine whether there was a significant difference among the mean scores of six language learning strategies. The result of such difference is indicated in Table 4.4.

**Table 4.4: One-Way ANOVA for language learning strategies**

| | **Variation** | ***SS*** | ***df*** | ***MS*** | ***F*** | ***P*** |
|---|---|---|---|---|---|---|
| Learning strategies | between | 254.795 | 5 | 50.959 | 131.045** | .000 |

One-way ANOVA test indicated that there was a significant difference among the language learning strategies used by these undergraduates in learning English ($F(5, 10125) = 131.045$, $p < .05$). As the $p$-value for $F$ statistics ($p = .000$) was less than the criterion set (.05), it implied the first year undergraduates significantly employed various language learning strategies in acquiring the target language. Current finding is consistent with findings of other studies (Hakan et al., 2015; Nisbet et al., 2005).

In order to identify which language learning strategies differed significantly, a subsequence statistical test namely Tukey's HSD post hoc multiple comparisons was used. Findings of Tukey's HSD test (Appendix P) indicated the mean score of metacognitive strategies differed significantly with all other language learning strategies

($p < .05$). In addition, result also revealed respondents most employed metacognitive strategies significantly compared to other language learning strategies.

Tukey's HSD test also showed that mean score of social strategies was significantly different and higher compared to other strategies, but lower for metacognitive ($p < .05$) Despite the average use of social and cognitive strategies in learning English, statistical test revealed no significant difference found between these two strategies respectively. Result showed that respondents significantly had greater use of social strategies in learning English compared to compensation, memory and affective strategies but less compared to metacognitive strategies in learning English.

The use of cognitive strategies showed statistical difference with compensation, memory, metacognitive and affective strategies ($p < .05$). This indicated these respondents had greater use of cognitive strategies in comparison to compensation, memory and affective strategies in learning English. Nevertheless, finding revealed that cognitive strategies were less employed than metacognitive strategies in learning English.

Tukey's HSD test also showed compensation strategies had statistical significant differences with all other language learning strategies ($p < .05$). In addition, the use of compensation strategies among the learners were higher compared to memory and affective strategies. Tukey's HSD test also indicated that the use of memory strategies by the respondents was significantly higher than affective strategies. Hence, the statistical findings of Tukey's HSD test on language learning strategies employed by these respondents could be summarised as illustrated in Figure 4.3.


Note: "→" means "mean score is higher than"

**Figure 4.3: Significant order of language learning strategies**

In short, metacognitive strategies were frequently employed by these undergraduates compared to all other language learning strategies (Figure 4.3). It was followed by social/cognitive, cognitive/compensation, and lastly memory/affective strategies. The mean scores of social and cognitive strategies or cognitive and compensation strategies indicated no statistical differences. Similarly, memory and affective strategies also did not show any significant difference.

Certain findings from this study on the frequent and least used strategies produced mixed results. For example, results on the frequent use of metacognitive strategies among the first year undergraduates and least use of affective strategies are consistent with some studies (Abbasian et al., 2012; Kavasoglu, 2009; Mohammadi et al., 2013; Pawlak, 2013). On the contrary, other researchers (Aliakbari & Hayatzadeh, 2008; Al-Shaboul et al., 2010; Feleciya & Meenakshi, 2016; Goh & Kwah, 1997; Tan & Kaur, 2015) reported the learners mostly utilised metacognitive strategies but least use of other strategies besides affective strategies.

The quantitative findings on the specific types of metacognitive strategies of the current study were possibly explained through the responses from the interviewees. The excerpts below indicated the views of two interviewees [$R_{12,13}$] who highly employed metacognitive strategies.

$R_{12}$: So that I can know my timetable, any my timeline. I really use Gantt chart. I have this, this and this … I go like … Today, I'm going to focus on work-life balance … Tonight, I have to move to other things. If I cannot finish it, I have to move (even for language learning).

.. have very fancy words on the article and magazine. Sometimes we don't understand, so I just Google, try to search for it.

$R_{13}$: … official exams … it doesn't actually show you how skilful you are. For me, one thing is about the knowledge. That's why I would rather learn myself, I evaluate myself. I know my own style, I go ahead without going through what classroom wanted me to do my stuff.

These excerpts indicated knowing their learning styles besides having the strong desire to achieve personal targets or goal had prompted the learners to employ metacognitive strategies. Interviewee $R_{13}$ agreed he was able to achieve his goals through self-evaluation of his own learning progress. In addition, an interviewee, [$R_{12}$] also emphasized the importance of proper planning and monitoring of one's activities in the learning process such as the use of timetable timeline or Gantt chart. She also mentioned that having the initiative in doing things was crucial. Whenever she encountered difficult words, she would search for it. This included the strong determination for self-improvement as stated by interviewees $R_{17}$ and $R_{10}$ who also displayed high use of metacognitive strategies as shown in the following excerpt.

$R_{17}$: *Coz bila kita tidak buat benda, macam,* let say *kita tidak* push ourselves to do that, *kita akan ketinggalan la.* I push myself to do better for me.

(Because when we didn't do anything, let's say we didn't push ourselves to do that, we will be left out la.)

$R_{10}$: We must have to force ourselves to communicate … practise, speak in English

$R_2$: Sometimes in class, I don't understand … I will revise myself at home, make my own notes, and then try to investigage which part I don't understand.

The highest mean score in employing metacognitive strategies ($M$ = 3.45) implied these respondents were able to plan, monitor and evaluate their own language learning. Undergraduates were capable to be self-directed in thinking about what they had learned.

Learners could also try to investigate or reflect their learning as indicated by an interviewee $R_2$. They might be able to rectify any possible weaknesses or to increase their understanding of a particular language learning area. A strong determination to success through planning to attain desired goals and a great self-confidence may be some factors that encouraged these learners to employ frequently metacognitive strategies. Furthermore, Magogwe and Oliver (2007) also indicated that since these tertiary learners were more independent in the learning process, the use of metacognitive strategies would best match how these learners learn.

Consistent findings from past research on the highest use of metacognitive strategies among the language learners further confirmed the importance and relevance of metacognitive strategies in language learning. For example, a study by Young and Fry (2008) found that academic achievement correlated positiviely with metacognitive awareness. Livingston (2003) also agreed that cognitive activities could be regulated appropriately through practicing metacognitive strategies. It also resulted in greater success in language learning (Livingston, 2003). In addition, Stewart, Seifert, and Rolheiser's (2015) study showed that undergraduates with high self-efficacy but low level of anxiety might employed more metacognitive strategies in writing and was able to improve their writing skills.

Despite the importance of metacognitive strategies in language learning, these strategies might not be the most employed strategies across studies in this area. For example, Wharton's (2000) study among 678 undergraduates at a university in Singapore revealed these learners frequently employed social strategies. Another study by Afshar et al. (2015) on 355 ESP learners from three universities in Iran showed the highest tendency to employ compensation strategies in learning English language. Such differences in the use of compensation strategies could be due to learners' different characteristics or the

extent of their exposure to these strategies. Another study by Young and Fry (2008) indicated that the knowledge of learners on metacognitive strategies affected their strategies use in language learning. In addition, this study showed that graduates who with greater metacognitive awareness would employ more metacognitive strategies compared to undergraduates. Higher mean scores by graduates on the regulation of cognition factor using Metacognitive Awareness Inventory could further explain such result.

In the current study, social strategies, which were ranked the second based on the mean score ($M$ = 3.27) was further explained by data from interviews. For example, a respondent, $R_{16}$ indicated that he would ask questions sometimes and would cooperate with others in learning English language. Similarly, respondent $R_3$ would ask questions if she required further clarification. Respondent $R_7$ also indicated that she would cooperate with others in language learning. Asking questions and cooperating with others, the strategies classified under social strategies would enhance their understanding as shown in the excerpts below.

> $R_{16}$: *Kalau macam berkumpulan, kita boleh bertanya dengan orang lain. Bertanya apa kesalahan dalam bahasa itu. Kalau dengan kawan, kita boleh belajar macam ... cakap biasa biasa pun cakap cakap Inggeris pun ok, ah, macam tu la. Ada juga practise sikit sikit. (I.: Ohh, kawan pun terlibat kan?) Ah, ada. Ada terlibat sama.*
>
> (If in group, we can ask others. Ask about the mistake in the language. If meeting with friends, we can learn like … normal can also be in English, like that la. Practise a bit. (I.: Ohh, your friend also involved together?) Ah, yes. Involved together.)
>
> $R_3$: If I need any explanation or any info, just ask from lecturers, friends.
>
> $R_7$: Sometimes if I'm not sure with, no sure of something, then I always refer to other people … really don't understand through individual learning

Effective use of social strategies could facilitate the acquisition of target language (Park, 1997a) and the less proficient learners would commonly use social strategies (Patil & Karekatti, 2012). When learners share the common interest in the target language, support and empathize with one another, they will contribute valuable information or

share their experiences may resulted in learning the language successfully. Such positive effects from social interaction may encourage these respondents to continue employing social strategies.

Besides, respondents also employed cognitive strategies averagely ($M$ = 3.23). Interviews further revealed most of these respondents employed the specific cognitive strategies, namely memorising unfamiliar English terms and to assimilate the new knowledge mentally as indicated in the excerpts below.

> $R_{15}$: *Terdapat banyak theory, term term yang memang sebelum ini tak pernah dengar. Kena menghafal la. Terutama menjawab soalan ... ujian ... ada esei juga ... ada isi tempat kosong. Jadi secara tidak langsung dalam bahasa Inggeris, term term tu kita kena hafal jugalah.*
> (A lot of theories, terms that never heard before. Have to memorise la. Especially in answering question … test … essay also … fill in the blank. So indirectly in English language, we need to memorise those terms also.)
>
> $R_2$: Sometimes in class, I don't understand what the lecture taught, sometimes, I will revise myself at home, make my own notes, and then try to investigate which part I don't understand.
>
> $R_{19}$: *Memang perlu hafal dalam bahasa Inggeris. Perlu faham sendiri then make notes, then baru boleh hafal.*
> (Really need to memorize in English language. Need to understand myself then make notes, only then can memorize.)

Oxford (1990a) indicated that by applying cognitive strategies, learners would receive and process information deeply within their schemata and produce message in the target language. Physical materials such as note-taking were important for learners to understand and remember better as indicated by interviewees, $R_2$ and $R_{19}$. In addition, cognitive approach helped learners to comprehend and retain the language skills and concepts of content area (Chamot & O'Malley, 1987).

In addition, quantitative finding of this study also revealed respondents utilised compensation strategies averagely ($M$ = 3.16). Compensation strategies involve the guessing of meanings for unfamiliar words and using of gestures or synonyms to convey messages (Oxford, 1990a). Less proficient learners might face difficulties in various language skills. Hence, compensation strategies may be a better strategy for these learners

in order to overcome their linguistic limitations (Stickler & Lewis, 2008). Such limitations may include limited knowledge of grammar or vocabularies (Tan & Kaur, 2015). Such scenario could be shown by the excerpt below:

> $R_{25}$: When I watch the series or dramas … there are subtitles which the words appeared and I don't understand, I kind of predict the meaning of the words based on the sentence.
>
> When I want to say something, I don't know the word, I explain it to my friends using gesture and then they can come out the word. So, then I learn a new word. Like that.

Besides, this study also revealed memory strategies ($M$ = 3.03) did not differ significantly with affective strategies ($M$ = 2.97). These two strategies were least used by respondents in learning English. For example, respondent $R_{16}$ indicated lowest use of memory strategies. Similar empirical findings on the least used of memory strategies among the university students from various countries were reported by some researchers (Aliakbari & Hayatzadeh, 2008; Al-Shaboul et al., 2010; Goh & Kwah, 1997; Tan & Kaur, 2015). On the other hand, other studies conducted by Wharton (2000) and Afshar et al., (2015) showed that their subjects least preferred affective strategies.

> $R_{16}$: I am low in memory. *Kadang-kadang ingat, kadang-kadang benda yang sekejap pun saya boleh lupa. Ah,* memory *memang kurang. Sebab itu saya tidak suka ingat benda. Macam* some words *kan, kadang-kadang esok saya sudah lupa.*
> (I am low in memory. Sometimes remember, sometimes I can't remember things that just happened. Ah, memory is really low. That's why I don't like to remember things. Like some words, sometimes I forget it the next day.)

From the excerpt above, respondent who least employed memory strategies might be due to his unawareness of the various types of language learning strategies classified by Oxford (1990a). In fact, multiple memory-related strategies such as acronyms, sounds, images, body movement or even location were listed under memory strategies and could be used in language learning (Oxford, 1990a). Magogwe and Oliver (2007) indicated that being unaware of the potential strategies could result in less employment of diverse language learning strategies in language acquisition. Hence, it was necessary for learners

to be exposed to various choices of language learning strategies for active and meaningful language learning process.

In short, from the quantitative analysis of language learning strategies, it could be noted that metacognitive strategies were mostly used by the respondents and followed by social or cognitive, compensation, memory and affective strategies in learning English. . Results also showed that dealing with the emotional aspects under affective strategies was not the concern of these learners as it was the least employed strategy. Interview data further showed that respondents had stronger determination in achieving personal targets through self-evaluation of their own language learning process using metacognitive strategies.

## 4.4 Correlation between Perceptual Learning Style Preferences and Language Learning Strategies (RQ3)

The third research question is "What is the correlation between perceptual learning style preferences and language learning strategies?" It aims to determine the relationship between perceptual learning style preferences and language learning strategies among first year undergraduates. It further explores the learners' perceptual learning style preferences as illustrated in Research Question 1 (RQ1) and their language learning strategies as indicated in RQ2.

Both perceptual learning style preferences and language learning strategies were quantitative dependent variables, which comprised six categories respectively. Perceptual learning style preferences were measured through the total score from PLSPQ (Reid, 1987). In addition, all the categories for language learning strategies were measured through the mean scores of interval scale based on SILL (Oxford, 1990a). Hence, bivariate Pearson's product-moment correlation in SPSS was employed to measure the

linear correlation between these two variables, namely perceptual learning style preferences and language learning strategies. The value of Pearson's correlation coefficients, *r,* which showed direction and strength of the linear relationships are as shown in Table 4.5.

**Table 4.5: Correlation between perceptual learning style preferences and language learning strategies**

| Learning styles | Language learning strategies | | | | | |
|---|---|---|---|---|---|---|
| | **Memory** | **Cognitive** | **Compensation** | **Metacognitive** | **Affective** | **Social** |
| Visual | -.165** | -.212** | -.080** | -.206** | -.090** | -.160** |
| Tactile | -.256** | -.291** | -.149** | -.252** | -.129** | -.245** |
| Auditory | -.207** | -.271** | -.127** | -.208** | -.094** | -.229** |
| Group | -.095** | -.071** | -.022 | -.102** | -.130** | -.146** |
| Kinesthetic | -.255** | -.314** | -.170** | -.293** | -.118** | -.291** |
| Individual | -.105** | -.180** | -.082** | -.121** | -.010 | -.083** |

Note: * $p < .05$, ** $p < .01$. SPSS automatically generates *p*-value of .05 and .01 if respective significant correlation exists. *p*-value of .01 indicates a higher confidence level than .05. *p*-value of .01 was used to display a more accurate statistical significance if applicable

Positive value of correlation coefficient, *r* indicates positive association between the variables while negative value of *r* indicates negative association (Moore, 2004). In this study, significant Pearson's correlation coefficients between perceptual learning style preferences and language learning strategies ranged from -.314 to -.071 (Table 4.5). It reported that most perceptual learning style preferences had negative significant correlation with language learning strategies. However, there was no significant relationship between group learning style and compensation strategies besides between individual learning style and affective strategies.

Individual and visual learning styles, which were ranked the highest and second preferred learning styles (Table 4.1), demonstrated significant negative correlation with other language learning strategies, except the relationship between individual learning style and affective strategies ($p < .01$). Both individual and visual learning styles were found to show highest negative correlation with cognitive strategies ($r$ = -.180 and -212 respectively). This implied that individual learners who preferred to study alone significantly used less cognitive strategies. For example, individual learners would avoid reasoning and practicing strategies under cognitive strategies in learning English based on the current finding. Similarly, learners who are inclined toward visual style might not be in favour to use repetition strategies under cognitive strategies in learning English.

Besides, auditory learning style had negative significant correlation with all the others language learning strategies (Table 4.5). Highest negative correlation coefficients was found between auditory learning style and cognitive strategies ($r$ = -.271) compared to other strategies. An interviewee, $R_9$ who was very keen in using auditory learning style was found to practice the words that she learnt from watching television programme, like cartoons as shown in the excerpt below. Since practising was classified under cognitive strategies, her responses indirectly showed auditory learning styles were somehow related to cognitive strategies.

> $R_9$: Actually television. It's a … (I.: most frequent way?) Yes. It's surprising that some words I really learned from cartoon. For example Spongebob like that. Sometimes they have words ... I watched cartoon and then some new words that I know about. And then I know how to arrange … it should be the way to speak in English, I picked from television. Very influence.
>
> … (Cognitive style) Mostly on books. For example, some words I don't understand, I would write it and look for it in the dictionary. I would try to make it into a daily conversation ... (practise it). Because it's just like music. The more you sing their lyric, the more you will remember. So the more I say the words … (I.: fix your command of language?) Yes.

Results also indicated negative significant correlation between group learning style and social strategies ($r$ = -.146). Hence, this study showed that cooperative learning emphasized in social strategies might not be employed much by the respondents who were in greater preferences for group learning styles. Unprepared and ignorant peers in cooperative learning might resulted in negative group learning experiences by some group members (Herrmann, 2013). In addition, learners would also learn less in groups if their peers were not prepared for learning in groups (Bentley & Warwick, 2013). Lacking of cooperative mind-set to work with others also implied that some members had an increased workload. Utilising social strategies in group learning could be due to the predominance by some group members, who created less opportunity for others to ask or do the assignment cooperatively.

Hence some respondents might not employ much of memory ($r$ = -.095) and cognitive ($r$ = -.071) strategies while they were in group because they could depend on someone when there were problems. Less participation in planning or monitoring the group work together could be shown by negative association between group learning style and metacognitive strategy ($r$ = -.102). Low preference for group learning style might also be due to the failure of some group members in controlling their emotion and attitude towards learning of English language. This could be indicated from negative association between group learning style and affective strategies ($r$ = -.130). Without positive attitude of undergraduates towards group learning, group work would not be successful (Hillyard, Gillespie, & Littig, 2010).

On the other hand, kinesthetic learning style also showed significant negative correlation with all other language learning strategies. Slightly stronger negative associations were found between kinesthetic learning style and cognitive ($r$ = -.314), metacognitive ($r$ = -.293), social ($r$ = -.291) and memory ($r$ = -.255) strategies. This

indicated respondents with kinesthetic learning style preferred less cognitive, metacognitive, social and memory strategies in learning English.

Respondents with both tactile and kinesthetic learning styles might not learn their vocabularies well compared to other perceptual learning styles. This can be seen by slightly higher negative correlation coefficients in the use of memory strategies, $r$ = -.256 and -.255 respectively among these respondents. These coefficients indicated they might encounter difficulties in storing new vocabularies or retrieving vocabularies. Their correlation coefficients with cognitive strategies also showed similar slightly higher negative value, $r$ = -.291 and -.314 respectively. The input of target language was not manipulated and transformed in order to achieve desired outcome or to create meaning out of it.

Based on the discussion above, this study revealed that there were some linear weak relationships between perceptual learning style preferences and language learning strategies despite those relationships were negatively correlated. Such linear relationships were considered as "very weak" (Chua, 2006). From the highest negative significant correlation coefficient ($r$ = -.314) indicated from the correlation between kinesthetic learning style and cognitive strategies, the value was used to calculate its coefficient of determination, $r^2$. Its value of $r^2$ = .0986 indicated that the percentage of variation of the relationship between kinesthetic learning style and cognitive strategies that could be explained was merely 9.86%.

Hence, despite the statistical significances shown in this study, the relationships were not strong enough to be used substantially in determining the correlation between perceptual learning style preferences and language learning strategies practically. Nevertheless, the results still indicated learning styles could be possibly influencing the use of language learning strategies through its negative correlation value. This finding

somehow contradicts the findings of prior researchers, who indicates a positive correlation between perceptual learning style preferences and language learning strategies (Alireza & Abdullah, 2010; Baghban & Zohoorian, 2012; Chen, 2009; Jie & Xiaoqing, 2006; Oxford, 1996a; Oxford, Ehrman, & Lavine, 1991; Rivera-Mills & Plonsky, 2007; Uhrig, 2015). Hence, the results suggested that this study might be replicated in order to futher confirm the possibility of relationship between styles and strategies.

## 4.5 Factors Influence Perceptual Learning Style Preferences (RQ4)

Based on the coding of qualitative data texts assisted by a software, NVivo on interview transcripts, factors that affected the learners' perceptual learning style preferences, namely language proficiency, past learning experiences and personality traits were described (Figure 4.4).

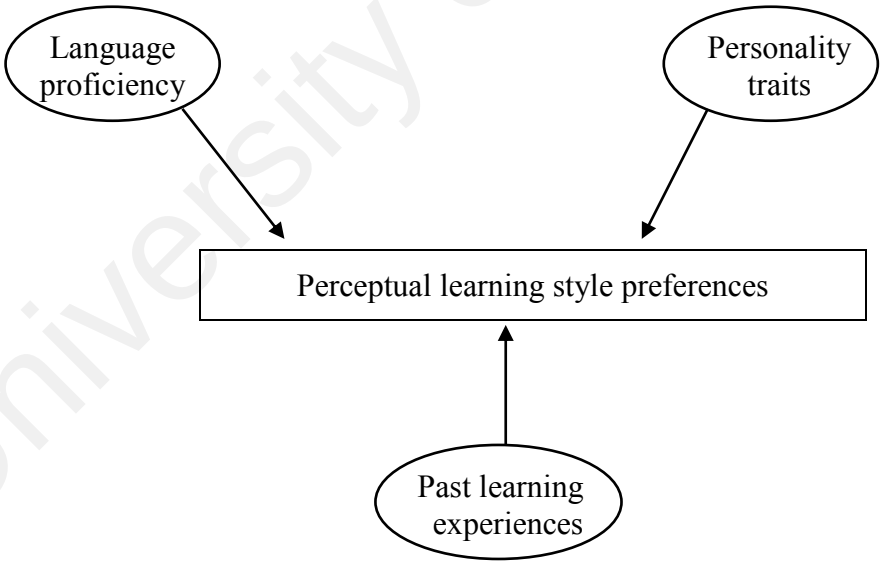



**Figure 4.4: Factors that influence perceptual learning style preferences**

Out of the 27 sets of interview transcripts, related data texts from 11 transcripts coded as 'language proficiency' factor were used to describe perceptual learning style preferences of learners (Figure 4.4). This involved 40.74% of the interviewees. Besides, 18.52% of interviewees or 5 transcripts were related to personality traits factors whereas 48.15% of interviewees with data texts from 13 transcripts explained the past learning experiences factor that influence the perceptual learning style preferences of learners.

### 4.5.1 Language Proficiency

Past studies showed language proficiency was one prominent factor that could influence the perceptual learning style preferences of English learners (Kunasaraphan, 2015; Platsidou & Sipitanou, 2015; Savas & Erol, 2015). In this study, high proficient learners had higher preferences for individual learning style quantitatively. Data from interviews revealed that only two interviewees were categorised as high proficient learners. Both of them were confident in their command of English and were able to speak in English fluently. One revealed she would prefer to learn by herself because she could learn things that are more relevant when she was alone. She could also evaluate her own language learning performance. She also mentioned that there was less distraction while learning individually compared to learning in groups as indicated below:

> $R_7$: I prefer individual learning. Because like that I can learn more. Because if I learn in group, I tend to speak with my friends. If there is no need to practise (role-play), like essay writing and grammar, are own learning. Because if I learn individual, then I can assess my own performance. Some of my coursemates, they always take things lightly, so I don't like.

Due to their good command of English language, language learning may be easy for them. They believed they were able to do well in language learning because they could plan and complete the tasks alone. On the other hand, average proficient interviewees were found in favour of group learning style. They revealed group learning was more

beneficial for them compared to learning individually. Vocabularies learning became more effective because they could remember most of the words used in their conversations with others besides being exposed to learn more new words. Learning in groups was regarded as a fun way of learning English language besides to improve their communicative skills through practicing with others. For example, some respondents provided the comments of learning in groups as follows:

> $R_9$: For group learning, because you get to communicate with other people, you get to know, you get to remember most of the words. Some sort of, it's a much more fun way of learning English. For example if you say some words, and you pronounce it wrongly, sometimes your friend is much better English than you, then might correct it. I find that is more interesting. Might be exposed to new words from friends.
>
> $R_{11}$: In group, I can learn more things from my friends which maybe their language level in English … higher than me.

Average proficient interviewees were more inclined towards group learning or engaging in discussions to complete the tasks given compared to learning individually. With the knowledge limitation in the language, joining group learning could be helpful in preparing them for various academic assessments like examinations, oral tests or role-plays besides to increase their levels of confidence in interviewee, $R_{15}$'s excerpt.

> $R_{15}$: With my English level of Band 3, I will be more prepared …eh, prefer group study. If I learn myself, maybe I could not cope with it. Before this, I felt very difficult in English language, I am not confident to involve more in activities such as role-play.

The presence of their friends in the group could also act as their immediate references and might be beneficial when they encountered problems in learning English language. Hence, they seemed to agree that joining activities by others could ease their learning processes. Each group member might show his or her strengths in a particular language area, which enable him or her to complement one's weaknesses or knowledge gap. Mutual sharing of information with one another enhanced the learning process in the group as indicated by the following responses:

$R_{16}$: In English class, we involve together in drama activities, production of dialogue … talk during dialogue, communicate with other group members. These (activities) make the learning becomes easier.

$R_{24}$: There's something that he doesn't know, there's also something he knows. So, when we all come for group learning, we can fill in the gaps.

$R_5$: If in group, we correct each other. We discuss to accomplish the task.

Average proficient learners ($n$ = 942) were found to highly preferred group learning style compared to other styles through quantitative findings (Appendix Q). A study conducted by Maesin, Mansor, Shafie, and Nayan (2009) also showed that 92.6% of their tertiary respondents highly preferred collaborative learning activities. These learners felt at ease when learning in a small group discussion and could practise English in a comfortable atmosphere.

Apart from this, not all interviewees, who were averagely proficient in English language were able to speak English language fluently. They revealed that sometimes they still encountered difficulties in conveying complete message in public or in group. Their ideas or thoughts could not be expressed effectively in sentences and understood easily by others. The fear of being making fun or being laughed by others while revealing their language errors, or frequent incorporation of verbal pause such as "er, em" and shy personality were among the reasons that these respondents resorted to learn individually as indicated in the excerpt below.

$R_{17}$: Sometimes when we practise with people … when we make mistakes, sometimes people laugh at you ... and then, that make me feel down, and then, that's why (I) prefer individual.

This response would somehow lead to low self-esteem and language anxiety within an individual when he or she conversed with others. Low self-esteem can be viewed as a negative psychological response based on feelings and could decrease one's self-confidence (Mruk, 2006). On the other hand, language anxiety is the fear encountered by learners when they are expected to perform in the target language. Low self-confidence

and language anxiety adversely affect an individual's language learning (Gardner & Maclntyre, 1993) and perceptual learning style preferences regardless of formal or informal learning settings (Oxford, 1999). Perhaps, this could also revealed the reason for low proficient learners ($n$ = 668) to highly preferred individual learning style compared to other styles based on quantitative finding (Appendix Q). An interviewee from this category mentioned:

> $R_6$: My English command is quite poor. I feel quite humble during group discussion. Band 2 in English really affected me in group discussion. I feel like … depend on myself. I never use English at home. When I spoke in English, I felt uneasy to express my ideas ... it is difficult. When I gave my opinion, (I scared that) my opinion would be rejected or not being listened (by others in the group).

This response implied a person who lack self-confidence while in group due to limited knowledge in vocabularies and to practice the target language might cause them to resort to individual learning style. Besides encountering difficulties in raising their opinions in English language, they were also worried whether their ideas could be accepted or rejected by others. Indirectly, this led the learners to portray low self-esteem during group discussion. Westberg and Jason (1996) added that even this group of learners was eagerly to speak, they would remain silent in group learning. They stated that through individual learning, their weaknesses in English language would not be visible to their surrounding friends. As a result, they will cultivate the habit to practice their conversation skills individually or silently.

In order to understand English better, some interviewees preferred to employ both visual and auditory learning styles. Limited vocabularies and low usage of English language in daily conversation caused them to face difficulties in processing the language, being attentive and understand the messages fully. Connections of facts, picking up and retaining the main points merely through listening posed great challenges for them to understand quickly as shown in the following excerpts.

$R_{24}$: I seldom use English ... I need to see … something to understand it faster. I need to have both listening and looking at the things at the same time. In the learning process, most of the time I depends on the memory of those images. When reading English documents, I will use pencil to highlight the words.

$R_{10}$: I am quite slow in learning. I need to have a clear picture so that I know what the person is talking about. So that I can catch what is the message the person is trying to tell me. It will be better for me to study as well. It will be more interesting if there is a picture.

$R_3$: Picture can tell a lot of things. From those things that I see, it's more comfortable than we just listen to others. Sometimes cannot pass the info.

In other words, learners with linguistic limitation would not be comfortable to employ auditory learning style when they were alone in learning English. The English language learning process would become faster and with complete information if visual materials were provided while listening to lectures simultaneously. For example, Andrew (2009) suggested visual inputs are able to amplify related effect of auditory signal. Besides enhancing listening comprehension effectively, Woottipong (2014) also stated that visual inputs are able to assist the learners in remembering and understanding the words used; hence motivate them to learn English. It was also agreed by Wolfe (2010) that the combination of visual and auditory senses enabled the learners to understand better and retain the information. Hence, one important implication from this study is the use of visual learning aids such as descriptive printed materials, books or PowerPoint slideshows, which have multimedia components that could provide better visual clues in order for learners to focus and understand while listening to lectures concurrently.

### 4.5.2 Past Learning Experiences

Past learning experiences could also be one factor that may affect 44.44% of interviewees' learning styles. Findings from twelve interviews indicated past learning experiences especially when they were in groups either positively or negatively influenced their perceptual learning style preferences, with one interviewee, $R_{11}$ who described his positive and negative past learning experiences. There were six interviewees

(22.22%) [$R_{7,11,18,19,20,25}$] who encountered negative experience while learning in group. Out of these six interviewees, there were three males and females respectively. These learners were from four different faculties, with the proficiency ranging from low (one interviewee), moderate (four interviewees) and high (one interviewee) categories. Besides, seven interviewees (25.93%) [$R_{3,4,5,11,15,16,22}$] shared their positive learning experiences in group learning. Among these learners were four male and three female interviewees. Two of them showed low language proficiency and the remaining five possessed moderate command of language and were from six different faculties.

Some interviewees commented their prior negative experience of group learning affected their perceptual learning style preferences. Talkative atmosphere among members in group learning might create a feeling of disappointment in some learners as the concern for topic discussed was strayed away and resulted in longer time to complete that particular task as shown below.

$R_{11}$: It is hard for us to really sit down in a group … still talking other elective subjects.

$R_{7,18}$: If I am studying in group, I tend to talk more with my friends. More like a kind of distraction to me.

For example, some members who loved to talk outside the topic supposed to be discussed when they were in a group, especially for those who were originally their friends and had common topics to talk idly [$R_{19}$]. This distraction not only caused the other members to be unable to pay attention during discussion but also prompted some members to talk even more while in group. Such action caused them to be deviated from the initial purpose of group learning as shown in the responses below.

$R_{25}$: I'm the type of person who talks a lot. So whenever there are people who I can talk to. I tend not to learn. I tend to talk about other things.

$R_{20}$: (don't really like to study in a group). Because if I study in a group, I tend to like more talking … kind of distraction for me.

One respondent even said "going for group discussion was not his focus to study, just for enjoy … to play around". This resulted in a waste of time, especially to those group members, whose purpose was to complete the tasks given when they came for group discussions. Although they were reminders from some members regarding their initial purpose of coming for group discussion, sometimes members of the group just ignored due to insensitivity of discussing appropriate matters as planned originally. As such, not all group members were proactively contributing their ideas during the group discussions. Some members just simpy complete the tasks assigned to them [$R_7$]. Less cooperation and serious attitude among some members had also resulted in a slower progress for the completion of tasks. This caused certain group members to complete the tasks assigned to them last minute before submitting the group assignment as shown in the excerpts below:

> $R_7$: They are not serious. In the end, you need to do their parts because they don't know what thing is going on actually. They only seem like want to throw their work to you to be done on their behalf.
>
> $R_{19}$: Last last, tomorrow is the due date, sometimes need to do their parts. Just type, type, compile or edit. They didn't do (their work) … always.

As such, there were also interviewees who emphasized that all group members must cooperate and contribute during the group discussion. The task should be completed first before talking about other topics. Uncontrolled talkative atmosphere that caused unproductivity of group learning and unfair contribution of efforts among group members caused some learners to avoid group learning. A study by Magni, Paolino, Cappetta, and Proserpio (2013) indicated negative group learning behavior mitigated individual learning with decreased cognitive absorption. An interviewee $R_{20}$ even expressed that it was better for her to learn alone because it was easier and faster. This reason could be one possible reason to explain the quantitative finding on which group learning style was ranked the fourth preferred styles by respondents (Table 4.1).

Although there could be some negative impacts from group discussion, the importance of learning in group cannot be denied. Past studies (Freeman et al., 2014; Prince, 2004) showed learning gain could be enhanced through active engagement of learners. Positive group learning experiences would contribute to learners' learning. In this study, some interviewees also agreed that group learning was constructive in learning English as shown by the excerpts below. Two respondents, $R_{11,16}$ indicated their communication and speaking skills improved through cooperative learning with other group members.

> $R_{11}$: If the task is given in group, it is important for us to cooperate with other group members.
>
> $R_{16}$: We can learn in this way, ordinary conversation was also done in English … always practice bit by bit (to converse in English) … friends also involved together.

Learners became more active and at ease in learning when they had members who were their friends instead of being a passive member. Holliday and Said (2008) also agreed that by creating more comfort while learning in group was associated with better academic performance and retention. In view of this, fair task allocation among group members [$R_{11,\ 15}$] and clear goals setting [$R_{15}$] for each session of group discussion that were associated with effective time management also encouraged learners to prefer group learning style continuously as shown by excerpt below.

> $R_{15}$: We discussed together to settle the assignment. Not merely to do discussion, we also planned and set our goal. For the presentation later, we can divide (the task) and present the result in English language.

In fact, appropriate behaviour among group members resulted from shared common goals and values could increase the quality of work (Johnson, Johnson, & Smith, 2014). This behavior included positive interdependence among all group members where each member shared and was accountable for the assigned group task. Hence, there was an equal importance of "I", "we" and "it" which formed three constituent elements of theme-centred interaction (Jaques, 2000, p. 12) as shown in Figure 4.5. The "it" which was the

theme or topic shall be the common ground to adhere "I" and "we" as a whole. The interaction aimed for active participation among all members within a "globe" that comprised positive physical and social environments although it was temporary.

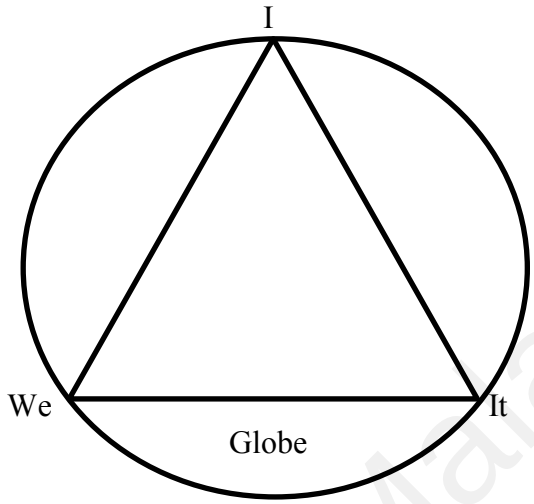



**Figure 4.5: The theme-centred interaction triangle and globe**

Effectiveness of group learning in improving learning process cannot be denied (Burdett, 2003). Positive group learning experiences might occur when all group members were collaboratively involved in contributing their ideas, sharing their learning experiences and putting in their effort in a more meaningful and effective way for language learning. As such, learners would learn more from each other through their active engagement in group. The task not only could be completed faster in an organized mean, but positive experiences in group learning also encouraged the respondents to continuously employ group learning style in future language learning. This could be indicated through the following statements.

> $R_{15}$: Learning in group … easier for me to gain knowledge from my friends. If I study alone, I won't study until that deep. Maybe my friends have more knowledge than me. I like to involve together and we share our information. Our understanding process becomes faster. Learning in group helped my communication in English (as) I can communicate with my friends. It will be difficult for me to learn alone. In group, my friends can improve my English … more in speaking.

$R_3$: For those who really cooperative, I like it because if we talk for two hours, all things can be settled within two hours. So, the next day we don't have to think about it anymore.

For continual active engagement of respondents in group learning, a conducive group learning environment was relatively important. In fact, supportive learning environment was positively linked to creative development of skills (National Survey of Student Engagement, 2015). By forming own learning or discussion group, higher work productivity can be achieved. This could be done through the selection of members or friends, who had closer relationship with them for group learning. Since the group members knew one another, they would feel more comfortable and promote the use of English during group discussion [$R_{11}$]. This included their willingness in sharing information and working together [$R_3$]. The preference of interviewees in choosing their friends as group members could be shown as follows:

$R_3$: But again for group discussion, I have to select a few members myself ... for a better learning group environment.

$R_{11}$: If the task is given for group discussion, (I preferred) the group members are of my choice. … I prefer to select members myself for group discussion. That learning environment will be slightly OK … for group learning.

$R_4$: I like to study in group … normally, friends that are chosen by me. If we have friends, we can ask and directly understand. From group, we learn together. Information was shared together.

It was reported by Freeman et al. (2014) that small number of learners ensured active learning. Free-riding phenomenon in group learning could also be avoided (Börjesson et al., 2006). In this study, there were interviewees [$R_{4, 5}$], who agreed the size of the group for group discussion should not be too big to ensure active participation among group members. Smaller task group ensured each member to play an active role in any group projects besides to improve his or her communication and literacy skills in English language. The impact of small group size on language learning could be shown in the following excerpts.

$R_{4,5}$: The group size should not be too big, about two to three or four persons in a group.

$R_{22}$: If group, I prefer group of three. If more than that, of course … not really like. Because normally when there is more than three, always have free riders.

Börjesson et al. (2006) also agreed when the group size became larger, it was easy to have free-riding in group work because there was no positive leadership within the group. Increase in number of group members undoubtedly would change the group characteristics and decrease the contribution level from group members (Jaques, 2000). Hence, this implied that cooperative learning through active engagement and shared goal of each group member were important in group learning. Meaningful and enjoyable group learning experiences ensured continual employment of group learning style among English learners.

### 4.5.3 Personality Traits

Personality traits of learners is also one prominent factor that influence their choice of perceptual learning style preferences in learning English based on the interview findings. Two interviewees [$R_{18,20}$] mentioned those learners who were quite likely to be shy and quiet would prefer individual learning style. These personal traits caused the learners to feel uncomfortable while learning together with others. They would be more interested to work alone rather than asking people around as shown below.

$R_{18}$: Some girls are shy maybe … rather than asking people. Shy and quiet type. Don't like to ask.

Ahmetoglu and Chamorro-Premuzic (2013) described personality traits involved self-concept linkages in memory in which a particular concept such as "shy" could closely link to another concept in memory that could influence one's behaviour or action. "Shyness" which was referred as social anxiety often resulted in negative individual's expectancies of social interaction (Matthews, Deary, & Whiteman, 2009). Hence, it was

not surprising when learners with these personality traits highly preferred individual learning style. Past studies conducted by Erton (2010) and Nurul Amilin Razawi et al. (2011) showed learners' personality traits influenced their learning style preferences. Reid (1995) further added that introvert learners would feel at ease in employing individual learning style in learning English. This could be illustrated by the excerpts below.

> $R_{18}$: For individual, I will feel more comfortable. And then, I can focus more on language. If I do the study in group, I don't think I can …er … focus more. (For) individual study … memorize better and more understanding. I (also) prefer to watch movie, English movie also. I can hear it and I can also practise it at the same time. So, I prefer it alone.

Myers-Briggs indicated introvert learners liked to study alone. They loved to listen, observe, read and write besides thinking of information privately after listening to others talk (Pritchard, 2009, p. 46). This could be seen by the responses of an interviewee [$R_{18}$] who felt more comfortable when she was alone as she could be more focused when she learned the language alone. She felt distracted and overwhelmed when learning in group. Her preference to learn English individually based on interview data could be supported by quantitative result that indicated her highest preference for individual learning style in learning English language.

Another two interviewees [$R_{24,26}$] responded that their preferences for individual learning style sometimes could be due to an individual's characteristics of being more reserved or their unwillingness to share complete information with others. These characters could cause them to stray away from participating in group learning. A study conducted by Demirkasımoğlu (2016) among academicians indicated that knowledge-hiding behaviour, which was not fully a negative phenomenon was significantly correlated to one's personality traits.

Unwillingness in sharing knowledge could also be related to one's perception that knowledge was perceived as one's intangible asset and important capability for competition (Haldin-Herrgard, 2000) and also in guarding an individual interest (Korkki, 2014). Although knowledge-hiding was not necessarily with the intention to harm others, one might consider the hidden knowledge could prevent an expert in self-serving manipulation, as reported by Korkki through an interview. Hence, such personality trait could lead a learner to highly preferred individual learning style.

On the other hand, different personality traits might lead to different perceptual learning style preferences among English learners. Below shows a part of conversation between a female interviewee [$R_{27}$] and the researcher as interviewer [I.] in her preference for group learning.

$R_{27}$: Individual? No. You can survive in the world, not individually. Right now, there's a lot of things happened. There's a lot of competitive. You can't work by yourselves. There are certain things you can do individually but certain things you have to do in groups.
I.: … the language learning?
$R_{27}$: Yeah, groups

The interviewee [$R_{27}$] mentioned she could not learn the language or complete the task alone. Learning in group was crucial and timely for her to face the competitive and dynamic demands around her. This sense of competence was an example of conscientiousness domains of personality traits underlying the five-factor model of personality introduced by Costa and McCrae (Matthews et al., 2009).

Qualitative findings from interviews indicated that three main factors influence perceptual learning style preferences of first year undergraduates, namely the learners' past learning experiences, followed by their language proficiency and personality traits. Results showed that the learners' past learning experiences could positively and negatively influencing their choices of learning strategies. Besides, learners who feel shy

or in favour of quiet learning environment and reluctant in sharing information or knowledge were reasons revealed by interviewees, who preferred individual learning style, which was the most preferred perceptual learning style among first year undergraduates through quantitative findings.

## 4.6 Factors Influence Language Learning Strategies (RQ5)

Language proficiency, gender, language learning environment, socioeconomic status of parents and motivation were among the crucial factors that were perceived to influence the interviewees' language learning strategies (Figure 4.6).

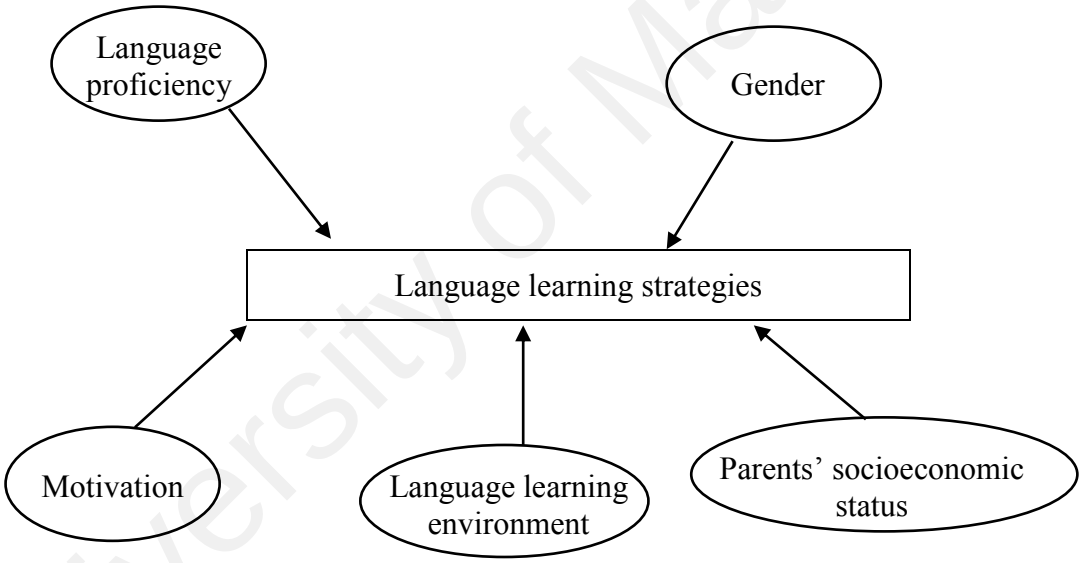



**Figure 4.6: Factors that influence language learning strategies**

Figure 4.6 indicates the number or percentage of interview transcripts that were used to describe the learners' language learning strategies qualitatively. For example, 16 out of 27 transcripts in total or 59.26% were categorised as language proficiency factor in affecting language learning strategies. Likewise, 6 (or 22.22%) transcripts showed related data texts to gender factor. Three other factors that were derived from interview

transcripts were motivation, language learning environment and parents' socioeconomic status which involved 18.52%, 51.85% and 44.44% of the transcripts each respectively.

### 4.6.1 Language Proficiency

Language proficiency was one prominent factor that influenced the interviewees' language learning strategies. Such finding was in accordance with a study by Rahimi et al. (2008) in which English language proficiency was the strongest factor affecting the learners' language learning strategies compared to their motivation and years of language study. In addition, some studies (Afshar et al., 2015; Kamalizad & Samuel, 2015; Khandari et al., 2015; Kunasaraphan, 2015) further reported that there were significant differences on the use of certain language learning strategies based on language proficiency. The findings from the interviews further supported that there were differences in choices of strategies based on their language proficiency.

Two of the interviewees were high proficiency learners, 19 of them were of average language proficiency and six of them were with low proficiency. Based on the interviews, interviewees with high language proficiency favoured metacognitive and social strategies. Such findings were similar to a study by Salahshour et al., (2013) which provided the same results. In addition, other studies (Chang & Liu, 2013; Magogwe & Oliver, 2007) also reported higher use of metacognitive strategies among the high proficient learners. However, these two empirical studies reported the use of metacognitive strategies generally but did not further elaborate on the specific strategies employed under this category.

However, this current study also employed qualitative method to investigate the specific metacognitive strategies utilised by the respondents rather than merely reported findings on the overall strategies employed quantitatively. Findings from interviews showed these respondents would either evaluate their own language learning processes or arrange and plan their own learning under the categories of metacognitive strategies. For example, a respondent [$R_{13}$] specifically mentioned the importance of learning English and he would evaluate his own language learning by identifying his strengths and weaknesses in order to speak and write the English well as indicated in the following excerpt:

> $R_{13}$: Sometimes when you have a (language) background on it already, you can actually evaluate yourself … Everyone should learn English. That's how the previous community enjoys … If you know nothing you know, you couldn't speak well, you couldn't write well.

The respondent, $R_{13}$ further explained "if you knew nothing about English language, then most of the times you would just follow what other people are doing." Having good command of English language enabled him to evaluate his own learning, a specific strategy under metacognitive strategies. High level of metacognitive awareness through thinking own language learning process could lead to improvement as the learners reflect and are conscious of positive factors and could anticipate obstacles that affect their language development (Goh, 1997). Hardan (2013) mentioned that learners could also coordinate their language learning process and change their plans if their plans were not suitable. Advanced decision on what going to be learnt could also be made as indicated by respondents, $R_7$.

Respondent, $R_7$ also revealed that she like to pay attention to what she had learnt and then linked this information with what she already knew as shown in the excerpt below. She also agreed she had being planning and arranging her own learning process even before she entered her programme of study. In addition, she was able to monitor her own

language performance due to her preferred individual learning style. Arranging and planning her learning strategies were part of the metacognitive strategies.

I.: And also other than social strategy you also have high usage of this metacognitive strategies, where you actually pay attention to your own learning and then you try to link it with something that is you already know and you also know how to arrange your learning, plan your learning and then you, like you say you can self-monitor right? Because you like to study individually you can self-monitor.

$R_7$: Ah.

The respondent, $R_7$ revealed that she would find it easy to communicate with others including her friends due to her good command of English language. In addition, respondent [$R_7$] also mentioned she would employ social strategies to learn English occasionally. However, most of the times, her friends would ask her questions and she would assist her friends in the communication process. At the same time, she would also ask questions for correction or clarification as shown below:

$R_7$: Sometime if I'm not sure with not sure of something, then I always refer to other people.

Asking questions was a strategy under social strategies and encouraged the group learning style. Good communication skills also facilitated $R_7$ in asking questions. When her friends approached her whenever they encountered language problem, she might improve her language skills indirectly. Despite her preference to learn individually most of the time, she sometimes had to learn through peers or in groups. Such method of learning that involves "cooperating with peers" is a form of social strategies (Oxford, 1990a). Therefore, this also explained why this respondent most preferred individual learning style and group learning style was ranked the second lowest quantitatively.

As for the interviewees with average language proficiency, they revealed that they faced problems to fully understand or comprehend written English messages and to convey messages fluently. Linguistic limitation especially the limited knowledge of vocabularies caused 68.42% ($n$ = 13) of this group of learners [$R_{11,12,14,22,23,24}$] to use compensation strategies frequently as shown in the next few excerpts.

$R_{15}$: During conversation, when I want to talk and couldn't find any suitable words, I mix with Malay language, my mother tongue.

$R_{23}$: When I can't think of any English words to be used, I use hand signal.

$R_{22}$: When I read English article, come across English words that I don't understand, I always try to roughly guess myself.

$R_{2}$: When I don't know the meaning of words, I think (of) something that I can compare to it. I mix with Malay. It is always for me that when I don't know how to overcome, then I will guess.

Findings from interviews also revealed "switching to mother tongue" and "guessing strategies" were two most common compensation strategies employed by the learners to compensate their limited vocabularies (Oxford, 1990a). Such finding was similar to the study by Ok (2003). Besides, gesture could also be used when learners were unable to recall the words immediately in conversation. Hence, compensation strategies were employed in two situations. Firstly, mixed languages or gestures were used to convey messages across in the midst of communication with others. Secondly, when the learners encountered unfamiliar words in reading materials, "guessing strategy" was employed.

Findings also illustrated some interviewees [$R_{9,16,21,22,4}$] preferred to use "guessing strategy" to learn English. Learning process became faster as it was unnecessary to search the meanings of all unknown words through dictionary by using "guessing strategy". Learners elaborated that they would understand what they read when they guessed the meaning of new words in reading contexts as follows:

$R_9$: Sometimes I do (use guessing strategy). Especially err ... you know the part in Reader's Digest? Sometimes they have these words… very difficult words. Sometime I just take the core words. I try to guess in the context what the text means.

$R_{16}$: I'm not really read every single word. For the one that I don't understand, I only go through roughly its meaning.

In addition, the fear of making mistakes while speaking in English would prompt these learners to use compensation strategy. Having low self-confidence might cause the learners to avoid using unfamiliar language in communication. They perceived they were not competent to ask questions due to their average levels of language proficiency as shown by excerpts below:

$R_2$: Sometimes if they talk in English to me, I reply in English. I rarely talk (in) English first.

$R_{21}$: I really don't like to ask. When I don't know (some words), I just guess. Because of moderate level (of English command), not confident.

By remaining silent, they would hide their weaknesses in their command of English. Such strategy to "avoid communication in target language either partially or totally" was under compensation strategy. This particular strategy could assist learners to overcome their limitations in English language.

In brief, language proficiency affects the use of language learning strategies among the average achievers. Lack of vocabularies in speaking and reading had prompted learners to employ compensation strategies to overcome their linguistic limitation. As a result, learners were able to convey intended messages successfully during communication, to comprehend better while reading or even to hide their incompetence in the target language. Result on average proficiency learners who highly employed compensation strategies was quite similar to studies by some researchers (Lai, 2009; Mochizuki, 1999; Wu, 2008) where learners highly utilised compensation strategies (as cited in Liu, 2015).

In this interview, respondents with low proficiency were found to employ a few language learning strategies, namely cognitive strategies, social strategies, metacognitive strategies and affective strategies. Despite the use of a various language learning strategies, social strategies were mostly employed. Such finding contradicted the results of past studies (Chang & Liu, 2013; Kunasaraphan, 2015). For example, Chang and Liu's study revealed social strategies were the least employed among the elementary level of learners whereas Kunasaraphan's study discovered undergraduates with low language proficiency highly employed memory strategies while high-achievement students mostly employed metacognitive, social and cognitive strategies. Current finding stands in contrast with these past studies where some interviewees with low language proficiency reported that they would prefer using social strategies. Asking questions and cooperating with more proficient users of English language were among the two reported specific strategies of social strategies employed.

For example, one $R_1$ actually asked question to clarify her understanding of various Engineering terms in English language. In addition, a respondent, $R_3$ also would ask her friends or lecturers questions to obtain more explanation despite her inclination towards individual learning style most of the time as indicated below.

> `$R_1$: Many terms in Engineering are in English that cause us could not understand many things. So we have to use dictionary or ask other friends during learning session.
>
> `$R_3$: Because my grammar is kind of hancur. Kalau kita cakap. semua orang hancur. English kalau boleh cuba sebaik mungkin. Tapi kalau tak okay juga … what to do? (ketawa). You need to ask other parties juga.
> (Because my grammar is kind of very weak. If we talk, everybody would not be able to understand it. English should be tried as good as possible. But if not okay also … what to do? (laughter). You need to ask other parties also.)
>
> `$R_4$: For example, if there is a problem, don't know about a sentence that is don't know about its meaning. Then, (I have to) find it from dictionary. It is slow…So, if we have friends, we can ask and directly understand (it).

Such result was because respondent $R_3$ realised the importance of practising her speaking skill in English language with others. Although she tried very hard to practice by herself, it was inevitable to ask others for corrections in order to improve her command of English language. On the other hand, another respondent, $R_4$ would also ask for error correction in order to gain better understanding. He further added that encouragement from others was necessary for him to learn English language. Active application of social strategies by asking one another questions would improve their command of English language. Similarly, other respondents with moderate language proficiency also viewed the use of social strategies as the ways to improve their language proficiency.

Another specific strategy of cooperating with proficient users of the English language was also employed two respondents. For example, respondent $R_3$ who preferred to ask her friends with better language proficiency to encourage her to speak in English and correct her grammar.

### 4.6.2 Gender

Current study through interviews reported gender is one factor that are perceived to influence the use of affective strategies and metacognitive strategies. Gender in this context refers to male and female learners. A few male respondents [$R_{19,21,22,25}$] described their reasons for not favouring affective strategies. For example, respondent $R_{19}$ observed that males would not focus on their feeling even though they were nervous or tension. Another respondent $R_{21}$ indicated males would prefer to hide their feelings and were not willing to share their feelings compared to females due to their biological nature. In addition, respondent $R_{21}$ added that males were better in controlling their emotions, which resulted in less need to share their feelings as shown in the following excerpts.

$R_{19}$: Then, affective *pun, tak fokus sangat untuk perasaan mereka, sama ada mereka nervous atau tension…Ya.*
(Then, affective also, not really focused on their feeling, either when they are nervous or tension… Yes.)

I.: *Kenapa male tak share perasaan sangat tapi female lebih share perasaan?*
(Why male do not really share their feeling but female share their feeling more?)

$R_{21}$: *Mungkin* nature… *Sebab, bagi saya, mungkin sebab dia sebenarnya lebih macam kawalan emosi…* Male are better to control the emotion than female *lah … jadi bila saya dapat control emosi, dia kurang nak share.*
(Maybe nature… Because, For me, the possible reason is more to emotional control… Male are better to control the emotion than female lah … so when I able to control my emotion, she doesn't want to share.)

Attempts in lowering one's anxiety and emotional control in language learning are related to affective strategies and indirectly affect the learners' language learning (Oxford, 1990a). It is because learners could potentially feel the strangeness and get frustrated occationally (Hardan, 2013) and experience competitive environment among the learners in learning the language (Razak et. al., 2012). Hardan further added that good language learners are conscious about their emotional difficulties. With this in view, interviews of this study supported that male interviewees employed less affective strategies in learning English due to their biological nature.

A respondent $R_{22}$ also revealed that he was not in favour of using affective strategies because if he wanted to speak, he would just speak in English and ignored his feelings. Another male respondent $R_{25}$ further supported that he would not take care of his feelings in learning English and only girls were in favour of expressing or writing down their feelings in language learning. He elaborated writing down one's feeling during language learning was a waste of time. Besides the responses of male respondents on the use of affective strategies, only a female respondent $R_{27}$ explained she would employ affective strategies because it was easy for her to use these strategies besides the issue of females being more emotional and complicated.

$R_{22}$: *Sebab praktik kan bila kita cakap, just cakap saja lah… Tak perlu (rasa takut) lah. Kalau kita nak cakap, biarlah…tak payah kisah sangat perasaan kamu lah. Agak macam tu lah.*
(Because for practise, when we want to say, just say it lah… No need (to afraid) lah. If we want to say, ignore it lah… don't care much about your feeling lah. About like that lah.)

I.: Because you are a male... so... you don't really like to take care of your feelings?

$R_{25}$: I think so... My feelings are really girlish and I'm telling you but then is like when... for me... If I have to write every feelings I feel... it's very wasting my time.

$R_{27}$: Yes. It is girls are more like… Oh girls a very emotion… And then, they're very complicated.

In other words, most male respondents agreed that they would not focus on their feelings in using English to speak; hence, they would not employ affective strategies. Even though girls were more inclined to take care of their feelings, however, interviewees' responses contradicted with the finding of Tahriri and Divsar (2011) where males mostly employed affective strategies besides cognitive and compensation strategies. Another study by Abbasian et al. (2012) who stated males used more affective strategies than females also contradicted the findings of the current study.

Besides, interviewees also mentioned the use of metacognitive strategies. Such finding was in accordance with previous studies (Kiram et al., 2014; Tahriri & Divsar, 2011) where metacognitive strategies were frequently applied if compared to other strategies. The specific metacognitive strategy highlighted in this study was arranging and planning the learning. For example, a male respondent $R_{21}$ revealed females would prefer to plan ahead and in great details of what they wanted to do compared to males who did not prefer to plan for their language learning as shown in the excerpt below:

$R_{21}$: *So maksudnya female lebih teliti lah. That's why dia suka plan ahead, tapi lelaki is when you want to do, you do it. Ya…You don't really need any planning.*
(So, meanings that female are more detailed lah. That's why female likes to plan ahead, but male is when you want to do, you do it. Yes…)

A female respondent $R_{24}$ further supported that females were most likely to plan what they wanted to do. They would think and list out what they wanted to do in details. In addition, some females interviewees would prefer to describe how they wanted to achieve their goals through planning. As such, they would be more determined to achieve what they had planned.

In short, female interviewees were more likely to take charge of their language learning process by planning ahead to achieve their goals. Such finding corroborates with the view by Tannen (1991), who elaborated that females had higher enthusiasm and determination in learning because they would want to achieve social equity through education and indirectly settled male oppression (as cited in Liyanage & Bartlett, 2012, p. 247). Liyanage and Bartlett (2012) also agreed "females's generic superiority resides in their more comprehensive set of metacognitive and cognitive strategies" instead of having a "limited set of strategic competence" (p. 246). Similarly, Chang, Liu, and Lee's (2007) study was found to support that females used metacognitive strategies more than males.

### 4.6.3 Language Learning Environment

Some researchers (Kim & Margolis, 2000; Zhang & Nisbet, 2004) suggested environmental factor, namely levels of language exposure to second language might influence the use of language learning strategies (as cited in Magno, de Carvalho Filho, & Lajom, 2011). Magno, de Carvalho, Lajom, Regodon, and Bunagan (2009) described exposure as "the total amount of time spent by an individual in contact with a second language whether verbal or written, formal or informal, active or passive communication" (as cited in Magno et al., 2011, p. 490). Such exposure to a second language could include situations where learners converse with "family members, friends, classmates and colleagues by using a second language" (as cited in Magno et al., 2011, p. 490). In this

study, environmental support, namely exposure to learning a second language is defined in aspect of context either in formal or informal learning contexts through the influence of others. Such learning process will affect the choice of strategies by learners.

In relation to influence of others in the use of language learning strategies, the current study's interview findings seems to support Lin and Samuel (2013) who viewed learning as a result of mediation through the interaction among learners. During the process of interaction, learners will be actively involved to explore, discover and construct meaning from new information based on their prior knowledge and experience. Furthermore, according to Vygotsky's (1978) theory of learning, a learner would be able to achieve higher level of performance with the assistance of adults or more capable peers (as cited in Lin & Samuel, 2013). Based on interview findings, the influences by others include parents, peers and lecturers in employing strategies in second language learning.

#### 4.6.3.1 Parental Support

Parental involvement in academic leads to better academic achievement (Régner & Loose, 2006). Such academic parental involvement could be referred to the "parents' interest and participation in their children's schooling" and included "a range of home-based behaviours (e.g. checking homework, supporting children's academic choices) and school-based behaviours" (Régner & Loose, 2006, p. 778). Qualitative findings of current study were in tandem with such view of the importance of parental involvement in English language learning. In other words, parents were found to affect the choice of interviewees' language learning strategies. A few respondents reported their parents had encouraged them to apply one or more strategies in language learning, namely social, memory, cognitive and a combination of metacognitive and social strategies.

For example, a respondent $R_{16}$ indicated his father encouraged him to learn from others in language learning like asking questions to his lecturers or friends. Similarly, his mother also encouraged him to ask his friends' questions in language learning. Asking questions is a specific social strategy to obtain clarification (Oxford, 1990a).

$R_{16}$: *Bapa… dia lebih suka mengalakkan, macam bertanya dengan lecturer, bertanya dengan cikgu-cikgu, bertanya dengan kawan-kawan yang lebih tahu… Mak saya pun begitu… suka mengalakkan saya belajar dengan kawan-kawan.*
(Father… he likes to encourage, such as asking lecturer, asking teachers, asking friends who know more… My mum also… likes to encourage me to learn with my friends.)

Another respondent $R_{18}$ revealed her mother influenced her to social learning style. Indirectly, she was encouraged not be shy to ask others when she could not understand in the language learning process. In addition, her mother encouraged her not be feel shy in asking questions. Furthermore, quantitative finding on the highest employment of social strategies for this respondent was confirmed by her responses through interview. Another respondent $R_{20}$ also mentioned her parents encouraged her to ask her teachers or friends if she could not understand during the language learning process as stated below.

$R_{18}$: Ya (Yes), I think my my mother is tend to to …social
Ah… and then if you don't understand, you can try to ask people …don't be shy…

I.: *Maksudnya bapa kamu ada pengaruh kah terhadap strategi kamu belajar?*
(Meaning that your father has influenced your learning strategies?)

$R_{20}$: *Oh, ada lah. Ada cakap macam tu. Nanti kalau tak faham try tanya cikgu, tanya kawan…Cuba tanya cikgu… Mak pun lebih kurang dengan ayah juga.*
(Oh, yes lah. Ever said so. Later if (you) don't understand, try to ask teacher, ask friends… Try to ask teacher… Mum also more or less as my father also.)

Besides, a respondent, $R_{23}$ also stated his parents would ask him questions if they presented somethings in English. As such, he would imitate his parents to learn through asking questions. This respondent $R_{23}$ also asked his sister' questions to understand better because his sister had better English language proficiency. His frequent use of social strategies through survey with a mean score of 3.50 affirmed his interview responses in applying social strategies through asking questions.

On the other hand, a respondent $R_{15}$ revealed her parents motivated her to memorise in order to learn. She was asked to memorise what she learnt in order to remember before she spelled out what she learned again as stated below. Memorising is a form of structured reviewing under memory strategies (Oxford, 1990a).

I.: Your father em… dia akan suruh kamu hafal (he will ask you to memorise)?
$R_{15}$: *Iya… Dia pun lebih suka menghafal… Mak sama juga menghafal.*
(Yes… He also likes to memorise… Mother is also memorising too.)

A respondent $R_{10}$ revealed he would repeat the same sentence to remember better in language learning. His parents exposed him to repeating strategy because they also employed this strategy to learn. In other words, this respondent $R_{10}$ practice his English trough repeating as practicing strategy is a specific strategy under cognitive strategies (Oxford, 1990a). Besides, his parents also forced him to practice speaking in English language as shown in the excerpt below.

$R_{10}$: Their (parents) style of teaching me is…They just keep repeating…Repeat the same sentence so that it would go go into our mind so that we won't forget it la. It's a very good skill la I think.

$R_{10}$: I learn how to speak because of my parent, they force me to.

Another respondent $R_{11}$ indicated his father would plan his language learning by preparing him a timetable when he was at the primary and secondary levels. Such action by his father exposed him to arrange and plan his language learning, a specific metacognitive strategy (Oxford, 1990a). On the other hand, his mother would check his homework for all subjects including English since primary education. He would then ask his mother's questions when he need to edit his errors. Such method prompted him to ask questions, a specific social strategy as stated in the following excerpt.

$R_{11}$: In my memories he (father) used to prepare a learning timetable for me… When I'm still in primary and secondary schools level.

Yes… She (mother) checks through my work for all subjects including language subjects… when I'm in lower…primary.

#### 4.6.3.2 Peer Support

Peer support was also one factor affecting the choice of language learning strategies. Peer could promote team cooperation and sharing of ideas among students with various levels of language proficiency to understand mutually the tasks (Lin & Samuel, 2013). Falchikov (2001) described that there are four ways to apply peer learning: (1) students in the same class learn from each other; (2) In the same grade, efficient students help less efficient ones; (3) Senior efficient students guide juniors in the same school; (4) Elder students guide younger students from different schools or institutions (as cited in Tu & Chiang, 2016, p. 1265). In this study, the peer learning is defined within the scope of friends and coursemates. A few respondents indicated peers influenced them to employ a few strategies, namely cognitive strategies, metacognitive strategies, social and compensation strategies.

A respondent, $R_{12}$ indicated her coursemates encouraged her to search for information through Internet. She would search for the meaning of the phrases or words that she came across in Cleo, an urban dictionary through Internet. She highlighted that she used Internet for learning since secondary level. Searching for meanings of certain phrases through Internet was one specific cognitive strategy, namely using resources for receiving and sending messages (Oxford, 1990a).

$R_{12}$: Then sometimes Cleo they just use some phrase you can see words. Really they use I don't understand, I just go Google it and then… Yes, I think they (coursemates) influenced me… this strategy is good.

On the other hand, another respondent $R_{16}$ indicated his coursemates somehow influenced him to look for opportunities to practice in English language as they also employed the same strategy to learn as shown below.

I.: *Dalam faculty kamu, adakah mereka turut suka mencari peluang untuk berkomunikasi dalam Bahasa Ingerris?*
(In your faculty, are they also like to find opportunities to communicate in English language?)

$R_{16}$: *Oh. Kadang-kadang ada juga.*
(Oh. Sometimes it happens also.)

$R_{16}$ also revealed that he actually did not converse automatically in English language with his coursemates or friends during his primary and secondary education despite his strategy of looking for practice opportunities at the tertiary level. Seeking opportunities to practice with his coursemates or friends is a specific metacognitive strategy (Oxford, 1990a).

A respondent, $R_3$ mentioned the use of two specific social strategies, namely cooperating with proficient users of the new language and asking questions for error correction. Respondent $R_3$ indicated her friends, who possessed better command of English language helped her to learn better. She would then request her close friends to encourage her to speak in English. In addition, this respondent $R_3$ also would ask her friends for error correction as follows:

I.: *So maksudnya kamu pilih kawan yang tahap penguasaan Bahasa Inggeris lebih bagus daripada kamu la?*
(So, meanings that you choose friends that have better English command than you la?)

$R_3$: *Lebih bagus daripada saya* (Better than me)… I asked my friend. My close friends too encourage me also in talk… speaking… to correct *tu macam* (to correct like those)… You need to ask other parties juga (too).

Besides, a respondent, $R_{16}$ would ask his friends with similar level of language proficiency to correct his grammar mistakes especially sentence errors. Despite doing so, he illustrated that he improved slightly through his friends which have similar level in English command which reduced effectiveness of social strategies in learning English as shown below.

I.: *Bila kamu suruh orang lain correct you, kamu rasa ini sangat effective ka? Untuk memperbaiki bahasa kamu.*
(When you ask others to correct your language, do you feel it is very effective? To improve your language.)

$R_{16}$: *Ada… cuma sedikit sajalah… Impact dia macam, selepas kita, lepas kita betulkan kesalahan ah, kita lebih tahu ah, mana mana salah, mana grammar yang salah, mana sentence yang salah… Sama level (tahap penguasaan bahasa pada kawan-kawan).*
(Yes… only a bit only lah… Its impact like, after we, after we had corrected the mistake, we know more ah, where is the mistake, which grammar is wrong, which sentence is wrong… Same level (of English command as the friends.)

In short, respondents $R_3$ and $R_{16}$ mainly asked questions for error corrections, a specific social strategy (Oxford, 1990a). On the other hand, respondent $R_3$ would also seek help from her friends who were of better in their command of English language to practice with her. She employed a specific social strategy of cooperating with proficient users of the English language (Oxford, 1990a).

One common specific compensation strategy employed by the respondents [$R_{8,18}$] based on their friends or coursemates's influences was switching to mother tongue or other languages in order to overcome the limitations in speaking (Oxford, 1990a). For example, a respondent $R_8$ stated other people, like friends or coursemates will affect him using English to communicate. He would feel awkward to communicate with his friends in English if they encountered difficulties in speaking in English. As a result, he would switch to use his or his friends' mother tongue to continue their conversation in order to maintain their relationship as illustrated in the following excerpt.

$R_8$: When you communicate with people… there's a barrier you know when… When they use less, less English, they practice less English, so when you communicate with them is also feel very… awkward to… use the other language… Other mother tongue… use language that they are most comfortable with… to maintain the relationship.

I.: Do you all practice English like you talk to your friends your coursemates?

$R_{18}$: No, sometimes… start conversation in English… sometimes we mixed language when we are talking… my friends are quite cooperative… they also want to practise.

The other respondent, $R_{18}$ mentioned she would sometimes speak in English with her coursemates. She would initiate the conversation in English with them but later would need to use a mixture of languages to communicate further. Her friends were very cooperative and would communicate using mixed language because they were motivated to improve their speaking skills in English. Switching to other languages in order to overcome the limitations in speaking is another specific social strategy (Oxford, 1990a).

#### 4.6.3.3 Influence of Lecturers

Literature has revealed teacher approach could second language learning (Navaz, 2013; Ras, 2013; Salim, Salim, Johan, & Mandiangin, 2013; Xu & Huang, 2010). Yan and Zhang (2002) classified teachers' roles into three categories, namely "lecturers, teachers and facilitators" (as cited in Xu & Huang, 2010, p. 193). Among these three roles, facilitators is most encouraged because they could investigate the learners' psychological feelings and manipulate them to love language classes besides to attract them for active participation in class (as cited in Xu & Huang, 2010). Similarly, Ahmad, Rahim, and Seman (2013) stated that teacher creativity, maximum use of resources and teachers' wisdom in choosing teaching materials is a psycho-social factor (as cited in Ras, 2013, p. 23). Mercer (2001) debated "the role of language and interaction between the teacher and learners based on sociocultural theory are crucial for first and second language learning" (as cited in Navaz, 2013, p. 119). Navas also stressed the importance

of interaction between the lecturers and students in developing academic communication skills and second language learning. In other words, teachers played an important role in language learning.

Based on earlier discussion, interviewees acknowledged lecturers played the role in their use of language learning strategies, an area of second language learning. These strategies include cognitive strategies, compensation strategies, social strategies and memory strategies. For example, respondent $R_4$ said his lecturers mentioned of no one fixed method to learn in language classes. Instead, learners had to be flexible in using various strategies to learn in English classes based on their preferences and the nature of tasks as shown below.

> $R_4$: When learning English, I have lecturers that instructed that don't fixed one (method), (should be) flexible. In language (learning), it can be done in various (ways).
> I.: Do various (ways)?
> $R_4$: Yes. It means that it should follow our own demand to determine it (methods used). It is not fixed. For example, when constructing a sentence, can do with own sentences.

First, this study revealed lecturers influenced them to employ certain specific cognitive strategies, namely practicing strategy, creating structure for input and output by taking notes and highlighting and translating under analysing and reasoning strategy. For the practicing strategy, a few respondents [$R_{3,4,12,15,16,20,26,21}$] revealed that their lecturers encouraged them to practise by speaking to their friends or coursemates, including themselves in English language. For example, a respondent $R_{21}$ mentioned that he was forced to present in English by his lecturers. Speaking and presenting in English language indirectly helped these interviewees to practice naturally to improve their English language as indicated below. Practicing naturalistically is a specific cognitive strategy (Oxford, 1990a).

$R_{21}$: *Ah, kalau macam pensyarah, pensyarah lebih lebih… time presentation lah... presentation mesti membiasakan dalam Bahasa Inggeris… presentation mesti Bahasa Inggeris.*
(Ah, if lecturer, lecturer more more … time presentation lah... must be familiarised yourself to present in English language… presentation must be in English language.)

Besides, creating the structure for input and output was another particular strategy employed by respondent $R_{11}$. This respondent mentioned he would highlight the PowerPoint notes like what his lecturers were doing and then he wrote the important points at the sides of the slides. Highlighting and taking notes are strategies used to create the structure for input and output under cognitive strategies (Oxford, 1990a).

$R_{11}$: The lecturers will highlight the main point in the note… PowerPoint… I will highlight… I will write it down again… important points… lecturer likes to do like that.

In addition, respondent $R_{12}$ applied translation, a strategy to analyse and reason under cognitive strategies. This respondent, $R_{12}$ stated she and her friends sometimes used English and sometimes *Bahasa Melayu* (BM) to learn. However, she explained they would also use the original English word if they did not know how to translate these words from BM to English. This had prompted them to complete their assignments in BM because they just did not know how to do it in English. Applying translation of words was a specific cognitive strategy.

I.: Oh. So meaning to say you have sometimes you are using English sometimes you are also use BM.
$R_{12}$: Yeah but some of the terms that we don't know how to uh, translate into BM, we just use it, we just directly use it… in English but then if most of the words we can translate it into BM and then we just do our, our assignments in BM.

Secondly, a respondent $R_4$ mentioned his lecturers would use mixed languages like English and Malay language in their conversations. Using mixed languages, either mother tongue or other languages could be considered a specific type of compensation strategies which was used to overcome the limitations in speaking. Indirectly, this respondent was encouraged to adopt such compensation strategy when communicating with others.

Likewise, another respondent $R_{12}$ would also use present her assignments in mixed languages like English and Bahasa Melayu as shown in the excerpt below. She explained her lecturers would not bother whether they presented in English or BM as long as they were confident in presentation. This had encouraged respondent $R_{12}$ to present the assignments creatively using mixed languages if they were unable to translate into English language.

$R_4$: Local lecturers,… (they) used mixed languages… English and BM.

$R_{12}$: Yeah, during the lectures, they (lecturers) speak in English but during our presentation it's our own things, it's our own creativity, assignments. Depend. It depends on the group… Yeah but some of the terms that we don't know how to uh, translate into BM, we just use it, we just directly use it.

Thirdly, lecturers were also found to encourage these respondents [$R_{3,20,27}$] to use social strategies. For example, respondent $R_3$ said her lecturers would encourage them to ask questions and to work with other people in order to obtain more information. Otherwise, they would not be willing to share their information as indicated in the excerpt below. When $R_3$ asked questions, she indirectly employed a social strategy to obtain clarification. In addition, cooperating with others to obtain more information was also a specific social strategy (Oxford, 1990a).

$R_3$: Lecturer told me, *dia kata salah satu caranya kamu kena tanya orang. Tanya tanya tanya tanya tanya, even dia relate sikit pun tanya jugak, haha… Ya, saya suka bekerjasama (dengan orang lain), saya suka tanya macam sebab sini kan… dia information… dia nak share tapi kita kena tanya… Terus share takda. Eh tak, takkan direct share.*
(Lecturer told me, he said one of the ways is you have to ask others. Ask ask ask ask ask, even there is a bit related, have to ask also, (laughter)… Yes, I like to cooperate (with others), I like to ask such as for the reason here… his information… he will share but we have to ask… directly shared, no. Eh no, no direct sharing.)

Similarly, respondent $R_{20}$ also mentioned her lecturers encouraged her asking her coursemates and lecturers' questions if she had to clarify matters in understanding the articles mostly written in English to complete the assignments. Asking questions was classified as to learn from peers, a specific social strategy (Oxford, 1990a). Likewise, $R_{27}$

indicated her lecturers indirectly forced them to speak or to ask them questions in English. She added she enjoyed doing so and could even learn faster and remember better as indicated in excerpt below. In short, respondents frequently asked questions [$R_{3, 20, 27}$] or cooperated with others in learning a language [$R_{3,20}$].

> $R_{27}$: But the lecturer has to push the students to talk to them if they asking question. The student push to ask question and it makes them participate for it… enjoy (asking question)… ya (learn better, remember better)… faster learning by doing it.

Interview findings showed respondent $R_{15}$ was incorporated a few specific memory strategies, namely using keywords strategy, representing sounds in memory strategy and reviewing well strategy in order to learn English language (Oxford, 1990a). For example, this respondent $R_{15}$ revealed her lecturers would asked her and her friends to remember the phrases, verses or terms and to learn how to speak or elaborate further the idea using English language in order to face the exams. In this scenario, remembering the phrases, verses or terms could be classified under using keywords strategy whereby learning how to speak or elaborate furthers could be grouped under representing sounds. Both of these specific memory strategies enabled the respondent to use structured reviewing strategy to respond to information given in English language.

### 4.6.4 Parents' Socioeconomic Status

Parental characteristics, such as occupation, educational level, prestige, power, and lifestyle, denote numerous mediating factors associated with the socioeconomic status (SES) and could significantly affect the development and academic achievement of their children (Gonzalez, 2001). Wang also reported that socioeconomic status (SES) could be a "predictor of the child's metacognitive development" (as cited in Gonzalez, 2001, p.11). Such metacognitive development was viewed as a social construction that "stimulates the development of learning strategies and executive process", in order to monitor and guide

the cognitive tasks performance during early childhood (Gonzalez, 2001, p. 11). Likewise, Hoff and Tian (2005) supported family SES was related to the children's language development.

Some researchers (Hoff, 2003; Huttenlocher et al., 2007) also revealed that socioeconomic status could be determined through "the families' education and income" (as cited in Richels, Johnson, Walden, & Conture, 2013, p. 363). Hence, since sociocultural theory implied language learning could go beyond the learners to the environmental contexts and others, parents' socioeconomic status was another prominent factor that affected the use of language learning strategies in the current study. This finding was slightly in tandem with a quantitative study by Tam (2013) where the socioeconomic status of the 50 first year undergraduates influenced their use of social strategies These SES factors are defined based parents' occupation, income and level of education in this study. Firstly, a few respondents revealed that parents' occupation had some influence on her language learning strategies, namely cognitive strategies, social strategies and metacognitive strategies.

A few respondents applied the practicing strategy, a specific cognitive strategy based on their parents' levels of education. For example, a respondent $R_{12}$ revealed that his father encouraged her to repeat the words, idioms or new terms while learning English. By doing so she was actually employing a specific cognitive strategy, namely practising strategy. On the other hand, her mother would encourage her to improve her English language achievement by attempting all available past year questions. Practising past year questions was considered a form of practicing strategy under cognitive strategies. In addition, this respondent $R_{12}$ also learned through highlighting new words with colours before searching for the meaning of these words as indicated in the excerpt below. Highlighting was a particular cognitive strategy to create structure for input and output.

I.: Cognitive is like you like to practice, okay you repeat you know, some some new terms, new word you keep on repeating the words or the idiom right? Do you learn?
$R_{12}$: Yeah. Oh doing past year questions la, to improve your language… My mummy
I.: … Highlighting, you use colours right to highlight?
$R_{12}$: Colours and then I'm trying to find the words, find the meanings

In term of parents' occupations, a few respondents [$R_{5,12,14}$] revealed their parents who were English teachers somehow would encourage them to speak English at home. Speaking English at home provided a platform for them to practice their English language speaking skills, a specific cognitive strategy under practicing naturalistically (Oxford, 1990a).

$R_5$: Ya, because maybe because my parent, my mother is English educator so we usually use English. At home... and also dialect la but English is the most use language to communicate.

$R_{12}$: Yes because both my parents are teachers and they can teach in... they are English teachers, actually… Yeah so basically we'd speak in English at home.

$R_{14}$: *Kadang-kadang saya cakap BI dengan mak sebab mak saya English teacher… Ya, kadang-kadang kami di rumah dengan adik beradik kami cakap BI.*
(Sometimes I speak English language with my mum because my mum is a English teacher… Yes, sometimes we speak English language with my siblings at home.)

Respondent [$R_{12}$] indicated her parents influence her in using social strategies. This respondent [$R_{12}$] would ask her father, an English teacher if she encountered problems in learning English language. Since she viewed her father as the best reference to learn English due to his job as a teacher, she would rather ask her father instead her friends in learning English. Asking questions for the purpose of clarification was a specific social strategy.

Two respondents [$R_{13,18}$] revealed they would seek for practice opportunity to improve their English language. For example, a respondent $R_{13}$, who father worked as a manager in the corporate world, somehow provided him the opportunity to practice his English language. He further explained he could speak in English language to his father's boss, who preferred to communicate in English language. Likewise, another respondent, $R_{18}$ also was encouraged to speak in English with her mother's colleagues, who were doctors

or nurses for the purpose to socialise with them as reported below. When both respondents tried to seek opportunities to practice with their parents' colleagues, they were employing a specific metacognitive.

$R_{13}$: Um because sometimes my dad will bring me to his office and stuff so I get to talk to his boss and… Yep opportunity.

$R_{18}$: Ada my parents took me to their events… You know the events and family day. At that could (use English with the nurse) … they speak English and the doctors also ... in terms of communication.
I.: So your parents play a role in your strategy la?
$R_{18}$: *Ya* (Yes).

In short, parents' occupations were found to influence the use of cognitive, social and metacognitive strategies in this study. Practising and highlighting was the popular specific cognitive strategies employed by some interviewees. On the other hand, asking questions was common specific social strategy used by respondents. Two respondents revealed that seeking for opportunities to practice in English language was the most employed strategy.

Secondly, parents' income also was also a factor that was perceived to influence the use of language learning strategies. For example, Ras's (2013) study indicated the outstanding students from higher income family employed more learning strategies compared to students form low income. Likewise, qualitative findings of the current study reported parents' income seemed to influence the choices of strategies by interviewees. A respondent $R_{17}$ revealed that since her parents' income were under the category of lower middle income group, it would be better to ask questions in order to learn due to financial constraint. Asking questions is a specific social strategy employed. She further elaborated since her parents would first observe and then explained to her what was happening for her to learn, she was also motivated to ask questions in order to learn.

Likewise, respondent $R_{18}$ also stated that she would ask in order to learn something since her parents' income was from the lower middle income category, which might have higher chance to encounter financial constraint in improving her language achievement. Her parents would bring her to their social gatherings and there she was motivated to ask in order to obtain more information. As mentioned by the respondents, $R_{18}$, "and to the events… I will… I want to ask". Similarly, respondent $R_{20}$, also asked her teachers in order to improve her command of English language due to her parents' low level of income. She elaborated that such strategy to learn was the cheap, easier dan fast way in learning the language.

> $R_{20}$: *Biasanya cakap lagi banyaklah… lagi suka pakai itulah… pergi tanya… pergi tanya cikgulah. Em, menjimatkan dan seterusnya lagi mudah… cepat.*
> (Normally talking is more lah… like to use this more lah… go and ask… go and ask the teacher lah. Em, cheap and then easier… fast.)

Other than social strategies, a respondent, $R_{19}$ who revealed that since his parents were unable to provide him necessary supports for language learning due to their low levels of income, he would seize every opportunity to practice in English including speaking in broken English as shown below. Such method of learning is also a form of metacognitive strategy.

> $R_{19}$: *Sebab kita tahu kemampuan parent kita… jadi, kita tak boleh expect mereka yang beri opportunity dekat kita. Jadi, bila opportunity sudah datang, grab it la… So you have to do planning, maksud you have to grab opportunity walaupun terpaksa cakap broken pun, you nak cakap la.*
> (Because we know our parents' capability… so, we can't expect them to give us the opportunities. So, when there is an opportunity, grab it la… So you have to do planning, meanings that you have to grab opportunity even though was forced to say broken (English) also, you have to say it la.)

Likewise, another respondent, $R_{22}$ agreed he would plan to improve his command of English language due to his parents' low income. Planning and setting goal to improve his command of language was a specific metacognitive strategy. From the statement "Kalau dekat luar lebih kepada usaha sendiri (If stay outside, more on my effort)", this respondent emphasised the importance of evaluation and effort in language learning.

> $R_{22}$: *Memang ada effect juga sikit-sikit (pendapatan ibu bapa)… Kalau dekat luar lebih kepada usaha sendiri kan. Kalau kat luar tu, macam campur dengan kawan-kawan, ah, saya akan cuba cari untuk dapatkan lebih lagi.*
> (Definitely there is a bit of effect too (parents' income)…If stay outside, more to my own effort. If stay outside, such as mixing with friends, ah, I will try to gain more.)

Lastly, parents' education level was also a factor affecting the choice of strategies by interviewees. These include the use of metacognitive, compensation and memory strategies. For example, a respondent, $R_{25}$ stated since his parents were from the higher education background, it was a good opportunity for him to practice with such people with high levels of education even though he would feel timid sometimes. Seeking for practice opportunity is a specific metacognitive strategy. While practising to speak with them, he sometimes would guess the meaning or use gestures if he encountered difficulties in communication. Guessing strategy and using gestures to overcome the limitations in speaking were the specific strategies under compensation strategies.

> $R_{25}$: … especially when you talk to people of very… very high... higher education… So I tend to… feel timid... But in a way… Ya, I still, I try my very best (to talk with them). And during that time, I used a lot of gesture. Haha. Like that.

On the other, respondent, $R_{26}$, whose parents were of the lower levels of education mentioned her parents encouraged her to memorise the words and where she learned these words in order to use it correctly. Memorising the words and remembering the location of these words were specific memory strategies (Oxford, 1990a). In short, these interviewees reported that their parents' occupation, income and education affected their choices in employing various language learning strategies.

### 4.6.5 Motivation

Various studies (Mehrpour & Motlagh, 2015; Mochizuki, 1999; Oxford & Nyikos, 1989) indicated motivation as a crucial factor in determining the use of language learning strategies. Likewise, interviewees also expressed that motivation was an influential factor to employ various language learning strategies. These interviewees were mostly motivated to learn English in order to achieve better language proficiency and to survive in the competitive world. Gardner elaborated that such goals in language learning were classified as instrumental motivation, where learners studied the language to "achieve utilitarian goal or to further their studies in the target language" as defined by (as cited in Awad, 2014, p. 99).

For example, respondent $R_5$ revealed she was motivated to learn English language with her friends because she could correct or to be corrected by her friends. In addition, she stated the actual goal to discuss with her friends was to accomplish the tasks given. By doing so, she displayed external motivation to accomplish the tasks given. Joining the discussion with others enables correction of errors, was a specific social strategy under cooperating with others.

> $R_5$: For language… if in group than maybe I can warm up because my friend will correct me… we correct each other. .Nothing more except for what we discuss to accomplish the task, that's all.

Two respondents revealed the inner drive to be successful had motivated them to apply some language learning strategies. For example, respondent $R_{11}$ was motivated to learn in order to survive in the competitive environment. He would then obtain all knowledge through reading the selected books that guided him on methods to use, how to study and how to plan in order to be successful. Through such books, he was motivated to plan for his language learning, a specific metacognitive strategy.

$R_{11}$: ***像我****刚才讲我是从书，有的时候我喜欢看那，那一些怎样*
(like I said just now, I (got it) from book, sometimes I like to read those (books), how those can…)
I.: How to be successful?
$R_{11}$: *Ya* (Yes) ... ***到****现在还是* (until now I still (read books)).
I.: Oh ***你就喜****欢* (you like to) how to be a successful man, how to score, how to motivate yourself *这样的东西啦* (those things la)
$R_{11}$: Ah, how to survive in current.

On the other hand, another respondent, $R_2$ stated he would do revision alone at home, making own notes and trying to rationalized matters taught by his lecturers. By doing so, he applied the use of reviewing well under memory strategies. He also explained he employed these strategies in order to learn English language effectively and to improve his command of English language as shown in the excerpt below. Indirectly, such motivation to achieve better English language proficiency and to pass examinations had prompted him to seek opportunities to practice his language besides self-evaluation, a specific metacognitive strategy.

> $R_2$: Sometimes in class, I don't understand what the lecturer taught, sometimes I will revise myself at home, make my own notes, and then try to investigate which part I don't understand… Seldom for me to follow them (friends), their methods because it is difficult to match their strategies with my own strategies. So I will follow my own strategies… if I want to know about something, I will try to investigate it by myself first to know what things I don't understand.

Likewise, another respondent, $R_{25}$ also indicated he was very motivated to learn English. Since young, he already volunteered to answer questions in class. In addition, she also volunteered to ask questions and spoke a lot in English language classes. He further expressed that he looked for opportunities to practice English language as shown below. Asking questions was a specific strategy whereas looking for opportunities to practice was a specific metacognitive strategy. Similarly, respondent $R_{24}$ agreed she would look for opportunities due to her interest to learn. In addition, she set targets or goals that motivated her to learn as indicated below. Seeking opportunity to practice and setting goals by these respondents were also under metacognitive strategies.

$R_{25}$: … but then when it comes to English classes, just like I took EPP and ARW that day, I was like the most talkative and then yeah I speak a lot. They (my friends) were quite surprise especially during the first few classes.

$R_{24}$: *要*depends on *你自己有没有兴趣...会啦(这个环境我可以快点学就尽量学)* (have to depend on whether you yourself have the interest or not… I will (in this situation, I will quickly learn and try hard in learning).

In short, most of the interviewees resorted to use specific metacognitive strategies, like planning and setting goals and seeking for practice opportunities due to their motivation to improve their English language proficiency. Such interview finding was in tandem with the finding of an empirical study by Liu and Chang (2013) where metacognitive strategies highly correlated with motivation. Likewise, Karlak and Velki's (2015) study stated communicate-metacognitive learning strategies were closely associated closely with motivation. In addition, intrinsic motivation to improve their English language proficiency also led to the use of metacognitive strategies (Karlak & Velki, 2015).

Qualitative findings from interviews revealed that there were five prominent factors that were perceived to influence the learners' language learning strategies. These factors include language proficiency, gender, language learning environment, parents' socioeconomic status, and learners' motivation.

### 4.6.6 Conclusion

This chapter has discussed the preferred perceptual learning styles and language learning of the first year undergraduates in learning English as a second language. In addition, it also described that there is a weak relationship between perceptual learning styles and language learning strategies among these undergraduates. Nevertheless, such result revealed that styles to a certain extent might have influence over the use choice of language learning strategies. Furthermore, this chapter also provided the more prominent factors that are perceived to influence the perceptual learning style preferences and

language learning strategies through qualitative results. These factors could possibly revealed that styles and strategies could be discussed from both the psychological and sociocultural perspectives. As such, the following chapter will provide the summary and conclusions derived from the findings in this chapter.

# CHAPTER 5: SUMMARY, IMPLICATIONS AND RECOMMENDATIONS

This chapter will begin by summarising the findings from preceding chapter. It is then followed by discussing the theoretical, methodological and pedagogical implications based on the findings reported in previous chapters. Recommendations for future research will also be addressed in this chapter.

## 5.1 Summary of Findings

This study aims to investigate the overall perceptual learning style preferences and language learning strategies of the first year undergraduates in Unimas and its relationship between styles and strategies. In addition, it also explores the factors that might influence their perceptual learning style preferences and language learning strategies. It seeks to answer the following research objectives:

(i) investigate perceptual learning style preferences and language learning strategies among undergraduates.

(ii) determine relationship between perceptual learning style preferences and language learning strategies.

(iii) explore the factors that influence perceptual learning style preferences and language learning strategies.

Based on these research objectives (RO), this study aimed to answer the following questions (RQ):

RO1: RQ1 What are the perceptual learning style preferences of undergraduates in learning English language using Perceptual Learning Styles Preferences Questionnaire (PLSPQ, Reid, 1987)?

RQ2 What are the language learning strategies of undergraduates using Strategy Inventory for Language Learning (SILL) version 7.0 (Oxford, 1990a)?

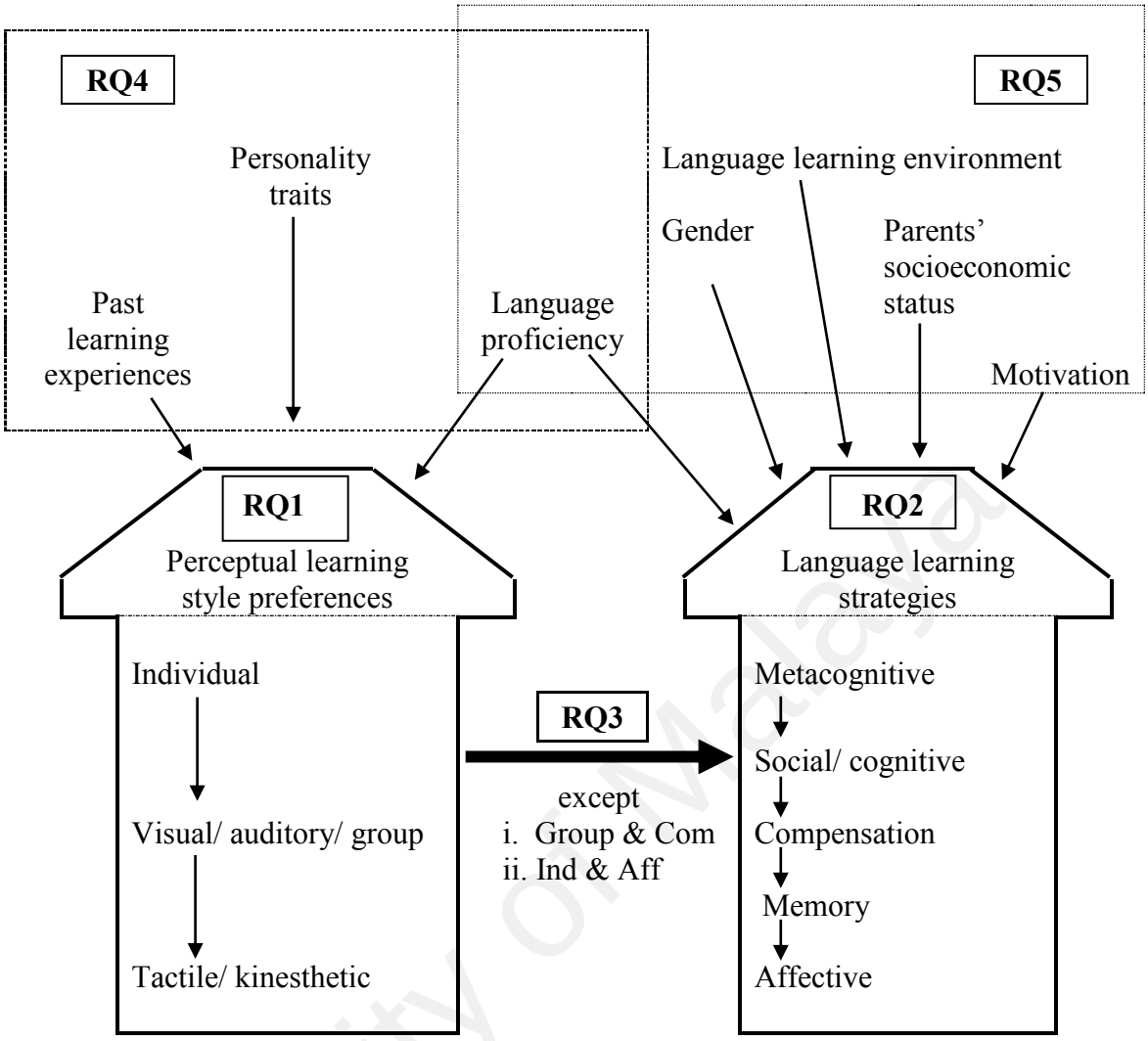
RO2: RQ3 What is the correlation between perceptual learning style preferences and language learning strategies?

RO3: RQ4 What are the factors that influence perceptual learning style preferences?

RQ5 What are the factors that influence language learning strategies?

This study showed that the first year undergraduates had highest preference for individual learning style in learning English language. This was followed by visual, auditory and group learning style preferences that showed no statistical significant differences. Tactile and kinesthetic learning styles, which had no significant difference between each other, were the least preferred styles among the undergraduates in this study (Figure 5.1).

As for language learning strategies, finding revealed that metacognitive strategies were most employed by respondents in learning English language compared to other language learning strategies (Figure 5.1). It was followed by social/ cognitive, cognitive/ compensation, and lastly memory/ affective strategies. The mean scores of social and cognitive or cognitive and compensation strategies did not differ statistically. Similarly, no significant differences were found between memory and affective strategies.




Note: Com = Compensation; Ind = Individual; Aff = Affective

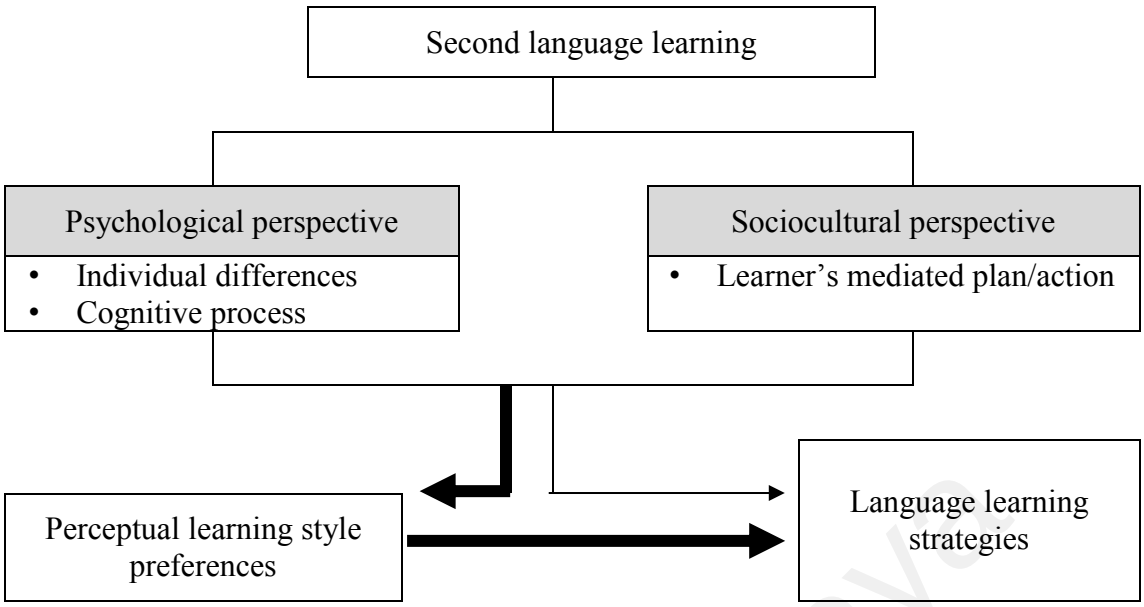
**Figure 5.1: Summary of findings of the study**

Findings also revealed that most perceptual learning style preferences had a negative significant relationship with language learning strategies. Negative relationship implied that when learners had preferences for certain perceptual learning styles, they might use less of certain language learning strategies. Such relationship is further classified as a "very weak" relationship (Chua, 2006). Nevertheless, no significant relationship were found between two categories, namely group learning style and compensation strategies and between individual learning style and affective strategies.

Based on qualitative data, language proficiency, past learning experiences and personality traits were the prominent factors that were perceived to influence the learners' perceptual learning style preferences. On the other hand, language proficiency, gender, language learning environment, parents' socioeconomic status and motivation were the crucial factors that were perceived to influence the learners' use of language learning strategies. Language learning environment factor comprises the formal and informal language learning environment. Lecturers are considered to exert certain influences over the learners' use of language learning strategies in formal context of language learning. Correspondingly, peers' support, which includes coursemates, also seems to affect the use of language learning strategies in the formal context. On the other hand, parental support was considered to affect the language learning strategies employed in the informal context of language learning. Likewise, peer support showed by friends indicated the use of language learning strategies in language learning could be extended to the informal context of learners. The following section will continue to discuss the theoretical implications, methodological implication and pedagogical implication based on the findings from this study.

## 5.2 Theoretical Implications

Language learning strategies and language learning styles were among the crucial variables in learning a language (Oxford, 1989a). This study discussed language learning strategies (LLS) from the psychological and sociocultural perspectives based on the descriptions by Oxford and Schramm (2007) as shown in (Figure 5.2). However, the influence of psychological and sociocultural perspectives on the learners' perceptual learning style preferences is still debated.




Note: Bold arrows ( ➡ ) showed newly proposed relationships

**Figure 5.2: Researcher's proposed model in this study (Oxford & Schramm, 2007; Tai, 2013)**

One of the theoretical contributions was it demonstrated that perceptual learning style preferences to a certain extent was related to language learning strategies despite its "very weak" linear relationship between these two variables except for two categories, namely group learning style and compensation strategies and between individual learning style and affective strategies. This study establishes further support that there is a link between language learning styles and language learning strategies as posited by various researchers (Carson & Longhini, 2002; Chu, 2013; Moenika & Zahed-Babelan, 2010). In short, even though the relationship between styles and strategies is considered "very weak", it is undeniable that there is a certain degree of relationship between language learning styles and language learning strategies (see Chapter 2, Section 2.7).

Based on qualitative findings, this study also sheds light that second language learning could be extended beyond the individual factors to their immediate environments, in which they are engaged in the language learning process. This study revealed that factors that were perceived to influence the learners' preferences for perceptual learning styles

were language proficiency, past learning experiences and personality traits. Language proficiency and personality were among the individual factors under psychological perspective whereas past learning experiences could be categorised under the sociocultural perspective as language learning had extended to the learners' immediate language learning environment outside the formal classroom. In other words, current finding indicated that language learning styles may be influenced by other sociocultural factors besides the psychological aspect. Since sociocultural factor were found to influence the learners' perceptual learning styles preferences, this study showed that language learning styles could also be discussed from the psychological and sociocultural perspectives, similar to the influence of these two perspectives in studies on learner strategies (Oxford & Schramm, 2007) as shown in Figure 5.2. Since study revealed that styles could be affected by the sociocultural perspective, it also revealed that learning styles variable could be "extended or modified" based on various tasks or situations and is not fixed modes of behavior (Reid, 1987; Oxford, 2011, as cited in Hatami, 2012, p. 488).

In addition, learners' language learning strategies were reported to be influenced by some prominent factors, namely language proficiency, gender, language learning environment, parents' socioeconomic status and motivation in this study. Some of these reported factors, namely language learning environment and parents' socioeconomic status could reflect the influence of sociocultural perspective because language learning is considered to be influenced by the learners' immediate environment. In addition, other factors, namely language proficiency, gender and motivation that were perceived to influence the choice of language learning straegies could be categorised under the psychological perspective. Such findings corroborates with Oxford and Schramm (2007) who indicated language learning strategies could be discussed from the psychological and sociocultural perspectives (Figure 5.2).

In sum, based on findings from this study, second language learning could be discussed from both the psychological and sociocultural perspectives (Figure 5.2). Oxford and Schramm (2007) obviously indicated that only language learning strategies could be investigated from these two perspectives. It is uncertain whether styles could be discussed from the psychological or sociocultural perspectives. However, the current finding of this study clearly indicated that style could be discussed from the sociocultural perspective besides the psychological perspective. Factor on learners' past experiences clearly revealed that learners' preferences for perceptual learning style might also be influenced by their immediate environments. Finding of this study also echoed Oxford and Schramm's view that language learning strategies were influenced by psychological and sociocultural perspectives. Additionally, the current findings also contributed to literature on language learning research on adult learners in tertiary settings because studies in such area were still inadequate.

## 5.3 Methodological Implications

This study emphasised the importance of using mixed methods research designs in language learning research. Despite the plethora of studies on language learning styles and strategies, majority of these studies collected data either quantitatively or qualitatively (see Chapter 2, Section 2.8). Since this study incorporated quantitative and qualitative approaches at a single research, the validity and reliability of data could be enhanced. Similarly, Zohrabi (2013) indicated that mixed method research designs have becoming more prominent and could enhance the validity and reliability of the data. Quantitative findings through survey questionnaires merely indicated the overall patterns of perceptual learning styles preferences and language learning strategies of these first year undergraduates. Subsequent interview data could further describe the styles and strategies employed by these learners and including the factors that were perceived to

influence these two variables. In addition, by using interviews, the sociocultural aspect of learners could be determined better through qualitative finding. Thus, incorporation of such method could provide a more in-depth data.

In addition, past studies tend to focus on language learning styles and language learning strategies variables separately. Not only these two variables are investigated separately, literature also shows a discrepancy in the methods and instrumentations used on learners with different cultural backgrounds and language learning contexts. Such condition would create an issue to generalise findings on studies related to language learning styles and strategies. Moreover, it was stated such studies should be replicated on different samples and contexts as language learning styles and strategies are important variables to enhance the success of language learning (Moenikia & Zahed-Babelan, 2010).

In relation to these research gaps and the view that language learning styles could be linked to the learners' language learning strategies (see Chapter 2, Section 2.4), this study had attempted to investigate these two variables, namely perceptual learning style preferences and language learning strategies simultaneously and in a single research. By investigating these variables simultaneously, this study proved that there is a certain degree of relationship between language learning styles and strategies besides to provide more information on styles and strategies.

Besides, this study had confirmed that the PLSPQ and SILL instruments are highly reliable instruments. For example, even though PLSPQ yielded high reliability as a whole (Li, 2012; Vaseghi et al., 2013), items in certain categories also showed lower acceptable reliability. Similarly, even though this study revealed that SILL is a highly reliable instrument and is in tandem with findings of past studies (Mohammadi & Alizadeh, 2014; Savas & Erol, 2015), specific items in certain categories showed lower reliability.

Lack of language learning research were found at the tertiary level especially in Malaysia (Tan & Kaur, 2015) despite many of these studies were found in the western context (see Chapter 1, Section 1.5). Therefore, this study aimed to identify the overall perceptual learning style preferences and language learning strategies of the first year undergraduates in a Malaysian public university. In other words, this study also investigated the adult learners as respondents in many past studies focused on primary and secondary learners. Learners's factors could be one important mean to determine the methods used in data collection. Additionally, appropriate research data ought to be utilized to enable research to determine the sociocultural aspects of learners. Furthermore, based on the recent perspectives of language learning, the process of learning has shifted to focus more on the learners instead of teachers (Lavasani & Faryadres, 2011; Zohrabi et al., 2012). Furthermore, learners' factor may need to be examined in the aspect of sociocultural difference rather than just focus on the personal individual characteristics as learning could be extended to their immediate environment besides the formal language learning classes. Hence, these perspectives should be included in the selection of learners for future second language learning research. Besides, the studies could be expanded to include the learners from the private universities besides the local universities for better comparison of learning among learners.

## 5.4 Pedagogical Implications

Findings revealed that these first year undergraduates had highest preferences for individual learning styles, followed by visual learning styles and auditory learning styles. As observed in Malaysian tertiary education, most lecturers or language instructors delivered their courses through verbal explanations and projected language learning materials through PowerPoint presentation, or online resources. Such teaching preferences somehow matched the undergraduates' preferred visual and auditory learning

styles. However, due to the nature of large class size, there is a tendency to conduct assessments in either groups or in pairs. Individual assignments are not the preferred type of assignment in tertiary context. Such assessment method reflected mismatch of learners' learning style preferences as they showed the highest preference for individual learning style. So, this finding implied that there is a need for the lecturers or language instructors to realign the nature of assignments to accommodate learners' differences in style preferences. Such move is in line with the shift of teaching to focus on learners (Hakan et al., 2015; Lavasani & Faryadres, 2011; Zohrabi et al., 2012).

Furthermore, Abidin et al., (2011) emphasised it was crucial for teachers to identify their students' learning style preferences because it could serve as a guide for teachers to adjust their teaching styles to suit their students' needs. Language instructors may encourage and facilitate the learners to stretch beyond their styles and strategies the role to encourage and facilitate these learners to stretch beyond their comfortable zone of individual learning style to group style for better language learning. Such claim is also supported by Mulalic et al., (2009) and Reid (1987) who viewed employing multiple learning styles may promote higher learning outcomes (as cited in Nosratinia & Soleimannejad, 2016). Likewise, Lindsay (1999) indicated that the harmony between learning style and teaching styles will improve academic achievement and satisfaction in learning (as cited in Moenikia & Zahed-Babelan, 2010). Montgomery and Grout (1998) besides Gold and Rimmer (2000) also emphasised teacher and educational planners should teach based on learners' styles as it could "influence their educational materials, models and methods in classroom" (as cited in Moenikia & Zahed-Babelan, 2010, p. 1170).

Language instructors should define the students' profiles, learning style preferences and language learning strategies and create learning environments that may include and appreciate their preferred learning styles and language learning strategies as proposed by Obralić and Akbarov (2012). Appropriate knowledge on the students' preferred learning styles and language learning strategies will enhance greater success in language learning and language teaching. Providing strategy and style training are also recommended to enable learners to stretch beyond their preferred or comfort zone of learning and to expand their use of appropriate and effective strategies based on language learning tasks and contexts.

Besides, the results also indicated that language learning process could be extended based on the sociocultural and psychological perspectives. Hence, instructional methods should also consider these two perspectives in lesson planning in order to encourage the learners to learn effectively and in an enjoyable environment. Language learning activities ought to be diversified and to include outside formal and informal language learning environments.nguage learning environment either formally or informal must be conducive and motivated the learners to learn.

Other than focusing on the learners' styles in language learning, this study also sheds an important light that the process of language learning has moved to a higher level of language learning where most undergraduates highly employed metacognitive strategies. The tendency to employ metacognitive strategies is considered as a positive sign because learners who are in favour of these strategies will be able to plan, monitor and evaluate their learning processes (Oxford, 1990a). In addition, metacognitive strategies will encourage learners to be more independent and autonomous in language learning because they are able to set their own goals and ways to achieve their language learning objectives.

As such, the use of metacognitive strategies ought to be encouraged among tertiary learners.

Past studies have also indicated the use of metacognitive strategies is usually related to high proficient learners (see Chapter 2, Section 2.6.7.4). Besides, Sun (2013) indicated metacognitive strategies are crucial to allow learners to learn independently and contribute significantly to language learning success. Likewise, Larsen-Freeman (1991) stated that learning styles and metacognitive abilities comprising critical thinking are important to facilitate and promote second language learning (as cited in Nosratinia & Soleimannejad, 2016). For example, according to Anderson and Vandergrift (1996), employing think-aloud protocols and other verbal reports are useful activities under metacognitive strategies.

In sum, the findings of current study serve as a platform for language instructors or language practitioners to obtain the profiles of the students' styles and strategies in lessons planning and to cater to various needs of language learners. Strategy training could also be proposed to language instructors so that they will be aware of various types of language learning strategies. Such awareness will assist them to encourage the learners to stretch beyond their preferred styles and strategies for better language performance. Such training could also path the way to achieve Malaysian English Language Roadmap's (2015-2025) goal by encouraging curriculum planners to match the curriculum to the actual practices or strategies in class. By doing so, it might guide the learners to achieve proficiency standards that are aligned to international standards and benchmarked against Common European Framework of Reference or CEFR (Azman, 2016).

## 5.5 Suggestions for Further Studies

Reported quantitative findings on perceptual learning style preferences and language learning strategies were based on self-reported survey. Besides, since the result indicated a negative significant linear relationship between perceptual learning style preferences and language learning strategies, yet this result implied a poor relationship between styles and strategies whereas most studies have reported a positive correlation between learning styles and language strategies (Alireza & Abdullah, 2010; Baghban & Zohoorian, 2012; Uhrig, 2015). Based on the current findings, a few suggestions are proposed for future research. Based on these limitations, it is recommended to consider the following aspects of studies in future research:

(i) Extend studies on language learning styles and strategies to include more institutions of higher learning and in various contexts.

(ii) Conduct more studies related to strategies that are closely link to language skills.

(iii) Carry out more studies to investigate the influence of styles on strategies. It is further recommended to employ a combination of mixed methods design to obtain a more comprehensive description on the relationship between styles and strategies.

(iv) Studies ought to use a different qualitative method to obtain data on styles or strategies. For example, studies might include other qualitative methods like think aloud, diary writing and classroom observation besides interview and self-reported. In addition, qualitative approaches might be more appropriate to further determine the influence of sociocultural factors on language learning styles and strategies.

(v) Future studies should emphasise more on the sociocultural aspects of learners (parents' socioeconomic, peer influences, learners' cultural differences etc.) besides the individual learner characteristic (gender, motivation, language proficiency etc.) as language learning includes the immediate contexts of learners based on sociocultural perspective.

(vi) New studies ought to explore factors that influence the learners' styles and strategies quantitatively and qualitatively.

## 5.6 Conclusion

This chapter has summarised that individual learning style is the dominant style preferred by undergraduates, followed by visual and auditory learning styles. These learners were also found to prefer mostly metacognitive strategies and least employed affective strategies. This study also indicated that there is a certain degree of relationship between learners' perceptual learning styles and language learning strategies. From the qualitative data, learners' language proficiency, past learning experiences and personality were among the prominent factors that might affect the learners' perceptual learning style preferences. Language proficiency, gender, language learning environments, parents' socioeconomic status and motivation were perceived to influence these learners' language learning strategies. In others words, this study revealed that language learning styles and strategies could be influenced by psychological and sociocultural perspectives. Findings of current study have provided implications to the aspects of theoretical, methodological and pedagogical. Suggestions further improve this study were also proposed.

## REFERENCES


Abante, M. E. R., Almendral, B. C., Manansala, J. E., & Mañibo, J. (2014). Learning styles and factors affecting the learning of general engineering students. *International Journal of Academic Research in Progressive Education and Development, 3*(1), 16-27. doi:10.6007/IJARPED/v3-i1/500

Abbasian, R., Khajavi, Y., & Mardani, A. (2012). Language learning strategies of Iranian EFL learners: Are gender and educational level important. *Academic Research International, 3*(2), 350-356.

Abidin, M. J. Z., Rezaee, A. A., Abdullah, H. N., & Singh, K. K. B. (2011). Learning styles and overall academic achievement in a specific educational system. *International Journal of Humanities and Social Science, 1*(10), 143-152.

Ab Manan, N. A., Alias, A. A., Yusof, J., & Pandian, A. (2011). The effects of language learning strategy (LLS) training on ESL college students' strategies used. *Gading Business and Management Journal, 15*, 25-40.

Afifi, A., Clark, V. A., & May, S. (2004). *Computer-aided multivariate analysis* (4th ed.). Boca Raton: Chapman & Hall/CRC.

Afshar, H. S., Sohrabi, S., & Mohammadi, R. M. (2015). On the relationship among Iranian ESP learners' learning strategy use, learning styles and their English language achievement. *Procedia-Social and Behavioral Sciences, 192*, 724-729. doi:10.1016/j.sbspro.2014.05.324

Afshar, S. H., Tofighi, S., & Hamazavi, R. (2016). Iranian EFL learners' emotional intelligence, learning styles, strategy use, and their L2 achievement. *Issues in Educational Research, 26*(4), 635-652.

Ahmetoglu, G., & Chamorro-Premuzic, T. (2013). *Personality 101*. New York: Springer.

Ahn, C., Heo, M., & Zhang, S. (2015). *Sample size calculations for clustered and longitudinal outcomes in clinical research*. Boca Raton: Chapman & Hall/CRC Press.

Akbarzadeh, M., & Fatemipour, H. (2014). Examining the match or mismatch between teaching style preferences and upper-intermediate EFL learners' learning style preferences. *Procedia-Social and Behavioral Sciences, 98*, 137-142. doi:10.1016/j.sbspro.2014.03.399

Akram, M., & Ghani, M. (2013). The relationship of socioeconomic status with language learning motivation. *International Journal of English and Education, 2*(2), 406-413.

Al-Azawei, A., Al-Bermani, A., & Lundqvist, K. (2016). Evaluating the effect of Arabic engineering students' learning styles in blended programming courses. *Journal of Information Technology Education: Research, 15*, 109-130.

Albright, S. C., & Winston, W. L. (2017). *Business analytics: Data analysis and decision making* (6th ed.). Australia: Cengage Learning.

Alhaisoni, E. (2012). *Language learning strategy use of Saudi EFL students in an intensive English learning context. Asian Social Sciences, 8*(13), 115-127. doi:10.5539/ass.v8n13p115

Al Hamdani, D. (2015). Exploring students' learning style at a Gulf University: a contributing factor to effective instruction. *Procedia-Social and Behavioral Sciences*, *176*, 124-128. doi:10.1016/j.sbspro.2015.01.452

Alhaysony, M. (2017). Language learning strategies use by Saudi EFL students: The effect of duration of English language study and gender. *Theory and Practice in Language Studies, 7*(1), 18-28. doi:10.17507/tpls.0701.03

Al-Hebaishi, S. M. (2012). Investigating the relationships between learning styles, strategies and the academic performance of Saudi English majors. *International Interdisciplinary Journal of Education, 1*(8), 510-520.

Aliakbari, M., & Hayatzadeh, A. (2008). Variation of language strategies among Iranian English students: The effect of gender. *International Journal of Pedagogies and Learning, 4*(3), 72-87.

Aliakbari, M., & Tazik, K. (2011). On the relationship between gender and perceptual language learning styles: the case of Iranian academic EFL learners. *Educational Psychology, 31*(6), 657-674. doi:10.1080/01443410.2011.592275

Alias, A. A., Ab Manan, N. A., Yusof, J., & Pandian, A. (2012). The use of Facebook as language learning strategy (LLS) training tool on college students' LLS use and academic writing performance. *Procedia-Social and Behavioral Sciences, 67*, 36-48. doi:10.1016/j.sbspro.2012.11.305

Alireza, S., & Abdullah, M. H. (2010). Language learning strategies and styles among Iranian engineering and political science graduate students studying abroad. *Educational Research and Reviews, 5*(2), 35-45.

Alkubaidi, M. A. (2014). The relationship between Saudi English major university students' writing performance and their learning style and strategy use. *English Language Teaching, 7*(4), 83-95. doi:10.5539/elt.v7n4p83

Al-Shaboul, Y. M., Asassfeh, S. M., & Alshboul, S. S. (2010). Strategy use by English-major Jordanian undergraduates. *The Australian Educational and Developmental Psychologist, 27*(1), 31-40. doi:10.1375/aedp.27.1.31

Al-Tamimi, A., & Shuib, M. (2009). Investigating the learning styles preferences of ESL learners: The case of English majors in Universiti Sains Malaysia. *Malaysian Journal of ELT Research, 5*, 56-107.

Altman, D. G. (1991). *Practical statistics for medical research*. Boca Raton: Chapman & Hall/CRC.

Altunay, D. (2014). Language learning strategies used by distance learners of English: A study with a group of Turkish distance learners of EFL. *Turkish Online Journal of Distance Education, 15*(3), 291-305. (EJ1043665)

Amran, N., Bahry, F. D. S., Yusop, Z. M., & Abdullah, S. (2010). Learning styles of non-science and non-technology students on technical courses in an information management program. *Education for Information, 28*(2–4), 325-339. doi:10.3233/EFI-2010-0915

Anderson, D. R., Sweeney, D. J., & Williams, T. A. (2008). *Statistics for business and economics* (10th ed.). Australia: Thomson South-Western.

Anderson, D. R., Sweeney, D. J., Williams, T. A., Freeman, J., & Shoesmith, E. (2007). *Statistics for business and economics*. Australia: Thomson.

Anderson, N. J., & Vandergrift, L. (1996). Increasing metacognitive awareness in the L2 language classroom by using think-aloud protocols and other verbal report formats. In R. L. Oxford (Ed.), *Language learning strategies around the world: Cross-cultural perspectives* (pp. 3-18). University of Hawai´i: Second Language Teaching & Curriculum Centre.

Andrew, K. (2009). Visual influences on auditory spatial learning. *Philosophical Transactions of the Royal Society B, 364*, 331-339. doi:10.1098/rstb.2008.0230

Asadipiran, N. (2016). Identifying young learners' learning styles among Iranian EFL learners. *Theory and Practice in Language Studies, 6*(7), 1444-1450. doi:10.17507/tpls.0607.16

Asgari, A., & Mustapha, G. (2011). The influence of informal language learning environment (parents and home environment) on the vocabulary learning strategies. *English Language and Literature Studies, 1(*1), 7-13.

Awad, G. (2014). Motivation, persistence, and crosscultural awareness: A study of college students learning foreign languages. *Academy of Educational Leadership Journal, 18*(4), 97-116.

Azman, H. (2016). Implementation and challenges of English language education reform in Malaysian primary schools. *3L: Language, Linguistics, Literature®*, *22*(3), 65-78. doi: http://doi.org/10.17576/3L-2016-2203-05

Babacan, E. (2015). The analysis of learning modality of music teacher candidates. *International Journal on New Trends in Education and Their Implications, 6*(3), 194-205.

Babikkoi, M. A., & Razak, N. Z. A. (2014). Implications of parents' socio-economic status in the choice of English language learning strategies among Nigeria's secondary school students. *English Language Teaching, 7*(8), 139-147. doi:10.5539/elt.v7n8p139

Baghban, V., & Zohoorian, Z. (2012). The relationship between Iranian English language learners' learning styles and strategies. *Journal of Language Teaching and Research, 3*(4), 771-777. doi:10.4304/jltr.3.4.771-777

Balasubramaniam, G., & Indhu, K. (2016). A study of learning style preferences among first year undergraduate medical students using VARK model. *Education in Medicine Journal, 8*(4), 15-21. doi:10.5959/eimj.v8i4.440

Baleghizadeh, S., & Shayeghi, R. (2014). The relationship between perceptual learning style preferences and multiple intelligences among Iranian EFL learners. *Innovations in Education and Teaching International, 51*(3), 255-264. doi:10.1080/14703297.2013.785250

Banerjee, M., Capozzoli, M., McSweeney, L., & Sinha, D. (1999). Beyond kappa: A review of interrater agreement measures. *The Canadian Journal of Statistics, 27*(1), 3-23. doi:10.2307/3315487

Barmeyer, C. I. (2004). Learning styles and their impact on cross-cultural training: An international comparision in France, Germany and Quebec. *International Journal of Intercultural Relations, 28*, 577-594. doi:10.1016/j.ijintrel.2005.01.011

Barzegar, F., & Tazalli, G. (2013). Relationship between learning styles of advanced Iranian EFL learners and their achievement. *Journal of Studies in Learning and Teaching English, 1*(4), 1-21.

Bedell, D., & Oxford, R. L. (1996). Cross-cultural comparisons of language learning strategies in the People's Republic of China and other countries. In R. L. Oxford (Ed.), *Language learning strategies around the world: Cross-cultural perspectives* (pp. 35-45). Honolulu: University of Hawai´i, Second Language Teaching & Curiculum Center.

Bentley, Y., & Warwick, S. (2013, April). *Students' experience and perceptions of group assignments*. Paper presented at the STEM Annual Conference, The Higher Education Academy. Retrieved from https://www.heacademy.ac.uk/sites/default/files/gen_176_0.pdf

Beri, G. C. (2010). *Business statistics* (3rd ed.). New Delhi: Tata McGraw Hill Education.

Bernard, H. R. (2006). *Research methods in anthropology: Qualitative and quantitative approaches* (4th ed.). Lanham: AltaMira Press.

Bidabadi, F. S., & Yamat, H. (2010). Learning style preferences by Iranian EFL freshman university students. *Procedia-Social and Behavioral Sciences, 7*, 219-226. doi:10.1016/j.sbspro.2010.10.031

Blessing, L. T. M., & Chakrabarti, A. (2009). *DRM, a design research methodology*. London: Springer-Verlag.

Bonyadi, A., Nikou, F. R., & Shahbaz, S. (2012). The relationship between EFL learners' self-efficacy beliefs and their language learning strategy use. *English Language Teaching, 5*(8), 113-121. doi:10.5539/elt.v5n8p113

Börjesson, P. O., Hamidian, A., Kubilinskas, E., Richter, U., Weyns, K., & Ödling, P. (2006). Free-riding in Group Work-Mechanisms and Countermeasures. *4: e pedagogiska inspirationskonferensen*. Retrieved from https://www.lth.se/fileadmin/lth/genombrottet/konferens2006/p_o_b_rjesson_mfl.pdf

Boström, L., & Lassen, L. M. (2006). Unraveling learning, learning styles, learning strategies and meta-cognition. *Education + Training, 48*(2/3), 178-189. doi:10.1108/00400910610651809

Božinović, N., & Sindik, J. (2011). Gender differences in the use of learning strategies in adult foreign language learners. *Metodički obzori, 6*(11), 5-20.

Brannen, J. (2008). The practice of a mixed methods research strategy: Personal, professional and project considerations. In M. M. Bergman (Ed.), *Advances in mixed methods research* (pp. 53-65). London: SAGE Publications.

Brown, D. H. (1994). *Principles of language learning and teaching* (3rd ed.). Englewood Cliff, New Jersey: Prentice Hall Regents.

Brown, J. D. (2001). *Using surveys in language program*. New York: Cambridge University Press.

Brown, S. (2016, May 22). Measure of shape: Skewness and kurtosis. Retrieved from http://brownmath.com/stat/shape.htm#SkewnessInterpret

Bulmer, M. G. (1979). *Principles of statistics*. New York: Dover Publications.

Burdett, J. (2003). Making groups work: University students' perceptions. *International Education Journal*, *4*(3), 177-191. Retrieved from http://ehlt.flinders.edu.au/education/iej/articles/v4n3/Burdett/paper.pdf

Cargan, L. (2007). *Doing social research*. Lanham, Maryland: Rowman & Littlefield.

Carletta, J. (1996). Assessing agreement on classification tasks: The kappa statistic. *Computational linguistics, 22*(2), 249-254.

Carson, J. G., & Longhini, A. (2002). Focusing on learning styles and strategies: A diary study in an immersion setting. *Language Learning, 52*(2), 401-438. doi: 10.1111/0023-8333.00188

Cassidy, S. (2004). Learning styles: An overview of theories, models and measures. *Educational Pyschology: An International Journal of Experimental Educational Psychology, 24*(4), 419-444. doi:10.1080/0144341042000228834

Chamot, A. U. (2004). Issues in language learning strategy research and teaching. *Electronic Journal of Foreign Language Teaching, 1*(1), 14-26. Retrieved from https://pdfs.semanticscholar.org/3ce0/76a90d4985351fba7ba40c16b8b677f402d0.pdf

Chamot, A. U., & El-Dinary, P. B. (1999). Children learning strategies in language emersion classrooms. *The Modern Language Journal, 83*(3), 319-338. doi:10.1111/0026-7902.00025

Chamot, A. U., & O' Malley, J. M. (1987). The cognitive academic language learning approach: A bridge to the mainstream. *TESOL quarterly, 21*(2), 227-249.

Chamot, A. U., & O'Malley, J. M. (1994). *The CALLA handbook: Implementing the cognitive academic language learning approach.* Reading, MA: Addison Wesley.

Chang, C. H., & Liu, H. J. (2013). Language learning strategy use and language learning motivation of Taiwanese EFL University students. *Electronic Journal of Foreign Language Teaching, 10*(2), 196-209.

Chang, C. Y., Liu, S. C., & Lee, Y. N. (2007). A study of language learning strategies used by college EFL learners in Taiwan. *Language Learning, 3*, 235-262.

Chapman, A. D. (2005). *Principles of data quality*. Copenhagen: Global Biodiversity Information Facility.

Charlesworth, Z. M. (2008). Learning styles across cultures: Suggestions for educators. *Education + Training, 50*(2), 115-127. doi:10.1108/00400910810862100

Chawsheen, T. A. H., & Latif, I. S. (2006). Detection and treatment of outliers in data sets. *Iraqi Journal of Statistical Science, 9*, 58-74.

Chen, K. T., Lee, I. Y. N., & Lin, C. Y. (2010). EFL Learners' uses of listening comprehension strategies and learning style preferences. *The International Journal of Learning, 17*(6), 245-256.

Chen, M. L. (2009). Influence of grade level on perceptual learning style preferences and language learning strategies of Taiwanese English as a foreign language learners. *Learning and Individual Differences, 19*, 304-308. doi:10.1016/j.lindif.2009.02.004

Chen, M. L., & Hung, L. M. (2012). Personality type, perceptual style preferences and strategies for learning English as a foreign language. *Social Behavior and Personality, 40*(9), 1501-1510. doi:10.2224/sbp.2012.40.9.1501

Chow, S-C. (2014). *Biosimilars: Design and analysis of follow-on biologics*. Boca Raton: Chapman & Hall/CRC Press.

Chow, S-C., & Liu, J-P. (2004). *Design and analysis of clinical trials: Concepts and methodologies* (2nd ed.). New Jersey: John Wiley & Sons.

Chu, S. (2013, December). Effects of perceptual learning styles and learning strategies on college students' spoken English proficiency. *2013 International Conference on the Modern Development of Humanities and Social Science, Hong Kong* (pp.173-178). doi:10.2991/mdhss-13.2013.45

Chu, Y. W., Huang, B. S., Shih, M. P., & Tsai, C. H. (2012). A look at EFL technical students' use of learning strategies in Taiwan. *World Journal of Education, 2*(3), 16-24. doi:10.5430/wje.v2n3p16

Chua, Y. P. (2006). *Kaedah dan statistic penyelidikan: Asas statistic penyelidikan - Buku 2*. Kuala Lumpur: McGraw-Hill Education.

Cohen, A. D. (1998). *Strategies in learning and using a second language*. London: Longman.

Cohen, A. D. (2003). The learner's side of foreign language learning: Where do styles, strategies and tasks meet? *International Review of Applied Linguistics in Language Teaching, 41*(4), 279-291. doi:10.1515/iral.2003.013

Cohen J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20*, 37-46. doi:10.1177/001316446002000104

Creswell, J. W. (2005). *Educational research: Planning, conducting and evaluating quantitative and qualitative research* (2nd ed.). Upper Saddle River, New Jersey: Pearson Education.

Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, California: SAGE Publications.

Creswell, J. W. (2012). *Educational research: Planning, conducting and evaluating quantitative and qualitative research* (4th ed.). Boston: Pearson Education.

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Los Angeles: SAGE Publications.

Dalgaard, P. (2008). *Introductory statistics with R* (2nd ed.). New York: Springer.

Dattalo, P. (2008). *Determining sample size: Balancing power, precision, and practicality*. Oxford: Oxford University Press.

Dawson, R. (2011). How significant is a boxplot outlier. *Journal of Statistics Education, 19*(2), 1-12.

DeCapua, A., & Wintergrest, A. C. (2005). Assessing and validating a learning styles instrument. *System, 33*, 1-16. doi:10.1016/j.system.2004.10.003

Demirkan, H., & Demirbas, O. O. (2010). The effects of learning styles and gender on the academic performance of interior architecture students. *Procedia Social and Behavioral Sciences, 2*, 1390-1394. doi:10.1016/j.sbspro.2010.03.205

Demirkasımoğlu, N. (2016). Knowledge hiding in academia: Is personality a key factor? *International Journal of Higher Education, 5*(1), 128-140.

Deneme, S. (2008). Language learning strategy preferences of Turkish students. *Journal of Language and Linguistic Studies, 4*(2), 83-93.

Denzin, N. K., & Lincoln, Y. S. (2011). Introduction: The discipline and practice of qualitative research. In N. K. Denzin, & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (4th ed.). (pp. 1-20). Thousand Oaks, California: Sage Publications, Inc.

Devore, J. L., & Berk, K. N. (2007). *Modern mathematical statistics with applications*. Australia: Thomson Brooks/Cole.

Diamantopoulos, A., & Schlegelmilch, B. B. (2000). *Taking the fear out of data analysis: A step-by-step approach*. Australia: Thomson.

Ding, N., & Lin, W. (2012). Exploring the differences of undergraduate students' perceptual learning styles in international business study. *Journal of Teaching in International Business, 23*(4), 310-324. doi:10.1080/08975930.2012.779915

Doane, D. P., & Seward, L. E. (2011). Measuring skewness: A forgotten statistic? *Journal of Statistics Education, 19*(2), 1-18.

Drame, E. R., & Xu, Y. (2008). Examining sociocultural factors in response to intervention models. *Childhood Education, 85*(1), 26-32. doi:10.1080/00094056.2008.10523053

Ehrman, M. E. (1996). *Understanding second language learning difficulties*. Thousand Oaks, California: SAGE Publications.

Ehrman, M., Leaver, B., & Oxford, R. L. (2003). A brief overview of individual differences in second language learning. *System, 31*(3), 313-330. doi:10.1016/S0346-251X(03)00045-9

Ehrman, M., & Oxford, R. (1989). Effects of sex differences, career choice, and psychological type on adult language learning strategies. *Modern Language Journal, 73*(1), 1-13. doi:10.1111/j.1540-4781.1989.tb05302.x

Ehrman, M., & Oxford, R. (1990). Adult language learning styles and strategies in an intensive training setting. *The Modern Language Journal, 74*(3), 311-327. doi:10.1111/j.1540-4781.1990.tb01069.x

El-Dib, M. A. B. (2004). Language learning strategies in Kuwait: Links to gender, language level and culture in a hybrid context. *Foreign Language Annals, 37*, 85-95.

Eldridge, S., & Kerry, S. (2012). *A practical guide to cluster randomised trials in health services research*. West Sussex, UK: John Wiley & Sons.

El-Hmoudova, D., & Milkova, E. (2015). Variations and frequencies in learning styles in a group of Czech English as foreign language learners. *Procedia-Social and Behavioral Sciences, 182*, 60-66. doi:10.1016/j.sbspro.2015.04.738

Ellison, S. L. R., Barwick, V. J., & Farrant, T. J. D. (2009). *Practical statistics for the analytical scientist: A bench guide* (2nd ed.). Cambridge, UK: RSC Publishing.

Ely, C. M. (1989). Tolerance of ambiguity and use of second language learning strategies. *Foreign Language Annuals, 22*, 437-445. doi:10.1111/j.1944-9720.1989.tb02766.x

Embi, M. A., Long, J., & Hamzah, M. I. (2001). Language learning strategies employed by secondary school students in Malaysia. *Jurnal Pendidikan, 26*, 3-20.

Erton, I. (2010). Relations between personality traits, language learning styles and success in foreign language achievement. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 38*(38), 115-126.

Fahim, M., & Noormohammadi, R. (2014). The learner's side of foreign language learning: Predicting language learning strategies from language learning styles among Iranian medical students. *Journal of Language Teaching and Research, 5*(6), 1424-1434. doi:10.4304/jltr.5.6.1424-1434

Felder, R. M., & Henriques, E. R. (1995). Learning and teaching styles in foreign and second language education. *Foreign Language Annals, 28*(1), 21-31. doi:10.1111/j.1944-9720.1995.tb00767.x

Feleciya, A. J. N., & Meenakshi, K. (2016). English language learning strategies used by female ESL learners of Vellore district: An empirical study. *Indian Journal of Science and Technology*, *9*(39), 1-5. doi: 10.17485/ijst/2016/v9i39/98843

Ferguson, R. E., & Brophy, M. T. (2017). Pilot studies. In K. M. F. Itani & D. J. Reda (Eds.). *Clinical trials design in operative and non operative invasive procedures* (pp. 235-244). Switzerland: Springer. doi: 10.1007/978-3-319-53877-8

Fewell, N. (2010). Language learning strategies and English language proficiency: An investigation of Japanese EFL university students. *TESOL Journal, 2*(1), 159-174.

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). London: SAGE Publications.

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). Los Angeles: SAGE Publications.

Fischer, B. B., & Fischer, L. (1979). Styles in teaching and learning. *Educational Leadership, 36*(4), 245-254.

Fonseca-Mora, M. C. (2005). Individual characteristics of secondary school students. In A. Madrid, D. McLaren & N. Bueno Gonzalez (Eds.). *TEFL in Secondary Education* (pp.79-110). Granada: Editiorial Universidad de Granada.

Foreman, E. K. (1991). *Survey sampling principles*. New York: Marcel Dekker.

Frankfort-Nachmias, C., & Leon-Guerrero, A. (2006). *Social statistics for a diverse society* (4th ed.). Thousand Oaks, California: Pine Forge Press.

Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences, 111*(23), 8410-8415.

Gao, P-X. (2016). An analysis of the impact of language learning styles on learning strategy preferences. *Sino-US English Teaching, 13*(7), 542-551. doi:10.17265/1539-8072/2016.07.006

Gao, X. (2006). Strategies used by Chinese parents to support English language learning: Voices of 'elite' university students. *RELC, 37*(3), 285-298. doi:10.1177/0033688206071302

Gardner, R. C., & MacIntyre, P. D. (1993). A student's contributions to second-language learning. Part II: Affective variables. *Language Teaching, 26*(1), 1-11. doi:10.1017/S0261444800000045.

Gavriilidou, Z., & Mitits, L. (2013). Adaptation of the Strategy Inventory for Language Learning (SILL) for students aged 12-15 into Greek: A pilot study. In *21st International Symposium of Theoretical and Applied Linguistics, School of English, Aristotle University of Thessaloniki,* 588-601.

George, D., & Mallery, P. (2005). *SPSS for Windows step by step: A simple guide and reference 12.0 update* (5th ed.). Boston: Allyn and Bacon, Pearson.

Gerami, M. H., & Baighlou, S. M. G. (2011). Language learning strategies used by successful and unsuccessful Iranian EFL students. *Procedia-Social and Behavioral Sciences, 29*, 1567-1576. doi:10.1016/j.sbspro.2011.11.399

Ghadirzadeh, R., Hashtroudi, F. P., & Shokri, O. (2013). Study of the effective factors on the university students' underachievement in English language learning. *English Language Teaching, 6*(11), 122-129. doi:10.5539/elt.v6n11p122

Gharbavi, A., & Mousavi, S. A. (2012). Do language proficiency levels correspond to language learning strategy adoption?. *English Language Teaching, 5*(7), 110-122. doi:10.5539/elt.v5n7p110

Ghyasi, M., Yazdani, M., & Farsani, M. A. (2013). The relationship between personality types and self-regulated earning strategies of language learners. *International Journal of Applied Linguistics and English Literature, 2*(4), 74-82. doi:10.7575/aiac.ijalel.v.2n.4p.74

Gibson, W. J., & Brown, A. (2009). *Working with qualitative data*. London: SAGE Publications.

Gilakjani, A. P. (2012). Visual, auditory, kinaesthetic learning styles and their impacts on English language teaching. *Journal of Studies in Education, 2*(1), 104-113. doi:10.5296/jse.v2i1.1007

Gilgun, J. F., & Abrams, L. S. (2012). The nature and usefulness of qualitative social work research: Some thoughts and an invitation to dialogue. *Qualitative Social Work, 1*(1), 39-55. doi: *10.1177/1473325002001001743*

Goh, C. (1997). Metacognitive awareness and second language listeners. *ELT Journal, 51*(4), 361-369.

Goh, C., & Kwah, P.F. (1997). Chinese ESL students' learning strategies: A look at frequency, proficiency and gender. *Hong Kong Journal of Applied Linguistics, 2*, 39-53.

Gohar, M. J., & Sadeghi, N. (2015). The impact of learning style preferencs on foreign language achievement: A case study of Iranian EFL students. *Procedia-Social and Behavioral Sciences, 171*, 754-764. doi:10.1016/j.sbspro.2015.01.188

Gonzalez, V. (2001). The role of socioeconomic and sociocultural factors in language minority children's development: An ecological research view. *Bilingual Research Journal, 25*(1-2), 1-30. doi:10.1080/15235882.2001.10162782

GoodData Corporation. (2015, June 16). Normality testing – Skewness and kurtosis. Retrieved from https://help.gooddata.com/display/doc/Normality+Testing+-+Skewness+and+Kurtosis

Gravetter, F. J., & Wallnau, L. B. (2007). *Statistics for the behavioral sciences* (7th ed.). Belmont, USA: Thomson Wadsworth.

Gray, D. E. (2009). *Doing research in the real world* (2nd ed.). London: SAGE Publications.

Greasley, P. (2008). *Quantitative data analysis using SPSS: An introduction for health & social science*. Berkshire, England: Open University Press.

Green, J. (2005). Qualitative interviewing. In J. Green, & J. Browne (Eds.), *Principles of social research* (pp. 53-62). Berkshire, England: Open University Press.

Green, J. M., & Oxford, R. (1995). A closer look at learning strategies, L2 proficiency and gender. *TESOL Quarterly, 29*(2), 261-269. doi:10.2307/3587625

Greene, J. C. (2007). *Mixed methods in social inquiry*. San Francisco: Jossey-Bass.

Gregoire, T. G., & Valentine, H. T. (2008). *Sampling strategies for natural resources and the environment*. Boca Raton: Chapman & Hall/CRC.

Grenfell, M. (2007). Language learner strategy research and modern foreign language teaching and learning. *The Language Learning Journal, 35*(1), 9-22. doi:10.1080/09571730701315576

Grenfell, M., & Erler, L. (2007). Language learner strategies. *Language Learning Journal, 35*(1), 5-7. doi:10.1080/09571730701315535

Grenfell, M., & Macaro, E. (2011). Claims and critiques. In A. D. Cohen & E. Macaro (Eds.), *Language learner strategies* (pp. 10-28). Oxford: Oxford University Press.

Griffiths, C. (2003). Patterns of language learning strategy use. *System, 31*, 367-383. doi:10.1016/S0346-251X(03)00048-4

Griffiths, C. (2007). Language learning strategies: Students' and teacher's perceptions. *ELT Journal, 61*(2), 91-99. doi:10.1093/elt/ccm001

Griffiths, C. (2013). *The strategy factor in successful language learning*. Bristol: Multilingual Matters.

Griffiths, C., & Oxford, R. L. (2014). The twenty-first century landscape of language learning strategies: Introduction to this special issue. *System, 43*, 1-10. doi:10.1016/j.system.2013.12.009

Griffiths, C., & Parr, J. M. (2001). Language-learning strategies: theory and perception. *ELT Journal, 55*(3), 247-254. doi:10.1093/elt/55.3.247

Gu, Y. (2002). Gender, academic major and vocabulary learning strategies of Chinese EFL learners. *RELC Journal, 33*(1), 35-54. doi:10.1177/003368820203300102

Gürses, M. Ö., & Bouvet, E. (2016). Investigating reading comprehension and learning styles in relation to reading strategies in L2. *Reading in a Foreign Language, 28*(1), 20-42.

Gwet, K. L. (2010). *Handbook of inter-rater reliability: The definite guide to measuring the extent of agreement among multiple raters* (2nd ed.). Gaithersburg, MD: Advanced Analytics, LLC.

Hakan, K., Aydin, B., & Bulent, A. (2015). An investigation of undergraduates' language learning strategies. *Procedia-Social and Behavioral Sciences, 197*, 1348-1354. doi:10.1016/j.sbspro.2015.07.388

Haldin-Herrgard, T. (2000). Difficulties in diffusion of tacit knowledge in organizations. *Journal of Intellectual Capital, 1*(4), 357-365. doi:10.1108/14691930010359252

Hallgren, K. A. (2012). Computing inter-rater reliability for observational data: An overview and tutorial. *Tutorials in Quantitative Methods for Psychology, 8*(1), 23-34.

Hardan, A. A. (2013). Language learning strategies: A general overview. *Procedia Social and Behavioral Sciences, 106*, 1712-1726.

Hashemi, M. (2011). Strategies of Iranian EFL learners. *International Journal of Academic Research, 3*(2), 280-285.

Hashim, R. A., & Sahil, S. A. (1994). Examining learners' language learning strategies. *RELC Journal, 25*(2), 1-20. doi:10.1177/003368829402500201

Hatami, S. (2012). Learning styles. *ELT Journal, 67*(4), 488-490. doi:10.1093/elt/ccs083

Hawkins, D. M. (1980). *Identification of outliers*. London: Chapman & Hall.

Hayes, A. F., & Krippendorff, K. (2007). Answering the call for a standard reliability measure for coding data. *Communication Methods and Measures, 1*(1), 77-89. doi:10.1080/19312450709336664

Hedge, T. (2000). *Teaching and learning in the language classroom*. Oxford: Oxford University Press.

Herrmann, K. J. (2013). The impact of cooperative learning on student engagement: Results from an intervention. *Active learning in higher education, 14*(3), 175-187. doi:10.1177/1469787413498035

Hibberts, M., Johnson, R. B., & Hudson, K. (2012). Common survey sampling techniques. In L. Gideon (Ed.). *Handbook of Survey Methodology for the Social Sciences* (pp. 53-74). New York: Springer.

Hickcox, L. K. (1995). Learning styles: A survey of adult learning style inventory models. In R. R. Sims & S. J. Sims (Eds.), *The importance of learning style: Understanding the implications for learning, course design, and education* (pp. 25-48). Westport: Greenwood Publishing Group.

Hiew, W. (2012). English language teaching and learning issues in Malaysia: Learners' perceptions via facebook dialogue journal. *Journal of Arts, Science and Commerce, 3*(1), 11-19.

Hillyard, C., Gillespie, D., & Littig, P. (2010). University students' attitudes about learning in small groups after frequent participation. *Active Learning in Higher Education, 11*(1), 9-20. doi:10.1177/1469787409355867

Hinton, P. R. (1995). *Statistics explained: A guide for social science students*. New York: Routledge.

Ho, A. P., & Ng, L. L. (2016). Gender-based differences in language learning strategies among undergraduates in a Malaysian public university. *Issues in Language Studies, 5*(2), 1-17.

Ho, I-p. (1999). Relationships between motivation/attitude, effort and English proficiency and Taiwan Technological University students' English learning strategy use. *Journal of National Taipei University of Technology, 32*(1), 611-674.

Hoaglin, D. C., Iglewicz, B., & Tukey, J. W. (1986). Performance of some resistant rules for outlier labeling. *Journal of the American Statistical Association, 81*(396), 991-999. doi:*10.1080/01621459.1986.10478363*

Hoff, E., & Tian, C. (2005). Socioeconomic status and cultural influences on language. *Journal of communication Disorders, 38*(4), 271-278. doi:10.1016/j.jcomdis.2005.02.003

Holliday, T. L., & Said, S. H. (2008). Psychophysiological measures of learning comfort: Study groups' learning styles and pulse changes. *Learning Assistance Review, 13*(1), 7-16. (EJ818223)

Hong-Nam, K., & Leavell, A. G. (2006). Language learning strategy use of ESL students in an intensive English learning context. *System, 34*, 399-415. doi:10.1016/j.system.2006.02.002

Hong-Nam, K., & Leavell, A. G. (2007). A comparative study of language learning strategy use in an EFL context: Monolingual Korean and bilingual Korean-Chinese university students. *Asia Pacific Education Review, 8*(1), 71-88.

Honigsfeld, A., & Dunn, R. (2003). High school male and female learning-style similarities and differences in diverse nations. *Journal of Educational Research, 96*(4), 195-206. doi:10.1080/00220670309598809

Howell, D. C. (2010). *Statistical methods for psychology* (7th ed.). Belmont, USA: Thomson Wadsworth.

Hubert, M., & Vandervieren, E. (2008). An adjusted boxplot for skewed distributions. *Computational statistics & data analysis, 52*(12), 5186-5201. doi:10.1016/j.csda.2007.11.008

Hunter, J. E., & Schmidt, F. L. (2004). *Methods of meta-analysis: Correcting error and bias in research findings* (2nd ed.). Thousand Oaks, California: SAGE Publications.

Hyland, K. (1993). Culture and learning: A study of the learning style preferences of Japanese students. *RELC Journal, 24*(2), 69-87. doi:10.1177/003368829302400204

Isemonger, I., & Sheppard, C. (2003). Learning styles. *RELC, 34*(2), 195-222. doi:10.1177/003368820303400205

Ismail, S. A. A., & Khatib, A. A. A. (2013). Investigating the language learning strategies of students in the foundation program of United Arab Emirates University. *International Education Studies, 6*(9), 135-149. doi:10.5539/ies.v6n9p135

Jain, T. R., & Aggarwal, S. C. (2008). *Quantitative techniques (For B.B.A. 1st year)*. New Delhi: V.K. (India) Enterprises.

Jain, T.R., Gupta, A., & Gupta, S. P. (2006). *Quantitative methods*. New Delhi: V.K. Publications.

Jaques, D. (2000). *Learning in groups: A handbook for improving group work* (3rd ed.). London: Psychology Press.

Jie, L., & Xiaoqing (2006). Language learning styles and learning strategies of tertiary-level English learners in China. *RELC Journal, 37*(1), 67-90. doi:10.1177/0033688206063475

Johanson, G. A., & Brooks, G. P. (2010). Initial scale development: Sample size for pilot studies. *Educational and Psychological Measurement, 70*(3), 394-400. doi:10.1177/0013164409355692

Johnson, D. W., Johnson, R. T., & Smith, K. A. (2014). Cooperative learning: Improving university instruction by basing practice on validated theory. *Journal on Excellence in College Teaching, 25*(3&4), 85-118.

Kamalizad, J., & Samuel, M. (2015). Cross context role of language proficiency in learners' use of language learning strategies. *Malaysian Online Journal of Educational Sciences, 3*(1), 1-13. (EJ1086204)

Kamińska, P. M. (2014). *Learning styles and second language education.* Newcastle, UK: Cambridge Scholars Publishing.

Kameli, S., Mostapha, G. B., & Baki, R. B. (2012). The influence of formal language learning environment on vocabulary learning strategies. *Journal of Language Teaching & Research, 3*(1), 23-29. doi:10.4304/jltr.3.1.23-29

Karabuga, F. (2015). Match or mismatch between learning styles of prep-class EFL students and EFL teachers. *Electronic Journal of Foreign Language Teaching, 12*(2), 276-288.

Karlak, M., & Velki, T. (2015). Motivation and learning strategies as predictors of foreign language communicative competence. *Hrvatski časopis za odgoj i obrazovanje, 17*(3), 635-658. doi:10.15516/cje.v17i3.1759

Karthigeyan, K., & Nirmala, K. (2013). Learning style preference of English language learners. *Educational Confab, 2*(1), 134-140. Retrieved from http://www.confabjournals.com/confabjournals/images/622013824214.pdf

Kashefian-Naeeini, S., & Maarof, N. (2010). Language learning strategies used by ESL university students. *International Journal of Learning, 17*(8), 47-61.

Kaur, M., & Embi, M. A. (2011). Language learning strategies employed by primary school students. *European Journal of Educational Studies, 3*(3), 473-479.

Kavasoglu, M. (2009). Learning strategy use of pre-service teachers of English language at Mersin University. *Procedia Social and Behavioral Sciences, 1*, 93-997.

Kayaoğlu, M. N. (2012). Gender-based differences in language learning strategies of science students. *Journal of Turkish Science Education, 9*(2), 12-24.

Keefe, J. W. (1979). Learning style: An overview. In National Association of Secondary School Principals (Ed.), *Student learning styles: Diagnosing and prescribing programs* (pp. 1-18). Reston, Virginia: National Association of Secondary School Principals.

Kelley, K., Clark, B., Brown, V., & Sitzia, J. (2003). Good practice in the conduct and reporting of survey research. *International Journal for Quality in Health Care, 15*(3), 261-266. doi:10.1093/intqhc/mzg031

Khamkhien, A. (2010). Factors affecting language learning strategy reported usage by Thai and Vietnamese EFL learners. *Electronic Journal of Foreign Language Teaching, 7*(1), 66-85.

Khamkhien, A. (2012). Demystifying Thai EFL learners' perceptual learning style preferences. *3L; Language, Linguistics and Literature, The Southeast Asian Journal of English Language Studies, 18*(1), 61-74.

Khandari, A., Setiyadi, A. B., & Nurweni, A. (2015). Identifying learning strategies between successful and unsuccessful learners in reading comprehension. *Unila Journal of English Teaching, 4*(6), 1-11.

Khezrlou, S. (2012). The relationship between cognitive and metacognitive strategies, age, and level of education. *The Reading Matrix, 12*(1), 50-61.

Kim, H-Y. (2013). Statistical notes for clinical researchers: Assessing normal distribution (2) using skewness and kurtosis. *Restorative Dentistry & Endodontics, 38*(1), 52-54. doi:10.5395/rde.2013.38.1.52

Kim, T. Y., & Kim, Y. K. (2014). A structural model for perceptual learning styles, the ideal L2 self, motivated behavior, and English proficiency. *System, 46*, 14-27. doi:10.1016/j.system.2014.07.007

Kiram, J.J., Sulaiman, J., Swanto, S., & Din, W.A. (2014, June). The relationship between English language learning strategies and gender among pre-university students: An overview of UMS. In W. Zawiah Wan Zin, S. C. Dzul-Kifli, F. A. Razak & A. Ishak (Eds.), *AIP Conference Proceedings* (Vol. 1602, No. 1, pp. 502-507). AIP Publishing. doi:10.1063/1.4882532

Kirkpatrick, L. A., & Feeney, B. C. (2006). *A simple guide to SPSS® for Windows® for version 12.0 & 13.0*. Australia: Thomson Wadsworth.

Ko, Y. S. (2011). Factors influencing Chinese language learners' strategy use. *International Journal of Multilingualism, 8*(2), 117-134. doi: 10.1080/14790718.2010.532555

Korkki, P. (2014, October 18). When those who know won't share. *The New York Times*, p. BU4. Retrieved from http://www.nytimes.com/2014/10/19/business/when-those-who-know-wont-share.html?_r=0

Kowal, S., & O'Connell, D. C. (2004). The transcription of conversations. In U. Flick, E. V. Kardorff & I. Steinke (Eds.), *A companion to qualitative research* (pp. 248-252). London: SAGE Publications.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*, 607-610. doi:10.1177/001316447003000308

Kumar, R. (2011). *Research methodology: A step-by-step guide for beginners* (3rd ed.). London: SAGE Publications.

Kunasaraphan, K. (2015). English learning strategy and proficiency level of the first year students. *Procedia-Social and Behavioral Sciences, 197*, 1853-1858. doi:10.1016/j.sbspro.2015.07.246

La, L., & Ye, Y. (2014). A comparative study of ethnic students' learning styles in learning Burmese language and their achievement in selected schools in Pyin Oo Lwin, Mandalay Region, Myanmar. *Scholar, 6*(2), 13-18.

Lai, Y. C. (2009). Language learning strategy use and English proficiency of university freshmen in Taiwan. *TESOL Quarterly, 43*(2), 255-280.

La Lopa, J. M. (2013). The difference between bigfoot and learning styles: There may be better evidence to support the existence of bigfoot. *Journal of Culinary Science & Technology, 11*(4), 356-376. doi:10.1080/15428052.2013.817861

Lan, R., & Oxford, R. (2003). Language learning strategy profiles of elementary school students in Taiwan. *IRAL, International Review of Applied Linguistics in Language Teaching, 41*(4), 339-379. doi:10.1515/iral.2003.016

Lan, R. L. (2005). *Language learning strategies profiles of EFL elementary school students in Taiwan* (Doctoral dissertation). Retrieved from http://drum.lib.umd.edu/handle/1903/2480

Landau, S., & Everitt, B. S. (2004). *A handbook of statistical analyses using SPSS*. Boca Raton: Chapman & Hall/CRC Press LLC.

Landis J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33*, 159-174. doi:10.2307/2529310

Larson-Hall, J. (2010). *A guide to doing statistics in second language research using SPSS*. New York: Routledge.

Lavasani, M. G., & Faryadres, F. (2011). Language learning strategies and suggested model in adults processes of learning second language. *Procedia Social and Behavioral Sciences, 15*, 191-197. doi:10.1016/j.sbspro.2011.03.072

LeBlanc, D. C. (2004). *Statistics: Concepts and applications for science*. Sudbury, Massachusetts: Jones and Bartlett Publishers.

Lemeshow, S., Hosmer, D. W., Klar, J., & Lwanga, S. K. (1990). *Adequacy of sample size in health science*. Chichester: John Wiley & Sons.

Lessard-Clouston, M. (1997). Language learning strategies: An overview for L2 teachers. *The Internet TESL Journal, 3*(12), 69-80.

Levine, A., Reves, T., & Leaver, B. L. (1996). Relationship between language learning strategies and Israeli versus Russian cultural-educational factor. In R. L. Oxford (Ed.), *Language learning strategies around the world: Cross-cultural perspectives* (pp. 35-45). Honolulu: University of Hawai´i, Second Language Teaching & Curiculum Center.

Li, C. (2012). An investigation of Chinese students' learning styles at an English-medium university in mainland China. *Theory and Practice in Language Studies, 2*(1), 6-13. doi:10.4304/tpls.2.1.6-13

Li, H., & He, Q. (2016). Ambiguity tolerance and perceptual learning styles of Chinese EFL learners. *English Language Teaching, 9*(6), 213-222. doi:10.5539/elt.v9n6p213

Li, J., & Qin, X. (2006). Language learning styles and learning strategies of tertiary-level English learners in China. *RELC, 37*(1), 67-90. doi:10.1177/0033688206063475

Lin, H. P., & Shen, S. S. (1996). *Perceptual learning style preferences for EFL students in junior colleges in Taiwan*. Retrieved from ERIC database. (ED400680)

Lin, S. S. P., & Samuel, M. (2013). Students' roles during peer response sessions. *Malaysian Online Journal of Educational Sciences, 1*(1), 55-63.

Lincoln, F., & Rademacher, B. (2006). Learning styles of ESL students in community colleges. *Community College Journal of Research and Practice, 30*(5-6), 485-500. doi:10.1080/10668920500207965

Littlemore, J. (2001). An empirical study of the relationship between cognitive style and the use of communication strategy. *Applied Linguistics, 22*(2), 241-265. doi: 10.1093/applin/22.2.241

Littlewood, W. T. (1984). *Foreign and second language learning: Language-acquisition research and its implications for the classrooms.* Great Britain: Cambridge University Press.

Liu, H. J. (2015). Use of learning strategies by EFL learners: A study of how it relates to language proficiency and learner autonomy. *International Journal of English Linguistics, 5*(2), 21-35. doi:10.5539/ijel.v5n2p21

Liu, J. (2010). Language learning strategies and its training model. *International Education Studies, 3*(3), 100-104.

Liu, R., Qiao, X., & Liu, Y. (2006). A paradigm shift of learner-centered teaching style: Reality or illusion. *Arizona Working papers in SLAT, 13*, 77-91.

Liu, X. S. (2014). *Statistical power analysis for the social and behavioral sciences: Basic and advanced techniques*. New York: Routledge.

Livingston, J. A. (2003). *Metacognition: An overview*. Retrieved from ERIC database. (ED474273)

Liyanage, I., & Bartlett, B. J. (2012). Gender and language learning strategies: Looking beyond the categories. *The Language Learning Journal, 40*(2), 237-253. doi:10.1080/09571736.2011.574818

Lohr, S. L. (2010). *Sampling: Design and analysis* (2nd ed.). Australia: Brooks/Cole, Cengage Learning.

Lwanga, S. K., & Lemeshow, S. (1991). *Sample size determination in health studies*: *A practical manual*. Geneva: World Health Organization.

Ma, R., & Oxford, R. L. (2014). A diary study focusing on listening and speaking: The evolving interaction of learning styles and learning strategies in a motivated, advanced ESL learner. *System, 43*, 101-113. doi:10.1016/j.system.2013.12.010

Macaro, E. (2006). Strategies for language learning and for language use: Revising the theoretical framework. *The Modern Language Journal, 90*(3), 320-337. doi:10.1111/j.1540-4781.2006.00425.x

Macaro, E. (2007). Language learner strategies: Adhering to a theoretical framework. *The Language Learning Journal, 35*(2), 239-243. doi:10.1080/09571730701599245

Madhumathi, P., Ramani, N., & Prema, M. (2014). Language learning strategy use and English proficiency of below average Indian ESL students. *Pertanika Journal of Social Sciences and Humanities, 22*(2), 455-472.

Maesin, A., Mansor, M., Shafie, L. A., & Nayan, S. (2009). A study of collaborative learning among Malaysian undergraduates. *Asian Social Science, 5*(7), 70-76. doi:10.5539/ass.v5n7p70

Magni, M., Paolino, C., Cappetta, R., & Proserpio, L. (2013). Diving too deep: How cognitive absorption and group learning behavior affect individual learning. *Academy of Management Learning & Education, 12*(1), 51-69. doi:10.5465/amle.2011.0096

Magno, C. (2010). Korean students 'language learning strategies and years of studying English as predictors of proficiency in English. *TESOL Journal, 2*, 39-61.

Magno, C., de Carvalho Filho, M. K., & Lajom, J. A. L. (2011). Factors involved in the use of language learning strategies and oral proficiency among Taiwanese students in Taiwan and in the Philippines. *Asia-Pacific Education Researcher, 20*(3), 489-502.

Magogwe, J. M., & Oliver, R. (2007). The relationship between language learning strategies, proficiency, age and self-efficacy beliefs: A study of language learners in Botswana. *System, 35*, 338-352. doi:10.1016/j.system.2007.01.003

Mariani, L. (1996). Investigating learning styles. *Perspectives, 21*(2), 35-49. Retrieved from http://www.learningpaths.org/papers/paperstyles.htm

Martin, P., & Bateson, P. (1993). *Measuring behaviour: An introductory guide* (2nd ed.). Cambridge, UK: Cambridge University Press.

Matthews, G., Deary, I. J., & Whiteman, M. C. (2009). *Personality traits* (3rd ed.). Cambridge, UK: Cambridge University Press.

Mathews, P. (2010). *Sample size calculations: Practical methods for engineers and scientists*. Fairport Harbor, OH: Mathews Malnar and Bailey.

McDonough, S. H. (1999). Learner strategies. *Language Teaching, 32*(1), 1-18. doi:10.1017/S0261444800013574

McHugh, M. L. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica, 22*(3), 276-282. doi:10.11613/BM.2012.031

McIntyre, P.D., & Noels, K.A. (1996). Using social-psychological variables to predict the use of language learning strategies. *Foreign Language Annals, 29*(3), 373-378. doi:10.1111/j.1944-9720.1996.tb01249.x

McLoughlin, C. (1999). The implications of the research literature on learning styles for the design of instructional material. *Australian Journal of Educational Technology, 15*(3), 222-241. doi:10.14742/ajet.1859

McMullen, M. G. (2009). Using language learning strategies to improve the writing skills of Saudi EFL students: Will it really work? *System, 37*, 418-433. doi:10.1016/j.system.2009.05.001

Mehrpour, S., & Motlagh, F. A. (2015). Investigating the effect of motivation and attitude towards learning English, learning style preferences and gender on Iranian EFL learners' proficiency. *Research Papers in Language Teaching and Learning, 6*(1), 144-160.

Meshkat, M., & Saeb, F. (2013). The relationship between high school students' beliefs about language learning and their use of language learning strategies. *Issues in Language Teaching, 1*(2), 273-292.

Minick, N., Stone, C. A., & Forman, E. A. (1996). Introduction: Integration of individual, social and institutional processes in accounts of children's learning and development. In E. A. Forman, N. Minick & C.A. Stone (Eds.), *Contexts for learning: Sociocultural dynamics in children's development* (pp. 3-16). Oxford: Oxford University Press.

Mitchell, R., & Myles, F. (2004). *Second language learning theories* (2nd ed.). Great Britain: Hodder Arnold.

Mitchell, R., Myles, F., & Marsden, E. (2013). *Second language learning theories* (3rd ed.). London: Routledge.

Moayyeri, H. (2015). The impact of undergraduate students' learning preferences (VARK Model) on their language achievement. *Journal of Language Teaching and Research, 6*(1), 132-139. doi:10.17507/jltr.0601.16

Mochizuki, A. (1999). Language learning strategies used by Japanese students. *RELC Journal, 30*(2), 101-113. doi:10.1177/003368829903000206

Moenikia, M., & Zahed-Babelan, A. (2010). The role of learning styles in second language learning among distance education students. *Procedia Social and Behavioral Sciences, 2*(2), 1169-1173. doi:10.1016/j.sbspro.2010.03.167

Moghaddam, F. M., Walker, B. R., & Harré, R. (2003). Cultural distance, levels of abstraction, and the advantages of mixed methods. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social & behavioral research* (pp. 111-134). Thousand Oaks, California: SAGE Publications.

Mohamad, M. M., & Rajuddin, M. R. (2010, June). *Perceptual learning styles of pre-service teachers in engineering education*. Paper presented at The 3rd Regional Conference on Engineering Education and Research in Higher Education, Kuching, Sarawak. Retrieved from http://tree.utm.my/wp-content/uploads/2013/03/PERCEPTUAL-LEARNING-STYLES-OF-PRE-SERVICE-TEACHERS-in-engineering-education.pdf

Mohammadi, E. G., Reza, B., Koosha, M., & Shahsavari, A. (2013). The relationship between foreign language anxiety and language learning strategies among university students. *Theory and Practice in Language Studies, 3*(4), 637-646. doi:10.4304/tpls.3.4.637-646

Mohammadi, H., & Alizadeh, K. (2014). An investigation of reliability and validity of strategy inventory for language learning among Iranian university students. *International Journal of English Language Teaching*, *1*(2), 53-63. doi:10.5430/ijelt.v1n2p53

Monette, D. R., Sullivan, T. J., & DeJong, C. R. (2011). *Applied social research: A tool for the human services* (8th ed.). Australia: Brooks/Cole, Cengage Learning.

Moore, D. S. (2004). *The basic practice of statistics* (3rd ed.). New York: W. H. Freeman and Company.

Moradkhan, D., & Mirtaheri, S. (2011). The relationship between Iranian EFL learners' perceptual learning styles and their teachers' teaching styles. *Journal oF English Studies, 1*, 41-52.

Morgan, G. A., & Griego, O. V. (1998). *Easy use and interpretation of SPSS for Windows: Answering research questions with statistics*. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Morgan, G. A., Griego, O. V., & Gloeckner, G. W. (2001). *SPSS for Windows: An introduction to use and interpretation in research*. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Mruk, C. J. (2006). *Self-esteem research, theory, and practice: Toward a positive psychology of self-esteem* (3rd ed.). New York: Springer.

Msuya, E. A. (2016). Language learning strategies by efl secondary school learners in Tanzania: an exploratory account. *BELT-Brazilian English Language Teaching Journal, 7*(1), 94-108. doi:10.15448/2178-3640.2016.1.23414

Mulalic, A., Shah, P. M., & Ahmad, F. (2009). Learning-style preference of ESL students. *AJTLHE: ASEAN Journal of Teaching and learning in Higher Education, 1*(2), 9-17. Retrieved from http://journalarticle.ukm.my/1485/1/ALMASA_1.pdf

Muniandy, J., & Shuib, M. (2016). Learning styles, language learning strategies and fields of study among ESL learners. *Malaysian Journal of ELT Research, 12*(1), 1-19.

Mustaffa, R. (2007). Mengadaptasikan gaya pembelajaran pelajar ESL: Satu kajian kes pelajar tahun satu di UKM. *GEMA: Online Journal of Language Studies, 7*(1), 1-32. Retrieved from http://journalarticle.ukm.my/2258/1/Vol.7_Issue1.pdf

Nam, C., & Oxford, R. L. (1998). Portrait of a future teacher: Case study of learning styles, strategies, and language disabilities. *System, 26*, 51-63. doi:10.1016/S0346-251X(97)00070-5

Nambiar, R. (1998). *Learning strategies: A Malaysian perspective*. Bangi, Selangor Darul Ehsan, Malaysia: Faculty of Language Studies, Universiti Kebangsaan Malaysia.

Naserieh, F., & Sarab, M. R. A. (2013). Perceptual learning style preferences among Iranian graduate students. *System*, *41*(1), 122-133. doi:10.1016/j.system.2013.01.018

National Survey of Student Engagement. (2015). *Engagement insights: Survey findings on the quality of undergraduate education*. Retrieved from http://nsse.indiana.edu/NSSE_2015_Results/pdf/NSSE_2015_Annual_Results.pdf

Navaz, A. M. M. (2013). A study on perception of lecturer-student interaction in English medium science lectures. *Novitas-ROYAL (Research on Youth and Language), 7*(2), 117-136.

Nazri, N. M., Yunus, M. M., & Nazri, N. D. M. (2016). Through the lens of good language learners: What are their strategies? *Advances in Language and Literary Studies, 7*(1), 195-202. doi:10.7575/aiac.alls.v.7n.1p.195

Neo, P. S. L. (2015). Language learning strategies: A study among Spanish students in the University of Malaya. *Journal of Modern Languages, 17*(1), 93-108.

Nguyen, N., & Godwyll, F. (2010). Factors influencing language-learning strategy use of English learners in an ESL Context. *Mid-Western Educational Researcher, 23*(4), 7-13.

Nirmala, V., & Silvia, E. J. (2011). *Research methodology in nursing*. NewDelhi: Jaypee Brothers Medical Publishers (P) Ltd.

Nisbet, D. L, Tindall, E. R., & Arroyo, A. A. (2005). Language learning strategies and English proficiency of Chinese university students. *Foreign Language Annals, 38*(1)*,* 100-107. doi:10.1111/j.1944-9720.2005.tb02457.x

Normazidah Che Musa, Koo, Y. L., & Hazita Azman. (2012). Exploring English language learning and teaching in Malaysia. *GEMA Online™ Journal of Language Studies, 12*(1), 35-51.

Norris, G., Qureshi, F., Howitt, D., & Cramer, D. (2012). *Introduction to statistics with SPSS for social science*. London: Routledge.

Northrop, A. (1999). Sampling and data collection. In G. J. Miller & M. L. Whicker (Eds.), *Handbook of research methods in public administration* (pp. 99-124). New York: Marcel Dekker.

Norušis, M. J. (2006). *SPSS 15.0 statistical procedures companion*. Upper Saddle River, NJ: Prentice Hall.

Nosratinia, M., & Soleimannejad, A. (2016). Perceptual learning styles and critical thinking: Inspecting the association among EFL learners. *Theory and Practice in Language Studies, 6*(6), 1220-1228. doi:10.17507/tpls.0606.11

Nunan, D. (1999). *Second language teaching and learning*. New York: Heinle & Heinle Publishers.

Nurul Amilin Razawi, Mazni Muslim, Sulia Masturina Che Razali, Norhayati Husin, & Nor Zaitolakma Abdul Samad. (2011). Students' diverse learning styles in learning English as a second language. *International Journal of Business and Social Science, 2*(9), 179-186.

Obralić, N., & Akbarov, A. (2012). Students preference on perceptual learning style. *Acta Didactica Napocensia, 5*(3), 31-42. Retrieved from ERIC database. (EJ1054303)

Ok, L. K. (2003). The relationship of school year, sex and proficiency on the use of learning strategies in learning English of Korean junior high school students. *Asian EFL Journal, 5*(3), 1-36.

Olivares-Cuhat, G. (2011). Learner factors in a high-poverty urban middle school. *Penn GSE Perspectives on Urban Education, 9*(1), 1-11. Retrieved from ERIC database. (EJ957122)

O'Malley, J.M., & Chamot, A.U. (1990). *Learning strategies in second language acquisition*. Cambridge: Cambridge University Press.

Ong, W. A., Rajendram, S., & Yusof, M. (2006). Learning style preferences and English proficiency among Cohort 3 students in IPBA. In Kementerian Pelajaran Malaysia & Institut Perguruan Bahasa-bahasa Antarabangsa (Eds.), *Proceedings Educational Research Seminar For Students IPBA 2006*. Kuala Lumpur: Institut Perguruan Bahasa-bahasa Antarabangsa.

Onwuegbuzie, A. J., & Mallette, M. H. (2011). Chapter 14 Mixed techniques in literacy research. In N. K. Duke & M. H. Mallete (Eds.), *Literacy research methodologies* (2nd ed.). (pp. 301-330). New York: The Guilford Press.

Osborne, J. W., & Overbay, A. (2004). The power of outliers (and why researchers should always check for them). *Practical Assessment, Research & Evaluation, 9*(6), 1-12.

Ott, R. L., & Longnecker, M. (2010). *An introduction to statistical methods and data analysis* (6th ed.). Australia: Brooks/Cole, Cengage Learning.

Oxford, R. (1989a). *The role of styles and strategies in second language learning*. Retrieved from ERIC database. (ED317087)

Oxford, R. (1989b). The use of language learning strategies: A synthesis of studies with implications for strategy training. *System, 17*(2), 235-47. doi:10.1016/0346-251X(89)90036-5

Oxford, R. L. (1990a). *Language learning strategies: What every teacher should know*. Boston: Heinle & Heinle Publishers.

Oxford, R. L. (1990b). Styles, strategies, and aptitude: Connections for language learning. In T.S. Parry & C.W. Stansfield (Eds.), *Language Aptitude Reconsidered* (pp. 67-125). Englewood Cliffs, NJ: Prentice Hall.

Oxford, R. L. (1996a). Employing a questionnaire to assess the use of language learning strategies. *Applied Language Learning, 7*(1), 28-47. Retrieved from ERIC database. (EJ539336)

Oxford, R. L. (1996b). Preface. In R. L. Oxford (Ed.), *Language learning strategies around the world: Cross-cultural perspectives, Issue 13* (pp. ix-xii). University of Hawai´i, Mānoa: Second Language Teaching & Curriculum Centre.

Oxford, R.L. (1999). Relationships between second language learning strategies and language proficiency in the context of learner autonomy and self-regulation. *Revista Canaria de Estudios Ingleses, 38*, 109-126.

Oxford, R. L. (2002). Language learning strategies in a nutshell: Update and ESL suggestion. In J. C. Richards & W. A. Renandya (Eds.), *Methodology in language teaching: An anthology of current practice* (pp. 124-132). Cambridge: Cambridge University Press.

Oxford, R. L. (2003). Language learning styles and strategies: Concepts and relationships. *IRAL, International Review of Applied Linguistics in Language Teaching, 41*(4), 271-278. doi:10.1515/iral.2003.012

Oxford, R. L., & Burry-Stock, J. A. (1995). Assessing the use of language learning strategies worldwide with the ESL/EFL version of the Strategy Inventory for Language Learning (SILL). *System, 23*(1), 1-23. doi:10.1016/0346-251X(94)00047-A

Oxford, R. L., & Ehrman, M. E. (1995). Adults' language learning strategies in an intensive foreign language program in the United States. *System, 23*(3), 359-386. doi:10.1016/0346-251X(95)00023-D

Oxford, R. L., Ehrman, M. E., & Lavine, R. Z. (1991). Style wars: Teacher-student style conflicts in the language classroom. In S. S. Magman (Ed.), *Challenges in the 1990s for college foreign language programs* (pp. 1-25). Boston: Heinle & Heinle.

Oxford, R. L., & Nyikos, M. (1989). Variables affecting choice of language learning strategies by university students. *The Modern Language Journal, 73*(3), 291-300.

Oxford, R. L., & Schramm, K. (2007). Bridging the gap between psychological and sociocultural perspectives on L2 learner strategies. In A. D. Cohen & E. Macaro (Eds.), *Language learner strategies: 30 years of research and practice* (pp. 47-68). Oxford: Oxford University Press.

Park, G. P. (1997a). Language learning strategies and English proficiency in Korean university students. *Foreign Language Annals*, *30*(2), 211-221. doi:10.1111/j.1944-9720.1997.tb02343.x

Park, C. C. (1997b). Learning style preferences of Korean, Mexican, Armenian-American, and Anglo students in secondary schools. *National Association of Secondary School Principals, NASSP Bulletin, 81*(585), 103-110. doi:10.1177/019263659708158517

Park, C. C. (2000). Learning style preferences of Southeast Asian students. *Urban Education, 35*(3), 245-268. doi:10.1177/0042085900353002

Park, C. C. (2001). Learning style preferences of Armenian, African, Hispanic, Hmong, Korean, Mexican and Anglo students in American secondary schools. *Learning Environments Research, 4*, 175-191. doi:10.1023/A:1012463316737

Park, C. C. (2002). Crosscultural differences in learning styles of secondary English learners. *Bilingual Research Journal, 26*(2), 443-459. doi:10.1080/15235882.2002.10668720

Patil, M. S., & Karekatti, T. (2012). A study of language learning strategies used by engineering students. *English for Specific Purposes World*, *12*(35), 1-19. Retrieved from http://www.esp-world.info/articles_35/sunanda_esp_world.pdf

Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd.). Thousand Oaks, California: SAGE Publications.

Paulraj, S. J. P. V., Ali, A. R., & Vetrayan, J. (2013). Learning style preferences among diploma students of occupational therapy in University Technology MARA (UiTM). *Middle-East Journal of Scientific Research, 14*(5), 603-609. doi:10.5829/idosi.mejsr.2013.14.5.72137

Pavkov, T. W., & Pierce, K. A. (2003). *Ready, set, go! A student guide to SPSS® 11.0 for Windows®*. Boston: McGraw-Hill.

Pawlak, M. (2013). Another look at the effect of gender on the use of language learning strategies: The case of advanced Polish learners of English. In K. Piatkowska & E. Koscialkowska-Okonska (Eds.), *Correspondences and contrasts in foreign language pedagogy and Translation studies* (pp. 44-58). Switzerland: Springer International Publishing Switzerland.

Peacock, M. (2001). Match or mismatch? Learning styles and teaching styles in EFL. *International Journal of Applied Linguistics, 11*(1), 1-20. doi:10.1111/1473-4192.00001

Peacock, M., & Ho, B. (2003). Student language learning strategies across eight disciplines. *International Journal of Applied Linguistics*, *13,* 179-200. doi:10.1111/1473-4192.00043

Peck, R., Olsen, C., & Devore, J. L. (2012). *Introduction to statistics and data analysis* (4th ed.). Australia: Brooks/Cole.

Pengiran-Jadid, P. P. (2003). Learning-style perceptual preferences of Bruneian students. *Academic Exchange Quarterly, 17*(2), 199-204.

Phonhan, P. (2016). Language learning strategies of EFL education students: A case study of Thai undergraduate students. *Silpakorn University Journal of Social Sciences, Humanities, and Arts, 16*(2), 115-136.

Pirker, C. (2009). *Statistical noise or valuable information: The role of extreme cases in marketing research*. Wiesbaden: Springer Science & Business Media.

Platsidou, M., & Sipitanou, A. (2015). Exploring relationships with grade level, gender and language proficiency in the foreigh language learning strategy use of children and early adolescents. *International Journal of Research Studies in Language Learning, 4*(1), 83-96. doi:10.5861/ijrsll.2014.778

Price, G. E., Dunn, J. R., & Sanders, W. (1980). Reading achievement and learning style characteristics. *The Clearing House, 54*(5), 223-226. doi:10.1080/00098655.1981.9957163

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education, 93*(3), 223-231. doi:10.1002/j.2168-9830.2004.tb00809.x

Pritchard, A. (2009). *Ways of learning: Learning theories and learning styles in the classroom* (2nd ed.). Abingdon, Oxon: Routledge.

Psaltou-Joycey, A., & Kantaridou, Z. (2009). Plurilingualism, language learning strategy use and learning style preferences. *International Journal of Multilingualism, 6*(4), 460-474. doi:10.1080/14790710903254620

Punch, K. F. (2005). *Introduction to social research: Quantitative and qualitative approaches* (2nd ed.). London: Sage Publications Ltd.

Puri, B. K. (1996). *Statistics in practice: An illustrated guide to SPSS*. London: Arnold.

Purpura, J. E. (1999). *Learner strategy use and performance on language tests: A structural equation modeling approach*. New York, NY: Cambridge University Press.

Radwan, A. A. (2014). Gender and Learning Style Preferences of EFL Learner. *Arab World English Journal, 5*(1), 21-32.

Rafique, R. (2016). Exploring language learning style preferences of the ELT graduate students. *Asian Journal of Humanity, Art and Literature, 3*(1), 27-40. doi:10.18034/ajhal.v3i1.784

Rahimi, M., Riazi, A., & Saif, S. (2008). An investigation into the factors affecting the use of language learning strategies by Persian EFL learners. *Canadian Journal of Applied Linguistics/Revue canadienne de linguistique appliquée, 11*(2), 31-60.

Rajamanickam, M. (2001). *Statistical methods in psychological and educational research*. New Delhi: Concept Publishing Company.

Ramlan, N. F. B. J. N., & Maarof, N. (2014). Multicultural education: The influence of cultural diversity on second language acquisition. *International Journal of English and Education, 3*(4), 284-294.

Rao, Z. (2006). Understanding chinese students' use of language learning strategies from cultural and educational perspectives. *Journal of Multilingual and Multicultural Development, 27*(6), 491-508. doi:10.2167/jmmd449.1

Rao, Z. (2012). Language learning strategies and English proficiency: Interpretations from information-processing theory. *The Language Learning Journal, 44*(1), 90-106. doi: 10.1080/09571736.2012.733886

Ras, F. (2013). Outstanding students' learning strategies in learning English at Riau University, Indonesia. *Asian Social Science, 9*(12), 20-29. doi:10.5539/ass.v9n12p20

Razak, N. Z. A., Ismail, F., Aziz, A. A., & Babikkoi, M. A. (2012). Assessing the use of English language learning strategies among secondary school students in Malaysia. *Procedia-Social and Behavioral Sciences, 66*, 240-246. doi:10.1016/j.sbspro.2012.11.266

Régner, I., & Loose, F. (2006). Relationship of sociocultural factors and academic self-esteem to school grades and school disengagement in North African French adolescents. *British Journal of Social Psychology, 45*(4), 777-797. doi:10.1348/014466605X83610

Reid, J. M. (1987). The learning style preferences of ESL students. *TESOL Quarterly, 27*(1), 87-111. doi:10.2307/3586356

Reid, J. M. (1995). *Learning styles in ESL/EFL classroom.* Boston: Heinle & Heinle.

Reid, J. M. (1998). *Understanding learning styles in the second language classroom*. Upper Saddle River, NJ: Prentice Hall Regents.

Rezaeinejad, M., Azizifar, A., & Gowhary, H. (2015). The study of learning styles and its relationship with educational achievement among Iranian high school students. *Procedia-Social and Behavioral Sciences, 199*, 218-224. doi:10.1016/j.sbspro.2015.07.509

Riazi, A., & Riasati, M. J. (2007). Language learning style preferences: A students case study of Shiraz EFL Institute. *Asian EFL Journal, 9*(1), 97-125.

Richards, J. C. (2002). 30 years of TEFL/TESL: A personal reflection. *RELC Journal, 33*(1), 1-35. doi:10.1177/003368820203300201

Richels, C. G., Johnson, K. N., Walden, T. A., & Conture, E. G. (2013). Socioeconomic status, parental education, vocabulary and language skills of children who stutter. *Journal of communication disorders, 46*(4), 361-374. doi:10.1016/j.jcomdis.2013.07.002

Ridenour, C. S., & Newman, I. (2008). *Mixed methods research: Exploring the interactive continuum*. United States of America: Southern Illinois University.

Rivera-Mills, S.V., & Plonsky, L. (2007). Empowering students with language learning strategies: A critical review of current issues. *Foreign Language Annals, 40*(3), 535-548. doi:10.1111/j.1944-9720.2007.tb02874.x

Rossi-Le, L. (1989). *Perceptual learning style preferences and their relationship to language learning strategies in adult students of English as a second language* (Doctoral dissertation, Drake University). Retrieved from http://escholarshare.drake.edu/bitstream/handle/2092/713/dd1989lrl.pdf?.

Rubin, A. (2010). *Statistics for evidence-based practice and evaluation* (2nd ed.). Australia: Brooks/Cole, Cengage Learning.

Rubin, A., & Babbie, E. R. (2008). *Research methods for social work* (7th ed.). Australia: Brooks/Cole, Cengage Learning.

Rubin, A., & Babbie, E. R. (2010). *Essential research methods for social work* (2nd ed.). Australia: Brooks/Cole, Cengage Learning.

Rumsey, D. J. (2005). *Statistics workbook for dummies*. Hoboken, NJ: Wiley Publishing.

Rumsey, D. J. (2011). *Statistics for dummies* (2nd ed.). Indianapolis, Indiana: Wiley Publishing.

Ryan, T. P. (2013). *Sample size determination and power*. Hoboken, New Jersey: John Wiley & Sons.

Sabeh, G., Bahous, R., Bacha, N. N., & Nabhani, M. (2011). A match or a mismatch between student and teacher learning style preferences. *International Journal of English Linguistics, 1*(1), 162-172.

Saeb, F., & Zamani, E. (2013). Language learning strategies and beliefs about language learning in high-school students and students attending English Institutes: Are they different? *English Language Teaching, 6*(12), 79-86. doi:10.5539/elt.v6n12p79

Šafranj, J. (2013). Strategies of learning English as a foreign language at Faculty of Technical Sciences. *Procedia-Social and Behavioral Sciences, 93*, 775-782. doi: 10.1016/j.sbspro.2013.09.278.

Salahshour, F., Sharifi, M., & Salahshour, N. (2013). The relationship between language learning strategy use, language proficiency level and learner gender. *Procedia-Social and Behavioral Sciences, 70*, 634-643. doi:10.1016/j.sbspro.2013.01.103

Salehi, E., Hedjazi, Y., & Mahmood, S. (2014). The effect of personality types on the learning styles of agricultural students: A case study in Iran. *The Online Journal of New Horizons in Education, 4*(2), 126-135.

Salim, H. A., Salim, B. S. H. A., Johan, B. J. P. B., & Mandiangin, J. (2013). Language learning strategy in English reading comprehension used by successful and unsuccessful learners at college. *International Review of Social Sciences and Humanities, 5*(2), 193-202.

Sarabi-Asiabar, A., Jafari, M., Sadeghifar, J., Tofighi, S., Zaboli, R., Peyman, H., ... Shams, L. (2015). The relationship between learning style preferences and gender, educational major and status in first year medical students: a survey study from Iran. *Iranian Red Crescent Medical Journal, 17*(1), 1-6. doi:10.5812/ircmj.18250

Savas, H., & Erol, A. Y. (2015). Distribution and comparison of language learning strategies used by language learners and their status as repeating and non-repeating at language levels. *Journal of Language and Literature Education, 14*, 1-22.

Scarcella, R. C., & Oxford, R. L. (1992). *The tapestry of language learning: The individual in the communicative classroom*. Boston: Heinle & Heinle.

Schensul, S. L., Schensul, J. J., & LeCompte, M. D. (1999). *Essential ethnographic methods: Observation, interviews, and questionnaires* (2nd ed.). Walnut Creek, CA: AltaMira Press.

Schlotzhauer, S. D. (2007). *Elementary statistics using JMP*. Cary, USA: SAS Institute.

Schmeck, R. R. (1988). Individual differences and learning strategies. In C. E., Weinstein, E. T. Goetz & P. A. Alexander (Eds.), *Learning and study strategies* (pp. 171-191). San Diego, California: Academic Press.

Schutt, R. K. (2006). *Investigating the social world: The process and practice of research* (5th ed.). Thousand Oaks, California: SAGE Publications.

Seidel, J. V. (1998). Qualitative data analysis. *The Ethnograph, 4*, 1-15. Retrieved from ftp://ftp.qualisresearch.com/pub/qda.pdf

Seifoori, Z., & Zarei M. (2011). The relationship between Iranian EFL learners' perceptual learning styles and their multiple intelligences. *Procedia-Social and Behavioral Sciences, 29*, 1606-1613. doi:10.1016/j.sbspro.2011.11.403

Shah, A., Ismail, M., & Ismail, Y. (2012). Exploring English language learning styles of Malay students at the International Islamic University Malaysia. *World Applied Sciences Journal, 20*(8), 1072-1081. doi: 10.5829/idosi.wasj.2012.20.08.3012

Sharma, J. K. (2007). *Business statistics* (2nd ed.). New Delhi: Dorling Kindersley (India) Pvt. Ltd., Pearson Education.

Sharma, R. K. (1997). *Sociological methods and techniques*. New Delhi: Atlantic Publishers & Distributors.

Shenoy, G. V., Srivastava, U. K., & Sharma, S. C. (2002). *Business statistics*. New Delhi: New Age International (P) Ltd.

Shi, C. (2011). A study of the relationship between cognitive styles and learning strategies. *Higher Education Studies*, *1*(1), 20-26. doi:10.5539/hes.v1n1p20

Shmais, W. A. (2003). Language learning strategy use in Palestine. *TESL-EJ, 7*(2). Retrieved from http://www.tesl-ej.org/wordpress/issues/volume7/ej26/ej26a3/

Shuib, M., & Azizan, S. N. (2015). Learning style preferences among male and female ESL students in Universiti-Sains Malaysia. *Journal Of Educators Online, 12*(2), 103-141.

Siddique, A., Abbas, A., Riaz, F., & Nazir, R. (2014). An investigation of perceptual learning style preferences of students on the basis of gender and academic achievements. *Pakistan Journal of Life & Social Sciences, 12*(1), 26-30.

Siegel, A. F. (2012). *Practical business statistics* (6th ed.). Amsterdam: Elsevier.

Sivanandan, P., Letchumanan, T., Ramayah, M, Nasrijal, N. H., & Lim, C. L. (2014). Learning style preferences: Influence of cultural background among business students. *International Journal of Arts and Commerce, 3*(5), 87-98.

Song, D., & Oh, E. (2011). Learning styles based on the different cultural background of KFL learners in online learning. *Multimedia-Assisted Language Learning, 14*(3), 133-154.

Soureshjani, K. H., & Naseri, N. (2012). Perceptual learning-style preferences of Iranian EFL learners in relation to their proficiency level. *American Journal of Linguistics, 1*(4), 70-74. doi:10.5923/j.linguistics.20120104.01

Spatz, C. (2011). *Basic statistics: Tales of Distributions* (10th ed.). Australia: Wadsworth.

Srijongjai, A. (2011). Learning styles of language learners in an EFL writing class. *Procedia-Social and Behavioral Sciences, 29,* 1555-1560. doi:10.1016/j.sbspro.2011.11.397

Stevens, J. P. (2002). *Applied multivariate statistics for the social sciences* (4th ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates.

Stevens, R. E., Wrenn, B., Sherwood, P. K., & Ruddick, M. E. (2006). *The marketing research guide* (2nd ed.). New York: Best Business Books.

Stewart, G., Seifert, T. A., & Rolheiser, C. (2015). Anxiety and self-efficacy's relationship with undergraduate students' perceptions of the use of metacognitive writing strategies. *The Canadian Journal for the Scholarship of Teaching and Learning, 6*(1), 4. doi:10.5206/cjsotl-rcacea.2015.1.4

Stickler, U., & Lewis, T. (2008). Collaborative language learning strategies in an email Tandem exchange. In S. Hurd & T. Lewis (Eds.), *Language learning strategies in independent settings* (pp. 237-261). Bristol, UK: Multilingual Matters.

Su, M. H. M. (2005). A study of EFL technological and vocational college students' language learning strategies and their self-perceived English proficiency. *Electronic Journal of Foreign Language Teaching, 2*(1), 44-56.

Subramaniam, B., & Palanisamy, K. (2014). The usage of language learning strategies in Malaysian private secondary schools. *Advances in Language and Literary Studies, 5*(4), 96-101. doi:10.7575/aiac.alls.v.5n.4p.96

Sun, L. (2013). The effect of meta-cognitive learning strategies on English learning. *Theory and Practice in Language Studies, 3*(11), 2004-2009. doi:10.4304/tpls.3.11.2004-2009

Sunderland, J. (2000). Issues of language and gender in second and foreign language education. *Language Teaching, 33*, 203-223. doi:10.1017/S0261444800015688

Suwanarak, K. (2012). English language learning beliefs, learning strategies and achievement of Masters students in Thailand. *TESOL in Context, S3*, 1-15.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson Education.

Tabanlioğlu, S. (2003). *The relationship between learning styles and language learning strategies of pre-intermediate EAP students.* (Master's thesis, Middle East Technical University). Retrieved from http://etd.lib.metu.edu.tr/upload/1014034/index.pdf?origin=publication_detail.

Tabatabaei, O., & Mashayekhi, S. (2013). The relationship between EFL learners' learning styles and their L2 achievement. *Procedia-Social and Behavioral Sciences, 70*, 245-253.

Tahriri, A., & Divsar, H. (2011). Male and female EFL learners' self-perceived strategy use across various educational levels: A case study. *English Language Teaching, 4*(4), 181-194. doi:10.5539/elt.v4n4p181

Tai, F.M. (2013). Adult EFL students' preferred learning styles and motivation. *The Journal of Human Resource and Adult Learning, 9*(2), 161-171.

Tam, K. C. H. (2013). A study on language learning strategies (LLSs) of university students in Hong Kong. *Taiwan Journal of Linguistics, 11*(2), 1-42.

Tan, K. C., & Kaur, S. (2015). Types of language learning strategies used by tertiary English majors. *TEFLIN Journal, 26*(1), 17-35. doi:10.15639/teflinjournal.v26i1/17-35

Tannen, D. (1991). *You just don't understand: Women and men in conversation*. London: Virago.

Tayie, S. (2005). *Research methods and writing research proposals*. Cairo: Center for Advancement of Postgraduate Studies and Research.

Teh, K. S. M., Embi, M. A., Yusoff, N. M. R. N., & Mahamod, Z. (2009). A closer look at gender and Arabic language learning strategies use. *European Journal of Social Sciences, 9*(3), 399-407.

Tezcan, S., & Deneme, S. (2016). A study on language learning strategy use of young Turkish learners. *Journal of Language Teaching and Research, 7*(1), 42-48. doi:10.17507/jltr.0701.05

Thabane, L., Ma, J., Chu, R., Cheng, J., Ismaila, A., Rios, L. P., … Goldsmith, C. H. (2010). A tutorial on pilot studies: The what, why and how. *BMC Medical Research Methodology, 10*(1). doi:10.1186/1471-2288-10-1

Thang, S.M. (2003). Investigating Malaysian distance learners' conceptions of their learning styles in learning English. *Gema Online Journal of Language Studies, 3*(1), 1-28.

Thirusanku, J., & Yunus, M. M. (2014). Status of English in Malaysia. *Asian Social Science, 10*(14), 254-260. doi:10.5539/ass.v10n14p254

Trendak, O. (2014). Strategy training and its application in the process of foreign language learning. In M. Pawlak, J. Bielak & A. Mystkowska-Wiertelak (Eds.), *Classroom-oriented Research* (pp. 69-84). Switzerland: Springer International Publishing. doi:10.1007/978-3-319-00188-3_5

Tsutsui, E., Ueda, N., & Nakano, M. (2005). A multi-dimensional approach to analyzing individual differences of Japanese language learners of English. In M. Nakano & K-J. Park (Eds.), *Proceedings of the 11th Conference of Pan-Pacific Association of Applied Linguistics* (Vol. 11, pp. 257-264). Tokyo: PAAL. Retrieved from http://paaljapan.org/resources/proceedings/PAAL10/pdfs/tsutsui.pdf

Tu, J. C., & Chiang, Y. H. (2016). The influence of design strategy of peer learning on 3-D Software Learning. *Eurasia Journal of Mathematics, Science & Technology Education, 12*(5), 1263-1271. doi:10.12973/eurasia.2016.1511a

Tuncer, U. (2009). How do monolingual and bilingual language learners differ in use of learning strategies while learning a foreign language? Evidences from Mersin University. *Procedia Social and Behavioral Sciences, 1*, 852-856. doi:10.1016/j.sbspro.2009.01.153

Uhrig, K. (2015). Learning styles and strategies for language use in the context of academic reading tasks. *System, 50*, 21-31. doi:10.1016/j.system.2015.02.002

Urdan, T. C. (2005). *Statistics in plain English* (2nd ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates.

Uztosun, M. S. (2014). The impact of language learning experience on language learner strategy use in Turkish EFL context. *International Journal on New Trends in Education & their Implications, 5*(1), 157-168.

Vaseghi, R., Barjesteh, H., & Shakib, S. (2013). Learning style preferences of Iranian EFL high school students. *International Journal of Applied Linguistics & English Literature, 2*(4), 83-89. doi:10.7575/aiac.ijalel.v.2n.4p.83

Vaseghi, R., Ramezani, A. E., & Gholami, R. (2012). Language learning style preferences: A theoretical and empirical study. *Advances in Asian Social Science, 2*(2), 441-451.

Vogt, W. P., Vogt, E. R., Gardner, D. C., & Haeffele, L. M. (2014). *Selecting the right analyses for your data: Quantitative, qualitative, and mixed methods*. New York: The Guilford Press.

Vose, D. (2008). *Risk analysis: A quantitative guide* (3rd ed.). England: John Wiley & Sons.

Walfish, S. (2006). A review of statistical outlier methods. *Pharmaceutical Technology, 30*(11), 82-86. Retrieved from http://statisticaloutsourcingservices.com/Outlier2.pdf

Wang, C. C., & Greenwood, K. M. (2015). Chinese nursing students' culture-related learning styles and behaviours: A discussion paper. *International Journal of Nursing Sciences, 2*(3), 253-258. doi:10.1016/j.ijnss.2015.07.009

Warner, R. M. (2013). *Applied statistics from bivariate through multivariate techniques* (2nd ed.). Los Angeles: SAGE Publications.

Warrens, M. J. (2013a). A comparison of Cohen's kappa and agreement coefficients by Corrado Gini. *International Journal of Research and Reviews in Applied Sciences, 16*(3), 345-351.

Warrens, M. J. (2013b). Cohen's weighted kappa with additive weights. *Advances in Data Analysis and Classification, 7*(1), 41-55. doi:10.1007/s11634-013-0123-9

Watkins, M. W., & Pacheco, M. (2001). Interobserver agreement in behavioral research: Importance and calculation. *Journal of Behavioral Education, 10*(4), 205-212. doi:10.1023/A:1012295615144

Webb, L. M., & Wang, Y. (2016). Techniques for sampling online text-based data set. In Information Resources Management Association (Ed.), *Big data: Concepts, methodologies, tools, and applications* (pp. 655-675). Hershey PA, USA: IGI Global.

Webb, N. M., Shavelson, R. J., & Haertel, E. H. (2007). Reliability coefficients and generalizability theory. In C. R. Roa & S. Sinharay (Eds.), *Handbook of statistics 26: Psychometrics* (pp. 81-124). Kidlington, Oxford: North-Holland.

Wegner, T. (2007). *Applied business statistics: Methods and Excel-based applications* (2nd ed.). Cape Town, South Africa: Juta & Co.

Welsh, E. (2002, May). Dealing with data: Using NVivo in the qualitative data analysis process. In *Forum: Qualitative Social Research*, *3*(2), Art. 26. Retrieved from http://www.qualitative-research.net/index.php/fqs/article/view/865/1881

Wenden, A. (1987). Conceptual background and utility. In A. Wenden & J. Rubin (Eds), *Learner strategies in language learning* (pp. 3-13). London: Prentice Hall.

Wenden, A., & Rubin, J. (1987). *Learner strategies in language learning.* Englewood Cliffs, NJ: Prentice Hall.

Weng, P. S. (2012). The effect of learning styles on learning strategy use by EFL learners. *Journal of Social Sciences, 8*(2), 230-234. doi**:**10.3844/jssp.2012.230.234

Westberg, J., & Jason, H. (1996). *Fostering learning in small groups: A practical guide*. New York: Springer.

Wharton, G. (2000). Language learning strategy use of bilingual foreign language learners in Singapore. *Language Learning, 50*(2), 203-204. doi:10.1111/0023-8333.00117

Whillier, S., Lystad, R. P., Abi-Arrage, D., McPhie, C., Johnston, S., Williams, C., & Rice, M. (2014). The learning style preferences of chiropractic students: A cross-sectional study. *Journal of Chiropractic Education, 28*(1), 21-27. doi:10.7899/JCE-13-25

Wike, E. L. (2009). *Data analysis: A statistical primer for psychology students*. New Brunswick, USA: AldineTransaction.

Willing, K. & Nunan, D. (1993). *Learning styles in adult migrant education*. Sydney: National Centre for English Language Teaching and Research, Macquarie University

Wolfe, P. (2010). *Brain matters: Translating research into classroom practice* (2nd ed.). Virginia, USA: ASCD.

Woottipong, K. (2014). Effect of using video materials in the teaching of listening skills for university students. *International Journal of Linguistics, 6*(4), 200-212. doi:10.5296/ijl.v6i4.5870

Wrenn, B., Stevens, R. E., & Loudon, D. L. (2007). *Marketing research: Text and cases* (2nd ed.). New York: Best Business Books.

Wu, S-H., & Alrabah, S. (2009). A cross-cultural study of Taiwanese and Kuwaiti EFL students' learning styles and multiple intelligences. *Innovations in Education and Teaching International, 46*(4), 393-403. doi:10.1080/14703290903301826

Xu, R., & Huang, L. (2010). The role of teachers in college English classroom: From the perspective of affect. *International Education Studies, 3*(3), 192-194.

Yang, M-N. (2007). Language learning strategies for junior college students in Taiwan: Investigating ethnicity and proficiency. *The Asian EFL Journal Quarterly, 9*(2), 35-57.

Yayla, A., Kozikoglu, I., & Celik, S. N. (2016). A comparative study of language learning strategies used by monolingual and bilingual learners. *European Scientific Journal, 12*(26), 1-20. doi:10.19044/esj.2016.v12n26p1

Yilmaz, C. (2010). *The relationship between language learning strategies, gender, proficiency and self-efficacy beliefs: A study of ELT learners in Turkey. Procedia Social and Behavioral Sciences, 2*, 682-687. doi:10.1016/j.sbspro.2010.03.084

Young, A., & Fry, J. (2008). Metacognitive awareness and academic achievement in college students. *Journal of the Scholarship of Teaching and Learning, 8*(2), 1-10. Retrieved from ERIC database. (EJ854832)

Yuen, K. V., & Mu, H. Q. (2012). A novel probabilistic method for robust parametric identification and outlier detection. *Probabilistic Engineering Mechanics, 30*, 48-59. doi:10.1016/j.probengmech.2012.06.002

Yunus, M. M., Sulaiman, N. A., & Embi, M. A. (2013). Malaysian gifted students' use of English language learning strategies. *English Language Teaching, 6*(4), 97-109. doi:10.5539/elt.v6n4p97

Zare, P. (2010). An investigation into language learning strategy use and gender among Iranian undergraduate language learners. *World Applied Sciences Journal, 11*(10), 1238-1247.

Zarei, G. R., & Pourghasemian, H. (2016). Mediational role of perceptual styles in L2 lexical inferencing and the associated strategy use. *3L; Language, Linguistics and Literature, The Southeast Asian Journal of English Language Studies, 22*(1), 179-189.

Zarifi, A., & Mukundan, J. (2014). Creativity and unnaturalness in the use of phrasal verbs in ESL learner language. *3L; Language, Linguistics and Literature, The Southeast Asian Journal of English Language Studies, 20*(3), 51-62.

Zeynali, S. (2012). Exploring the gender effect on EFL learners' learning strategies. *Theory and Practice in Language Studies, 2*(8), 1614-1620. doi:10.4304/tpls.2.8.1614-1620

Zhang, J., & Evans, M. S. (2013). An empirical study on the multidimensional learning styles of Chinese EFL students. *International Proceedings of Economics Development and Research, 68*, 61-69. doi:10.7763/IPEDR

Zhang, L. J., & Xiao, Y. (2006). Language learning strategies, motivation and EFL proficiency: A study of Chinese tertiary-level non-English majors. *Asian Englishes, 9*(2), 20-47. doi:10.1080/13488678.2006.10801187

Zhong, Q. M. (2015). Changes in two migrant learners' beliefs, learning strategy use and language achievemens in a New Zealand context. *System, 53,* 107-118. doi:10.1016/j.system.2015.07.001

Zohrabi, M. (2013). Mixed method research: Instruments, validity, reliability and reporting findings. *Theory and Practice in Language Studies, 3*(2), 254-262. doi:10.4304/tpls.3.2.254-262

Zohrabi, M., Torabi, M. A., & Baybourdiani, P. (2012). Teacher-centered and/or student-centered learning: English language in Iran. *English Language and Literature Studies, 2*(3), 18-30. doi:10.5539/ells.v2n3p18

Zokaee, S., Zaferanieh, E., & Naseri, M. (2012). On the impacts of perceptual learning style and gender on Iranian undergraduate EFL learners' choice of vocabulary learning strategies. *English Language Teaching, 5*(9), 138-143. doi:10.5539/elt.v5n9p138

Zwick, R. (1986). Another look at inter-rater agreement. *ETS Research Report Series, 1986*(2), i-23. doi:10.1002/j.2330-8516.1986.tb00189.x

## LIST OF PUBLICATIONS AND PAPERS PRESENTED

### Journal Publications

Ho, A. P., & Ng, L. L. (2016). Gender-based differences in language learning strategies among undergraduates in a Malaysian public university. *Issues in Language Studies, 5*(2), 1-17.

Ho, A. P., & Ng, L. L. (2017). Effects of learners' language proficiency on their language learning strategies. *Malaysian Journal of Languages and Linguistics, 6*(1), 11-26.

### Conference Papers/ Proceedings

Ho, A. P., & Kow, Y. C. (2010). Language learning strategies of Malaysian ESL learners. *Proceedings of the 19th MELTA International Conference 2010* (pp. 762-777). Selangor, Malaysia: MELTA (ISBN 978-983-9411-01-0).

Ho, A. P., & Ng, L. L. (2014). Perceptual language learning style preferences of Malaysian undergraduates. *Proceeding of International Conference on Language Studies 2014* (pp. 13-18). Kuching, Sarawak, Malaysia: Universiti Malaysia Sarawak.

Ho, A, P., & Ng, L. L. (2017). *Exploring interaction between gender and language proficiency in use of language learning strategies by Malaysian undergraduates*. Paper presented at International Conference on Language Studies, Kuching, Sarawak, Malaysia.