

**The Relationship between the Use of Meta-Cognitive Self
Regulated Learning Strategies (Meta-SRLS) and
Achievement in English Language Learning**

Rozilawati Mahadi
(BA.ELS, MA. Applied Linguistics)

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Abstract

This study provides a detailed description of Meta-cognitive Self Regulated Learning (Meta-SRL) strategies employed by one hundred and seventy (170) undergraduate students majoring in different Engineering courses at one local university in the northern part of Malaysia. The findings revealed that the proposed Meta-SRLS framework can be used as a basis for a development of assessment instruments and teaching curricula that measure and develop a systematic Meta-cognitive Self Regulated Learning ability among ESL learners. The findings also indicated the use of a wide range of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) by the participants in their English language learning. Moreover, the results of Pearson correlation test also revealed a positive relationship between the use of Meta-SRL strategies and the participants' level of English language proficiency. The results affirmed the findings of previous studies that language learners with advanced proficiency level tend to utilize more strategies than those with low proficiency level (e.g., Magogwe & Oliver, 2007); Hong-Nam & Leavell, 2006; Wharton, 2000; Oxford & Nyikos, 1989; O'Malley & Chamot, 1985).

The study employed a multiphase mixed method research design to investigate the use of Metacognitive Self Regulated Learning Strategies in second language learning context via five phases of investigation. A systematic review of literature was conducted to develop a Meta-SRLS framework that may be used to assess metacognitive self regulatory behaviors and assist language instructors in promoting autonomous learning in the second language classrooms. In addition, a group of experts participated in the interviews to validate and

evaluate the proposed Meta-SRLS framework. In order to examine the use of strategies by the participants, a newly adapted Meta-Cognitive Self Regulated Learning Strategies Questionnaire (Meta-SRLSQ) was used to collect the data. The questionnaire was redesigned based on the previous literature (Flavell, 1979; Brown et al, 1983; Flavell, 1987; Anderson, 2002; Mokhtari & Richard, 2002; Danuwong, 2006; Azizah, 2012).

This study has yielded findings that make an original contribution to both the theory and the practice of Self Regulated learning especially in the context of language teaching and learning. In the context of second language education in Malaysia, this study provides new insights in the area of metacognition and self regulation. The pedagogical implications of this study will further lead to a systematic teaching of Meta-cognitive self regulated learning strategies in the L2 classrooms and increase the proficiency level of L2 learners especially

Declaration

I declare that this thesis, submitted in the fulfillment of the requirements for the award of Doctor of Philosophy, in the Faculty of Arts and Social Sciences, School Of Education at the University of Nottingham, Malaysia Campus, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institute.

Rozilawati Mahadi

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CHAPTER 1

INTRODUCTION

Lao Tze once says that,

If you give a man a fish, you will feed him once.

If you take a man fishing, you will feed him for a week.

If you teach a man to fish, he will never be hungry.

– *Lao Tze, Old Chinese Proverb*–

1.0 Overview of the chapter

The Chinese proverb implies the importance of lifelong learning among students especially in the new millennium. In the twenty-first century, it is very crucial to identify the types of competencies that today's learners need to develop in learning. And nowadays, lifelong learning is acknowledged by both educators and researchers as one of the most important competencies that students must possess. It is claimed that the traditional learning and teaching approaches which emphasize on memorization and the application of simple procedures will not advance learners' critical thinking skills or autonomy. Learners should be involved in self regulated learning experiences that have more genuine values and relevance for them personally and their communities. Moreover, there is a common understanding that to achieve academic excellence, learners must be able to self regulate

their actions and maintain their academic goals despite difficult academic tasks (Richardson et al., 2012; Pintrich and Zusho, 2007; Schunk and Zimmerman, 2006).

Nowadays, promoting lifelong learning in all aspects of one's life has emerged to be a major global educational challenge. There seems to be a unanimous agreement with regards to the need for lifelong learning and what it entails for teachers as well as learners in compulsory education. Meeting this challenge will require changes in the way teachers teach and learners learn, as teachers take on a more facilitative role and learners take more responsibility for setting goals, identifying resources for learning, and reflecting on and evaluating their learning.

Trim (1988) emphasizes that learning is a life-long process and no school, or even university, can provide its students with all the knowledge and the skills they will need in their active adult lives. It is more important for a young person to have an understanding of himself or herself, an awareness of the environment and its workings, and to have learned how to think and how to learn. In addition, Rubin et. al. (2004), contends that language learners are the most important factor in the success of their own language learning. They further add that much of the accomplishment in language learning rests with the individual students and their capability to take charge of their own learning. Throughout my teaching experience in the classroom, I notice that the most common learning problem faced by my students is that they do not know 'how' to learn to improve their command of English language. It seems that the 'how' question of learning English still poses a problem to these learners, despite them being at a tertiary level and having been taught English for at least 11 years of their schooling experience.

Being an English instructor myself, I am fully aware of the individual differences between learners. One important question that I always ask myself is how my teaching methodology could possibly fit an entire class which comprises of students with different range of stylistics and strategic learning preferences. And I believe that understanding the ways in which learners differ from one another is of major concern to me as a teacher. It is throughout my observations that I realize, different learners use different strategies in order to help them achieve their learning goals. However, it is not sufficient to just distinguish that all students are different from each other in terms of strategy usage. I believe that as a teacher, I should have the skills and knowledge on how to help the students use different strategies to their advantage in the process of second language acquisition. To become a successful life-long learner, a primary presumption of developing self-directedness is by acquiring self-regulated learning strategies. The use of appropriate learning strategies improves proficiency and achievement, and enables students to take ownership of their own learning by enhancing learner autonomy, independence and self-direction (Wong, 2011). Thus, it is hoped that the study of meta-cognitive self regulated learning strategies and their pedagogical implications will further lead to a systematic teaching and learning practices that increase the success ratio of the L2 learners especially in the context of Malaysia.

The current study provides a rich description of the Meta-cognitive Self Regulated Learning (Meta-SRL) strategies employed by one hundred and seventy (170) undergraduate students majoring in different Engineering courses at Universiti Malaysia Perlis (UniMAP). This cohort of students enrolled in a language proficiency course namely Foundation English Course (EUW 112). The Foundation English Course (EUW 112) offered to this cohort, focuses on all aspects of language skills, and it is aimed at equipping students with

the necessary language skills to enable them to function effectively in the academic and working environment.

The main purpose of this study is to examine the use of Meta-cognitive Self Regulated language Learning Strategies (Meta-SRLS) by ESL learners while learning the English Language. A Meta-Cognitive Self Regulated Learning Strategies Questionnaire (Meta-SRLQ) will be used in the study to elicit information on the use of Meta-cognitive Self Regulated Learning strategies amongst the students. The questionnaire is designed based on the language learning strategies listed in the previous research (Flavell, 1979; Flavell, 1987; Brown et al, 1983; Anderson, 2002; Mokhtari & Reichard, 2002; Danuwong, 2006; Azizah, 2012). Apart from the survey, the participants in the current study will also be involved in semi-guided interview sessions in order to attain in depth understanding and interpretation of the results. Moreover, the content validity of the Meta-SRLS framework will be established via experts' reviews of the constructs (i.e. judging the relevancy of the constructs developed in the framework, and even the appropriateness of the items).

In the next section of this chapter, I will explain the background of the study, the main objectives of the study, the research questions proposed and also the definition of specific terms that will be used in the study. The significance of the study is outlined in terms of the broader impact on developing a meta-cognitive self regulated learning strategy framework that can be used to assist teachers and learners especially in the English language classroom and in English language learning and teaching context generally.

1.1 Background of the Study

A great shift in psychological basis of language learning from behaviorism to Cognitivism since the last three decades has shown a great change on the roles of second language (L2) learners in educational context. Second language (L2) learners are expected to play more active role in the classroom and take more responsibilities in their learning process than before. Many researchers have studied language learning strategies and factors related to the choice and use of language learning strategies such as learners' level of language proficiency, motivation, learning style, cultural backgrounds, gender, nationality and context of language learning (Oxford and Nyikos, 1989; Ehrman and Oxford, 1989; Ellis, 1994; Cohen, 1998, Wharton, 2000; Griffiths, 2003; Rahimi, et al., 2008 ; Chamot, 2005; Zhang, 2008; Rahman, et al., 2010; Mahadi & Subramaniam, 2013; Sadati & Simin, 2015).

A number of empirical studies have also investigated the relationships between learners' L2 proficiency and strategy use (Wharton, 2000; Kummin, et al., 2010; Sadati & Simin, 2016). For instance, in Wharton's (2000) study of university students' language learning strategies (LLS), he reported that students who rated their proficiency as "good" and "fair" used SILL strategies significantly more often than those who rate their proficiency as "poor". He further concluded that, *"There is a linear relationship between proficiency level and the reported frequency of use of many strategies"* (p. 231), and *"The relationship is two way, however, with proficiency affecting strategy use and vice versa"* (p. 232).

Moreover, Goh et.al (2012) found that students were more successful when they self-guided their own learning experiences. Traditional lectures, which have been the form of learning and teaching for decades, turned out to be insufficient in providing learning

opportunities to the learners and teachers in fulfilling the needs of the new generation learners. Therefore, it is necessary for the L2 learners to learn skills and strategies to acquire and adapt to the new knowledge as a solution to their learning problems. Consequently, language learning strategies have gained more importance recently, particularly those learning strategies which assist L2 learners to be more active, independent and self directed.

Hence, in my attempts to discover the type of language learning strategies that enhance L2 learners' language achievement, I came across the theory of metacognition and self regulated learning. O' Mally & Chamot, (1990) explain that "One group of strategies which may assist language learners to be more active and independent and influence learning achievement is meta-cognitive strategies; these strategies are "higher order executive skills that may entails planning for monitoring, or evaluating the success of learning activity" (p.44).

Research on meta-cognition indicates that meta-cognitive strategy/knowledge is closely related to success in second/foreign language learning fields. Learners who are equipped with meta-cognitive strategies, are more aware of their learning and they know 'how' and 'when' to employ the most relevant strategies to accomplish a given task. They even know how to accomplish a particular task in the most effective way. They plan their learning in advance, monitor their learning during the task performance, and evaluate their learning after task accomplishment (Zhang & Goh, 2006). Numerous studies have demonstrated that the instruction of meta-cognitive strategies helps learners to become more self-regulated,

self-directed and successful in their learning (Goh, 1997; O'Malley & Chamot, 1990; Vandergrift, 2002, 2003; Chanuwong, 2006; M. Zahidi, 2012; Sadati & Simin, 2015).

Despite all the positive effects of meta-cognition and self regulated learning strategies may offer towards L2 learning, however, very little emphasis has been placed on using meta-cognitive and self regulated language learning strategies in L2 language learning setting, specifically in the context of L2 learning in Malaysia. Thus, I am personally believed that, it is worth for me to conduct a study to further investigate the use of Meta-cognitive Self Regulated Learning strategies amongst L2 learners and to find out whether there is a relationship between the use of Meta-cognitive SRL strategies and the learners' English language achievement. Moreover, the current study also aims at developing a comprehensive meta-cognitive self regulated learning strategies (Meta-SRLS) framework that may be used to assess students' use of learning strategies and further support teachers in incorporating these strategies in their teaching.

In Malaysia, several studies have been conducted on second language and learning strategies, (Kashefian, et. al, 2011; Razak, et. al. 2012; Shafie, 2013; Raoofi, et.al. 2014; Subramaniam & Palanisamy, 2014; Kiram, et.al, 2014; Chuin & Kaur, 2015) . Most of these studies addressed on a general language learning, and only several others focused on the use of meta-cognition and self regulated learning (Kosnin, 2007; Rahman, 2010; Zahidi, 2012; Maasum, et.al. 2012). Although these studies were generally related to the application of meta-cognition and self regulation in learning, however, there has been no review that integrates both meta-cognition and self regulated learning in the literature of second language learning context especially in Malaysia.

Therefore, it appears to be essential for me to do a study that combines both theories to obtain a deeper understanding of these two related topics and to extent an investigation on Meta-cognitive Self Regulated Learning strategy awareness amongst the L2 learners and also to find the relationship between the use of Meta-Self Regulated Learning strategies and language learning achievement.

1.2 The Role of Meta-cognition in promoting autonomous learning and enhancing academic achievement

Research on learning strategies has highlighted the importance of strategy instruction and its role in making learners become more successful in their academic career. Oxford (2003) believes that “language learning styles and strategies are among the main factors that help to determine how- and how well- our students learn a second or foreign language” (p.1). He further explains that, when chosen consciously, language learning strategies can act as a key to active, conscious, and purposeful self-regulation learning. Research has shown that language learners can learn more effectively when teaching them some of the learning strategies that have been identified as one of the defining characteristics of a *good language learner* in the literature (Rubin, 1975,1981; Stern, 1975).

Among all learning strategies identified, meta-cognition is found to be a strong predictor of academic success among students. . Meta-cognition is said to play an important role in the process of learning (Chamot, 2005; Victori & Lockhart, 1995), and it has a significant role

in many cognitive activities concerning language use (Flavell, 1979). Many scholars believe that, apart from being the key factor in distinguishing successful learners from less successful learners, meta-cognition also enriches students with more motivation, more engagement in learning tasks, more tolerance, more persistence, more participation, more curiosity and more confidence, as well as improving their self-esteem as learners. A similar relation between cognitive and meta-cognitive strategies was also shown by Phakiti (2003). In a similar vein, Bachman and Palmer (2010) showed that the learner's use of meta-cognitive strategies determines how well the language ability can be realized in language use. Language ability is conceptualized as the combination of learner's language knowledge and strategic skills or meta-cognitive skills (Bachmann & Palmer, 2010).

With regard to language learning, Fleming & Walls (1998) reveal that good learners take active responsibility for their own learning and use a range of strategies which enable them to plan, monitor, manage and reflect on the process of learning a second/foreign language. They also found that meta-cognitive strategies are closely linked to the development of self regulated learning. Students who use self regulated strategies are intrinsically self motivated and are proven to be autonomous learners (Maxim, 2009; Zimmerman & Martinez-Pons, 1988). These types of learners are meta-cognitively, motivationally and behaviorally active participants in their own learning process (Zimmerman, 1986). Such learners successfully make use of cognitive and meta-cognitive strategies and they are always engaged in self regulated learning as well, knowing what to do, how to do and when to do. These learners are able to plan, monitor and evaluate how, when and where to use the strategies.

In line with this, researchers have tried to specify the characteristics of good learners and the type of strategies they use in specific language task (Birjandi et al, 2006). Strategic learners have meta-cognitive knowledge about their own thinking and learning approaches, a good understanding of what a task entails, and the ability to orchestrate the strategies that best meet both the task demands and their own learning strengths. Moreover, developing meta-cognition on learners brings them an awareness of the learning process and strategies that lead to success. When learners are equipped with this knowledge, they will understand their own thinking and learning process and accordingly, they are more likely to oversee the choice and application of learning strategies, plan how to proceed with a learning task, monitor their own performance on an ongoing basis, find solutions to problems encountered, and evaluate themselves upon task completion (Zhang & Goh, 2006).

According to Zimmerman (1989; 2000), “Self regulation refers to the degree individuals are meta-cognitively, motivationally and behaviorally active participants in their own learning process”. Within the realm of language teaching, one string of study has focused on finding the role meta-cognitive knowledge plays in determining the effectiveness of individuals’ attempts to learn another language. Flavel (1979) states that “ The role of meta-cognitive knowledge in many cognitive activities related to language use is conspicuous, eg., oral communication of information, oral persuasion, oral comprehension, reading comprehension, and writing, to language acquisition, and to various types of self instruction. Research on meta-cognitive knowledge and language learning especially learner strategies has acknowledged a mutual influence in terms of second language learning (Zhang & Goh, 2006) and highlights the fact that meta-cognitive knowledge should be incorporated in learner training programs to make their learning more efficient

(Wenden, 1998). It has also been found that explicit meta-cognitive knowledge about task characteristics and applying appropriate strategies for task solution is a major determiner of language learning effectiveness (Mahmoudi et al., 2010). In order to encourage learning, the investigation of learners' existing meta-cognitive knowledge and its impact on learning performance, hence, has merit.

1.3 Statement of the Problem

English language learning in Malaysia has always been a national issue. Nowadays, the standards of English among Malaysians is deteriorating. The Ministry of Education has implemented various policies to improve the situation; nevertheless, the problem is still a reality. This study offers a research that looks into the believe system of individual learners' meta-cognitive ability to lead his or her own learning, be reflective and be more self directed.

Recent research in this field suggests a potential link between meta-cognitive awareness, self regulated learning strategies and English language performance. Self-regulated learning has garnered a great deal of interest among academicians and psychologists as research indicated that it has positive effects on learners' academic achievement (Dckeyrel, Dernovish, Epperly, & Mckay, 2000; Kummin, 2010; Zahidi 2012; Hosseini & Raoufi 2014; Sadati & Simin, 2015), whereas experts advocate that “meta-cognitive awareness” ignites one's thinking and can lead towards a deeper learning and improved performance, especially among learners who are having problems in learning.

While aspects of meta-cognition and self regulation have been linked to academic performance, very little studies have employed the incorporation of these two aspects, particularly, in the English language learning context in Malaysia. Therefore, assessing the correlation between meta-cognition and self regulated learning strategies used by English language learners and their language achievement has merit for better understanding on how learners deal with their learning processes. The obvious classroom implication is for instructors to incorporate the explicit teaching and implicit use of these language learning strategies into the everyday classroom activities.

A considerable number of studies have been conducted in the field of education, which demonstrate that self regulated learning can enhance students' academic achievement and facilitate learning motivation (Boekaerts, Pintrich & Zeidner, 2000; Pintrich,1999; Zimmerman & Martinez-Pons, 1986,1988). Moreover, the positive role of self-regulated learning has also been demonstrated in various studies of self-regulated learning and academic achievement among Malaysian undergraduates (Kummin, 2010; Zahidi, 2012; Yen et.al, 2013).

In Malaysia, it has been generally acknowledged that the command of English language is decreasing among Malaysian ESL learners nowadays. A possible reason could be due to the lack of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) employed by the learners. If research implies that students using Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) will increase their academic performance, are there enough attempts by the institutions to teach these strategies to their students? Are there any

appropriate instructional materials used by the instructors to promote Self Regulated Learning (SRL) environment in the classroom? These two questions require a relatively critical answer.

It is believed that students are more likely to use Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) if the instructional materials give students opportunities to simplify tasks, decide when to work on assignments, determine the desired level of performance (Schunk & Zimmerman, 1994). In other word, a practical use of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) can assist students to become more self-regulated learners.

Meta-cognition involves activities such as planning to approach a given learning task, monitoring comprehension, and evaluating progress toward the completion of a task. Such activities require higher order thinking that actively control the cognitive processes engaged in learning. Unfortunately, many students are unable to adopt efficient, and effective strategies during learning which leads to a poor or failure in language learning performance. Since meta-cognition plays a critical role in successful learning, therefore it is important to study how students can be taught to better apply their meta-cognitive resources through meta-cognitive regulation.

Moreover, it is also crucial to understand the self-regulated strategies of the ESL learners because it helps to explain achievement differences among students and also serves as a mean to improving students' achievement. This study is an attempt to address this shortcoming in the ESL learning context in Malaysia. Previous literature shows that very

few studies have been conducted to look into meta-cognitive factors related to Self Regulated Learning in the context of ESL learning in Malaysia. Although research related to the use of language learning strategies has prospered since the 1980s, rather limited studies have been conducted on meta-cognition and self regulated learning in the L2 learning and teaching setting in Malaysia (Kosnin, 2007; Rahman, 2010; Zahidi, 2012; Maasum, et.al. 2012). Surveys about secondary ESL learners have been conducted by quite a number of language researchers in Malaysia such as (Kiram, et.al, 2014; and Chuin & Kaur, 2015). However, very few researchers investigate the application of Meta-cognitive Self Regulated Strategies (Meta-SRLS) by students in Malaysia especially in higher institutions setting. Hence, the current study aims to bridge this gap and also to explain further on how Meta-Cognitive Self Regulated Language Learning Strategies (Meta-SRLS) are related to ESL learners' performances.

In this study, I will examine the use of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) on learners' language performances and how this knowledge and awareness help learners to become successful ESL language learners. A comprehensive Meta-cognitive Self Regulated Learning Strategy (Meta-SRLS) framework for the purpose of assessing students' use of these strategies will also be proposed. This study also seeks to substantiate the empirical findings that by applying appropriate meta-cognitive self regulated language learning strategies, learners will be able to attain better results.

Moreover, the current study will also provide a list of suggested Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) that would be useful for ESL learners to enhance their language performance. The study also proposes a framework that can be used

by ESL/EFL instructors to explicitly incorporate the Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) into their teaching so that ESL learners can implicitly use them in their learning processes. As part of assessing the usefulness of the framework, an expert validation and review processes will be undertaken.

1.4 Purpose of the study

In the current study, my ultimate goals are to achieve the following objectives:

1. To develop a comprehensive meta-cognitive self-regulated learning strategies (Meta-SRLS) framework that may be used to assess students' use of these strategies and support teachers in incorporating the strategies in their teaching.
2. To conduct an expert validation and review of the proposed Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) framework as a framework for the teaching of Meta-cognitive Self Regulated Learning strategies.
3. To explore learners' use of Meta-cognitive Self Regulating Learning Strategies (Meta-SRLS) in English Language learning.
4. To determine the relationship between the use of Meta-cognitive Self Regulation Learning Strategies (Meta-SRLS) and learners' language achievement.

1.5 Research aims & objectives

When investigating Meta-cognitive self regulated learning strategies (Meta-SRLS), there are many factors that may affect the choice and use of learning strategies among learners. Most findings from the previous studies have demonstrated that many factors including degree of awareness, age, gender, nationality, learning style, personality traits, motivation, learning context, and language proficiency may have a great influence on strategy use (Zare & Nooreen, 2011; Khamkhien, 2010; Rahimi, et al. 2008; Chamot, 2004; Griffiths, 2003; Hong-Nam and Leavell, 2007; Green and Oxford, 1995; Ehrman and Oxford, 1989). As Ellis (1994: 472) has stated, there is a “*veritable plethora of individual learner variables which researchers have identified as influencing learning outcomes*”. It is also interesting to highlight that learners’ self perception and language proficiency are among the most significant factors believed to have an influence on strategies used.

The main goals of this study are: (i) To develop a comprehensive meta-cognitive self-regulated learning strategies framework that may be used to assess students’ use of these strategies and support teachers in incorporating the strategies in their teaching; (ii) To explore learners’ use of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) in English Language learning; (iii) To determine the relationship between the use of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) and learners’ language achievement; (iv) To conduct an expert validation and review of the proposed Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) framework as a framework for the teaching of Meta-Self Regulated Learning Strategies. Thus, in accordance with these purposes, the following research questions will guide this study:

1. What constructs will make up a Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) framework that may be used to assess students use of strategies and support teachers in incorporating the strategies into their teaching?
2. How do experts in the field of ESL education review and validate the Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) framework as instructional framework for the teaching of Meta-Self Regulated Learning Strategies?
3. What Meta-cognitive Self Regulated Learning Strategies do ESL learners employ in English language learning?
4. Is there any significant correlation between Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) used by L2 learners and their achievement in English language as measured by:
 - i. Malaysian University English Test (MUET) Results.
 - ii. Language Proficiency Course Assessment Grades.
5. Are learners' self- perceptions of their L2 language ability influenced the use of Meta-cognitive Self Regulated Learning Strategies

1.6 Definition of key terms

In the current study, the following key terms will be used frequently throughout the thesis.

Meta-cognitive strategies, also called self-directed learning skills in the methodology literature, or regulatory skills in the cognitive psychology literature, refer to executive processes that govern and direct other thought processes when planning, monitoring, evaluating, and regulating solution activity (Brown, 1987, p. 79; Flavell, 1987).

Self regulated learning. The term *self-regulated learning* was used to refer to the various ways individuals monitor, control and regulate their learning (Schunk & Zimmerman, 1994). Pintrich (2000) defines self-regulated learning as an active, constructive process where learners set goals for their learning, monitor, regulate and control their cognition, motivation and behavior, guided and constrained by their goals and contextual features on the environment. Pekrun, Goetz, Titz, and Perry (2002) further explain that self regulated learning comprises the process of planning, monitoring and evaluating in terms of individual learning and during these processes, it is essential for the learner to be flexible and adaptive to different learning strategies.

Learning Strategies. The term strategies is used to refer to general approaches as well as to specifications or techniques (Cohen, 1996). In the learning context, the strategies which support active, conscious, purposeful and attentive learning, greater proficiency, learner autonomy and self-regulation, are primarily promoted (Hsiao & Oxford, 2002).

Autonomous learning. The state where learners take charge of their own learning. (Benson, 2013; Horrath, 2005; Rivers, 2001)

Self Efficacy. Psychologist Albert Bandura (1997) has defined self-efficacy as one's belief in one's ability to succeed in specific situations or accomplish a task. One's sense of self-efficacy can play a major role in how one approaches goals, tasks, and challenges.

Planning involves identification and selection of appropriate strategies and allocation of resources, and can include goal setting, activating background knowledge, and budgeting time.

Monitoring in the current study refers to the degree to which students keep track of their level of mastery of materials and progress toward goals to regulate their behavior, strategy use, and motivation and to affect learning outcomes (Isaacson & Fujita, 2006).

Self-evaluation refers to degree to which students compare self-monitored information with a standard or goal and judge the adequacy of their performance relative to the standard or goal. Evaluation of learning outcomes (goals) in relation to the self-regulated learning process happens several times throughout learning scenarios for effective self regulated learners (Boekaerts & Cascallar, 2006).

Meta-cognitive Knowledge. Meta-cognitive knowledge is awareness of our thinking. Meta-cognitive knowledge includes knowledge about one's own or others' cognitive processes, self-efficacy, motivation or interest; knowledge of general strategies that might be used to achieve one's cognitive goals; or knowledge of the task context such as the task

demands or the information available during this task. Meta-cognitive knowledge can change over time, i.e., people can learn meta-cognitive knowledge. It also helps students become more knowledgeable of and responsible for their own cognition and thinking.

Meta-cognitive Regulation. While meta-cognitive knowledge includes the ability to identify what we do and do not know, meta-cognitive *regulation* involves the actions we take in order to learn (Sandi-Urena *et al.*, 2011). Meta-cognitive regulation is how we control our thinking to facilitate our learning. For example, students with effective meta-cognitive-regulation skills can select appropriate learning strategies for a task and modify their approaches based on outcome.

Forethought Phase: The forethought phase is seen as a stage setting for learning- students engage in task analysis and assess their motivational beliefs and self-competence. Under this phase, students tend to ask themselves a series of questions so as to shape their thought processes and their actions. For example, students ask themselves questions such as “Where is the suitable place to complete this task?”, and “How can I complete this task?.

Performance Phase: This phase entails the processes (i.e., self-control and self-observation) that students use in achieving their goals during task performance or learning. Questions that self-regulated students may ask themselves in the second phase are “Am I following my plan correctly?”, “Am I being distracted?”, and “What strategies can I use to help me keep working?”

Self Reflection Phase: During self reflection phase, learners self-reflect on their actions and learning and evaluate them to see if they have been able to achieve the stated goals and the expected outcomes (Zimmerman, 2009; Pintrich, 2004). Students do self reflection by asking questions such as “Have I been able to achieve all of my goals?”, “Which strategies worked in view of the activity and the situation (environmental context)?” “Which conditions helped me be successful and what conditions distracted them?” These questions are asked so as to guide the student to maintain and improve on strategies and to be motivated as well.

1.7 Significance of the study

Meta-cognitive strategies play an important role for success in learning across disciplines as well as being closely linked to the development of independent learning. Many contributions to research suggest that there is a positive relationship between the use of meta-cognitive strategies and achievement in English (Wafa, 2003; Chamot, 2005; Kummin, 2010; Zahidi, 2012; Yen et. al, 2013; Sadati & Simin, 2016). Most of the above-mentioned studies reveal that students with high achievement in English use more meta-cognitive strategies than those low achievement students.

Remarkably, findings have shown empirical evidences of the importance of meta-cognition and self regulated learning in enhancing learning performances among learners especially in the field of English language education (Wafa, 2003; Chamot, 2005; Kummin, 2010;

Zahidi, 2012; Yen et. al, 2013; Sadati & Simin, 2016). Most of these studies have suggested that self regulated learning is related to a positive educational outcome.

As suggested by Zimmerman (2008), those who are considered as self-regulated learners are “meta-cognitively, motivationally, and behaviorally active participants in their own learning process” (p.4); this study may be beneficial for many undergraduates in Malaysia, who come directly from high school, where a ‘spoon feeding’ mentality is still very much ingrained in them. It is very much anticipated to see that when learners use self-regulated learning strategies in their learning, they will play a role of activate learners who efficiently control, manage and enhance their own learning (Zimmerman & Martinez-Ponez, 1992).

Moreover, studies on self-regulation will enable a better understanding of factors involved in the teaching and learning process. As meta-cognition and self regulation comprise a set of key processes that are critical for learning, it is expected that educators or language instructors can develop ways to reduce students’ difficulties in learning that arise from their lack of awareness and control over learning. Meta-cognition is the “control of cognition” and is characteristically identified as the cognitive component of self regulation. Self Regulated Learning (SRL) incorporates both meta-cognitive monitoring (i.e. knowledge of cognition or meta-cognitive knowledge) and meta-cognitive control (involving the skills associated with the regulation of meta-cognition). During self regulated learning (SRL), students need to deploy several meta-cognitive processes to determine whether they understand what they are learning, and perhaps modify their plans, goals, strategies, and effort in relation to dynamically changing contextual conditions.

Thus, it is very significant to conduct a research that incorporates both meta-cognition and self regulated learning in one study to see the extent to which Malaysian L2 learners deploy these two main elements in order to become more autonomous learners, who can control their learning. Apart from that, it is also important to find out whether there is a relationship between meta-cognition, self-regulated learning strategy and English language performance.

Indisputably, the insight into Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) that learners possess, and the interaction between these strategies and learners' existing knowledge and experiences, can provide teacher/instructor a clear and explicit guidelines on how learners develop self- autonomy in their language learning processes. Consequently, teachers or language educators can also implement wide range of learning instructions and tasks that can promote the use of Meta-cognitive Self Regulated Learning strategies (Meta-SRLS) in their teaching.

This study contributes to the field of English as a Second Language (ESL) as well as to the Teaching of English to Speakers of Other Languages (TESOL). A comprehensive Meta-cognitive Self Regulated Learning Strategy (Meta-SRLS) framework proposed in the current study, will benefit both learners and teachers as it can be explicitly used to assess learners' use of Meta-Cognitive Self Regulated Learning strategies (Meta-SRLS) and even support teachers in incorporating these strategies in their teaching. Language educators and ESL practitioners may also find this research useful for improving curriculum design, and

classroom pedagogies related to strategy usage. By identifying a list of strategies employed by successful language learners, the less effective L2 learners may also benefit from applying the same strategies in their learning. This will help their language learning processes become much more effortless and effective. Consequently, learners will also be enriched with adequate learning strategies to develop autonomous learning and become more successful learners. Hence, the investigation of learners' existing meta-cognitive knowledge and strategy use, provides rationale for more research on this particular area.

1.8 Structure of the thesis

The current thesis is organized into eight different chapters as outlined below.

Chapter 1: Introduction. This chapter provides background to the study, which situates and explains the motivations behind the research endeavor, and the pedagogical significance of the current study.

Chapter 2: Literature Review. This chapter provides an in-depth overview of the research area. It defines terminologies used in the present study and examines the theories related to the current study. It also evaluates how the literature defines and understands meta-cognition and self regulated learning processing and their roles in enhancing autonomous learning.

Chapter 3: Conceptual Framework of the study. This chapter describes a conceptual framework for Meta-cognitive Self Regulated Learning (SRL) in the ESL classroom context. The framework explains the integration of the two constructs; meta-cognition and

self regulated learning. It also describes the theories underpin the development of the current study.

Chapter 4: Research Methodology. This chapter outlines the rationale for the chosen methodology. It also explains how the choice of mixed method approach impacted on the development of the study. Ethical consideration and other issues that emerge during the research processes are also discussed in this chapter.

Chapter 5: Chapter 5 provides significant reviews and validation of the proposed framework by expert interview panels. This chapter provides findings of experts' validation and review of the meta-cognitive self regulated learning strategies framework proposed in the present study. Using a panel of experts during the course of a validation will provide useful feedback concerning the quality of a newly developed measure.

Chapter 6: This chapter reveals findings of the quantitative data collected through the questionnaire survey. The main objective of this chapter is to discuss findings with reference to the following research question: What Meta-cognitive SRL strategies do ESL learners employ in English language learning?. It provides discussion on the overall Meta-cognitive Self Regulated Learning Strategies employed by the participants in the current study. Discussion on the findings are divided into three sub-sections: (i) The overall Meta-Cognitive Self Regulated Learning Strategies used by participants; (ii) The use of Meta-Cognitive Self Regulated Learning Strategies in terms of *planning, monitoring, adjusting* and *evaluating* components; and (iii) The use pattern of Meta-Cognitive Self Regulated Learning Strategies by user/participant. Furthermore, this chapter also discusses and analyses the findings for the second research question: *Is there any significant correlation*

between Meta-cognitive SRL Strategies (Meta-SRL) used by learners and their achievements in English language as measured by: a) MUET Band Scores; and b) Language proficiency course exam Grades. It provides discussion on the relationship between Meta-cognitive SRL strategies used by the participants in the study and their English language achievements.

Chapter 7: Chapter 7 provides answers to the third research question of the current study. *Is learner's self- perception of his/her language ability correlated to his/her use of Meta-cognitive SRL strategies?* Self-perception has long been considered as a key component of self-regulated learning among adult learners as well as an essential variable in maintaining control over one's actions (Pintrich and Schunk, 2002). Self perception is found to be critical in influencing learners' behavior towards learning and can make a significant contribution in helping university students succeed. Therefore, it is important to examine the relationship between participants' self-perception of their English language abilities and the use of Meta-cognitive Self Regulated Learning strategies. This chapter provides discussion on this issue.

Chapter 8: Conclusions & Recommendations. This chapter summarizes the main findings of the present study. It outlines the significance of the findings to the body of knowledge in the fields of both meta-cognition and self regulation. It also provides recommendations for future research and practices.

1.9 Chapter Summary.

This chapter has outlined the purpose of the study, the research problem and its significance, the theoretical background, and the rationale for this study. In addition, the research questions and definition of terms have also been presented in this chapter. In the next chapter, the review of literature elaborates on the underpinning theories and empirical findings of studies done in the field of meta-cognition and self-regulated learning.

CHAPTER 2

THEORETICAL BACKDROP TO META-COGNITION & SELF REGULATION

2.0 Overview of the chapter

In the current study, I will explore learners' self-regulation in L2 learning environment in a Malaysian tertiary institution, and will focus on the meta-cognitive perspective of self-regulatory behaviors of the learners. Hence, the primary purpose of this chapter is to review relevant literatures and provide a background scenario of the overall concept of Metacognition and Self Regulation. For this purpose, conceptual definitions and a brief review of Meta-cognition theory will be presented. Several related theories will be discussed to highlight the importance of these components and how they relate to academic performance. The theory of Cognitive Meta-cognition initiated by Flavell (1979) and the Theory of Metacognition introduced by Brown (1987) will be introduced in this chapter and both theories will be examined and discussed in terms of how these two theories are related to the Self Regulated Learning model proposed by Zimmerman (2000). Then, recent research studies assessing Meta-cognition and Self Regulated Learning will be reviewed analytically to explain how Meta-cognition is exercised within the Self Regulated Learning constructs. As a final point, my discussion will be extended towards the role of meta-cognition in self regulated learning and its relationship with learners English language achievement.

A growing body of research has shown that meta-cognition is the key element of self-regulation. There are numerous empirical studies which highlight the complex relationship between self regulation and academic achievement. However, there remain substantial gaps in the evidence for predictors and outcomes of self regulation in L2 learning contexts.

For that reason, this study will further broaden our understanding on how meta-cognition can be utilized in enhancing English language proficiency. This positions the current study within a wider field of literature on self regulation and academic performance by integrating meta-cognition as a key element that influenced L2 achievement. In addition to the theoretical backdrop provided, this study will also highlight the use of ‘expert reviews’ as a methodological research tool used in the current research. Finally, possible future research and implications for Meta-cognition and Self Regulated Learning assessment and instruction will also be discussed.

2.1 The Theory of Meta-cognition

...a musician requires considerable metacognitive skills in order to be able to recognize the nature and requirements of a particular task; to identify particular difficulties; to have knowledge of a range of strategies for dealing with these problems; to know which strategy is appropriate for tackling each task; to monitor alternative strategies; to evaluate learning outcomes in performance context and take action as necessary to improve performance in the future. The musician must also have well-developed metacognitive skills including knowledge of and how to utilize skills for supporting practice, for example managing time appropriately to be able to meet deadlines, maintaining concentration, maintaining motivation and understanding what preparations are needed to ensure high performance standards. (Susan Hallam, 2001)

The above excerpt by Susan Hallam (2001) gives us a detailed description of how meta-cognition is involved in musical self-regulated learning. The passage shows many facets related to metacognition involvement in learning. The root “meta” means “beyond,” so the term refers to “beyond thinking.” In a simplest term, meta-cognition is defined as “thinking about your own thinking.” The phrase was termed by American developmental psychologist John H. Flavell in 1979, and the theory developed throughout the 1980s among researchers working with young children in early cognitive stages. Meta-cognition has become the major fields of psychological developmental research for the last 40 years and thereafter, a considerable amount of empirical and theoretical research on this area has been extended into many other disciplines including language education.

Meta-cognition is known as a “fuzzy” concept by most researchers in the related field (Brown 1987; Flavell 1981; Hacker 1998) because of the vague definitions, characteristics and lots of different historical roots it possesses. Greatly influenced by the work of Jean Piaget, Flavell (1971; 1979) initially proposed that meta-cognition refers to the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects. Later, he further defined meta-cognition as the “knowledge and cognition about cognitive phenomena” (Flavell, 1979, p. 906). Brown (1987, p. 66) described meta-cognition as “one’s knowledge and control of own cognitive system”. White (1988) explained that meta-cognition is “an inner awareness or process, not an overt behavior (p. 73), while other researchers (Biehler & Snowman, 1993; Eggen & Kauchak, 1995) agreed that meta-cognition is one’s knowledge about one’s own cognition.

To date, there are various definitions for meta-cognition in the existing literature. The definition of meta-cognition has been broadened and includes, not only “thoughts about thoughts” as it was considered before, but the following notions as well: knowledge of one’s knowledge, processes, and cognitive and affective states; and the ability to consciously and deliberately monitor and regulate one’s knowledge, processes, and cognitive and affective states. Jacobs and Paris (cited in Michalsky, Mevarech, & Haibi, 2009) described meta-cognition as “the conscious self-awareness of one’s own knowledge of task, topic, and thinking, and the conscious self-management (executive control) of the related cognitive process” (p. 364). Veenman et al. (2006) argued that if meta-cognition is a set of self-instructions to regulate task-performance, then cognition is the vehicle for these self-instructions.

A more refined definition that captures the complexities of meta-cognition in the context of learning might be: *“a higher order executive process that monitors and coordinates other cognitive processes engaged during learning, such as recall, rehearsal, or problem solving”* (Tobias & Everson, 2009, p.108). Simply put, despite of various definitions offered in the literature, meta-cognition in the context of the current study refers to the *conscious awareness of one’s own cognition and the conscious control of one’s own learning*. This refers to the knowledge and ability one has about his or her own cognitive processes. With this conscious knowledge or awareness, a person is able to self regulate his or her own cognition and control his or her own learning). Expanding the above definition on language learning context, this study defines meta-cognition as individuals’ knowledge about and regulation of cognitions (planning for the task, monitoring one’s performance, regulating skills, and evaluating performance and goals fulfillment).

A number of models have been proposed which are derived from different conceptualizations of meta-cognition. Some are more general and provide a theoretical framework for meta-cognition, such as Flavell's and Brown's models of meta-cognition; while others concentrate on specific aspects of meta-cognition, such as the knowledge of the structure of language (Tunmer and Bowey, 1984), the memory processes and meta-memory (Schneider, 1985), and studying from texts (e.g. The Tetrahedral Model for Learning from Texts by Brown et al. (1986).

Meta-cognition is often described as being made up of two constituent parts: (1) Meta-cognitive knowledge, which is declarative and deals with the interplay between knowledge of one's abilities to perform tasks, the nature of the task, and the strategies one can employ to successfully perform the task; and (2) Meta-cognitive regulation, which includes activities related to goal selection, planning, monitoring, control, and reflection (Flavell et al., 1985; Schraw et al., 2006). Remarkably, meta-cognitive knowledge helps students become more knowledgeable of and responsible for their own cognition and thinking. Meta-cognitive regulation on the other hand, stimulates students to achieve a better use of intentional resources and learning strategies. Empirical studies (Bransford, et al., 2000; Winne, 1996, etc) have confirmed a strong inter-relationship between learners' meta-cognitive skills and their abilities to control and manage their own cognitive resources which include their understanding of, familiarity with, and effectiveness in executing the cognitive tasks required for success.

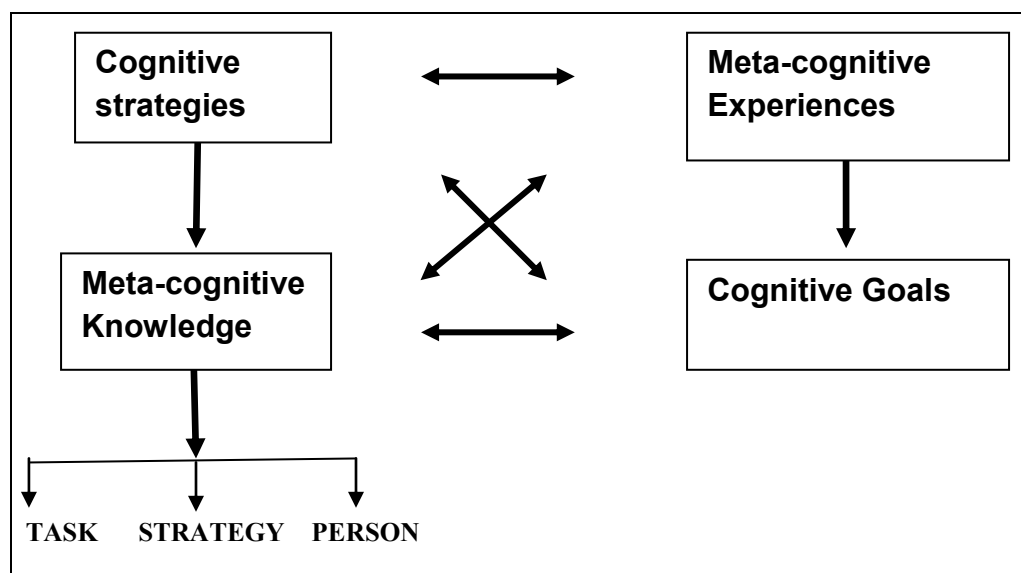
Next, Flavell's Model of Cognitive Monitoring is presented as it lays the foundations of the meta-cognition theory and it defines the components of meta-cognition and the interactions

among these components. Similarly, Brown’s Model is also presented in this discussion as it makes an important distinction of two different categories of meta-cognition: knowledge of cognition and regulation of cognition, which is taken into account in the design of my proposed framework for Meta-cognitive Self Regulated Learning.

2.2 Flavell’s Model of Cognitive Monitoring

In his classic article entitled “Meta-cognition and Cognitive Monitoring”, Flavell (1979) makes the first attempt to define the components of meta-cognition by creating a model of cognitive monitoring/regulation. His proposal includes four components: (a) meta-cognitive knowledge, (b) meta-cognitive experiences, (c) goals or tasks, (d) actions or strategies. A person’s ability to control a wide variety of cognitive enterprises depends on the actions and interactions among these components. (Figure 2.1 shows the inter-relations between them)

Figure 2: Flavell’s Model of Meta-cognition (1981, 1984b)



According to Flavell (1976), meta-cognition refers to “One’s knowledge concerning one’s own cognitive processes and products or anything related to them (...) [and] it refers, among other things, to the active monitoring and consequent regulation and orchestration of these processes (...), usually in the service of some concrete goal or objective” (Flavell, 1976, p. 232). In his definition, Flavell (1976), stresses on the two main constituents of meta-cognition which are meta-cognitive knowledge and meta-cognitive experiences or regulation. Among these two components, meta-cognitive knowledge is the primary construct that anchors the overall cognitive monitoring system. Flavell (1979) further states that meta-cognitive knowledge consists primarily of knowledge or beliefs about what factors or variables act and interact in what ways to affect the course and outcome of cognitive enterprises (Flavell, 1979, p. 907).

Specifically, meta-cognitive knowledge involves three distinct and highly knowledge variables: person knowledge (problem solver), task knowledge (problems), and strategic knowledge (ways to solve problems). Person knowledge or self knowledge refers to what individuals know and acquire about themselves as learners that may inhibit or facilitate learning. As suggested by Wenden (1998), person knowledge includes cognitive and affective variables such as age, motivation, or language aptitude.

Furthermore, this specific knowledge may also include learners’ self efficacy and beliefs about their own ability to achieve learning goals. Task knowledge requires four aspects: (a) knowledge about the purpose of a task (what is the objective in performing a given task? ; (b) knowledge about task demands (what resources and steps are necessary and what is the degree of difficulty involved?; (c) knowledge about the nature of the task (what kind of

learning is it?, and (d) awareness of the need for deliberate learning (Does it involve the use of self-regulatory or meta-cognitive strategies? (Wenden (1991, pp. 42-44). In addition, task knowledge generally involves three distinct elements: learners' knowledge about the task purpose and how it will meet their learning needs and goals (Breen, 1987); knowledge about the nature of a particular task identified through a classification process; information about a task's demands, such as the approach to the task and the knowledge and skills needed to complete the task (Wenden, 1998).

Strategic knowledge, on the other hand, refers to the awareness and application of meta-cognitive strategies while attending to a task. It rests on the assumption that an individual knows about what strategies are likely to be effective in achieving what goals in what sorts of cognitive undertakings. Jung (1992) defines knowledge about strategies as the learner's awareness of the utility, importance, and effectiveness of cognitive strategies. More specifically, this type of knowledge refers to the learner's knowledge about the strategies that are likely to succeed in achieving specific goals in different cognitive undertakings (Biehler and Snowman, 1993).

While Flavell (1979) uses the person-task-strategy taxonomy to define what he meant by meta-cognitive knowledge, Brown (1987) has categorized meta-cognitive knowledge based on declarative, procedural and conditional knowledge of a person. Declarative knowledge is propositional knowledge which refers to "knowing what", procedural knowledge refers to "knowing how" and conditional knowledge refers to "knowing why and when". In addition, declarative knowledge pertains to one's awareness of what influences cognitions and includes person, task, and strategy variables (Veenman et al., 2006). Procedural

knowledge pertains to a large variety of strategies or skills (Pintrich, Wolters, & Baxter, 2000; Brown, 1987; Pressley, Borkowski, & Schneider, 1987; Veenman et al., 2006) and it reflects “an appreciation for how skills operate or are applied” (Cross & Paris, 1988, p. 131). On the other hand, conditional knowledge pertains to one’s knowing when and why to use declarative and procedural knowledge (Garner, 1990).

Regardless of different theoretical perspectives and frameworks being discussed in the literature, meta-cognitive knowledge in brief, refers to what individuals know about themselves as cognitive processors, about the demands of a particular learning task and about different approaches that can be used for learning or problem solving. Meta-cognition also includes meta-cognitive experiences or also known as regulation of cognition. Meta-cognitive experiences are the segments of the stored knowledge, i.e. meta-cognitive knowledge, that have entered to consciousness, that is, “any conscious cognitive or affective experiences that accompany and pertain to any intellectual enterprise” (Flavell, 1979, p. 906). Meta-cognitive experiences are very likely to take place in circumstances which requires a great deal of careful, highly ‘conscious thinking’.

According to Flavell (1979), acquiring meta-cognitive strategies as well as cognitive ones is viable. Meta-cognitive knowledge can be added, deleted, or revised through meta-cognitive experiences. The goals or tasks have to do with the actual objectives of a cognitive endeavor. And finally actions or strategies, as the name indicates, are some ways and techniques that may assist in reaching those goals. It is generally categorized into three: planning, monitoring and regulation, and evaluation (Ozturk, 2016; Schraw, 1998).

Planning pertains to goal-setting that guides cognitions in general and monitoring specifically (Pintrich et al., 2000). Although it is not easy to separate monitoring and regulating from each other during a task performance, these activities can be distinguished conceptually as in the following (Pintrich et al., 2000). Monitoring activities include assessing learning and performance-in-action while regulation pertains to changing cognitions and behaviour to match them with personal goals and task demands (Pintrich et al., 2000). Evaluation, lastly, pertains to “appraising the products and efficiency of one’s learning” by re-visiting one’s goals and conclusion (Schraw, 1998, p.115). However, although these facets are described separately here, it is important to recognize that knowledge about and regulation of cognition are related and have an interactive nature (Veenman et al., 2006). To sum up, Flavell’s model helps us to define what meta-cognitive knowledge is and what are the main factors that most likely influence its content and development. In the next section, I will discuss on another important theory of metacognition which was proposed by Brown in 1987.

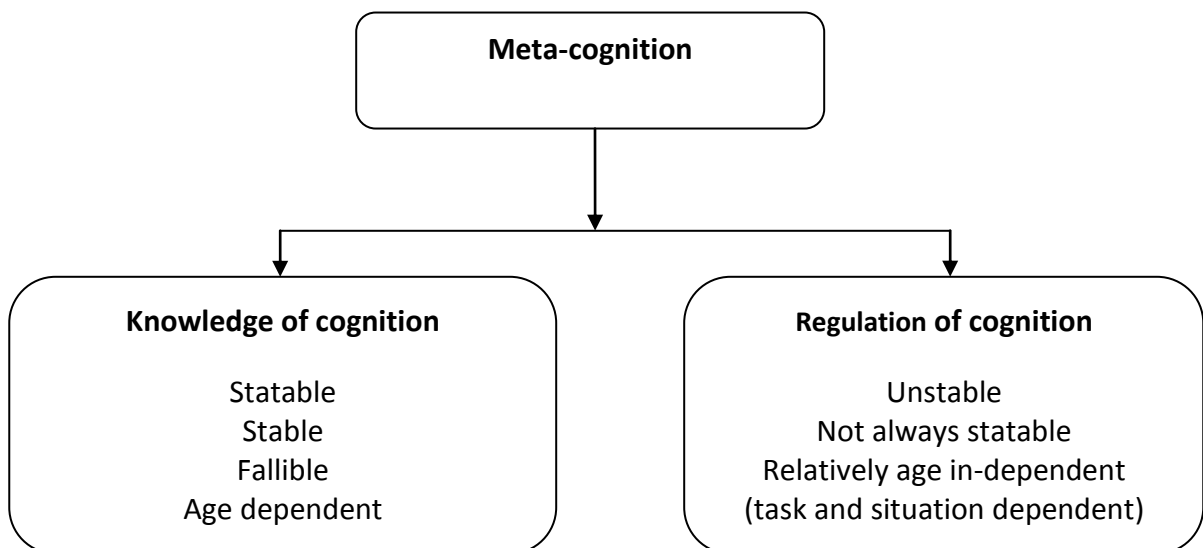
2.3 Brown’s Model of Meta-cognition

Ann Brown, a respected researcher in the area who has done much work on the cognitive processes of reading comprehension, states: “Meta-cognition refers to understanding of knowledge, an understanding that can be reflected in either effective use or overt description of the knowledge in question” (Brown, 1987, p. 65). Her definition calls attention to an important aspect of meta-cognition: awareness of one’s own knowledge or understanding of knowledge. It can be said that a learner understands a particular cognitive

activity if she can use it appropriately and discuss its use. But there are in fact different degrees of understanding, as it is not unusual for learners to use knowledge effectively without being able to explain how they did so. To account for this variability, the term “meta-cognitive person” is often used to represent a person who is aware of her own knowledge (as well as its limitations). Two other terms are used in her work: high meta-cognitive and low meta-cognitive to distinguish learners who are aware of their knowledge and strategies from those who are less.

Meta-cognition, according to Brown (1987) falls into two broad categories: (1) knowledge of cognition, as activities that involve conscious reflection on ones cognitive abilities and activities; and (2) regulation of cognition, as activities regarding self-regulatory mechanisms during an ongoing attempt to learn or solve problems. Brown (1987), asserts that knowledge of cognition and regulation of cognition are closely related, each feeding on the other recursively, although they can be readily distinguishable (see Figure 2.2)

Figure 2.2: Brown’s model of Meta-cognition.



In Brown's model, knowledge of cognition refers to the stable, statable, often fallible, and often late developing information that human thinkers have about their own cognitive processes as it requires that learners step back and consider their own cognitive processes as object of thought and reflection; traditionally this has been referred to as knowing that (Brown, 1987).

Brown (1987) further explains that regulation of cognition comprises of activities used to regulate and oversee learning. These processes include planning activities (predicting outcomes, scheduling strategies, and various forms of vicarious trial and error, etc) prior to undertaking a problem; monitoring activities (monitoring, testing, revising, and re-scheduling one's strategies for learning) during learning; and checking outcomes (evaluating the outcome of any strategic actions against criteria of efficiency and effectiveness). It has been assumed that these activities are relatively unstable (although they are ubiquitously employed by adults on simple problems), not necessary statable (knowing how to do something does not necessarily mean that the activities can be brought to the level of conscious awareness and reported on to others), and relatively age independent (i.e., task and situation dependent).

Additionally, he argues that expert learners (e.g. readers) monitor their comprehension and retention and evaluate their own progress in the light of the purposes for which they are learning to the extent that these activities become automatic and learners proceed as if in "automatic pilot". This concept tries to explain why meta-cognitive learners (i.e. those who apply meta-cognitive knowledge and skills in learning situations) sometimes are not conscious of their strategies and cannot describe their meta-cognitive knowledge. This

model emphasizes the executive processes, stressing the importance of the control that people bring or fail to bring to cognitive endeavors. Moreover, Brown (1987) points out the important characteristics of regulation of cognition, that have to be taken into account for those interested in the applications of these concepts into instructional research.

Both of these theories of metacognition highlighted that in order for learners to be self regulated, they should have the knowledge about themselves, the subject, the task, the learning strategies, and the context in which they will apply their learning. Not only that, learners should also have awareness of the obstacles that they might encounter during learning and how to deal with those obstacles. Acquiring the metacognitive knowledge and skills that are hallmarks of self-regulated learning enables students to take charge of their own learning and academic future.

The above theoretical overview of scientific research shows that students' general knowledge of the learning process is expected to influence how they direct their learning. This means that general knowledge of the learning process can support students in knowing how to interpret learning tasks and accordingly, develop the most effective learning strategies. The theories of both Flavell (1979) and Brown (1987) indicate that metacognitive awareness and self regulated understanding of learning strategies can help learners to learn effectively. Learners are considered to have an understanding of metacognitive knowledge when they can respond to their own questions about learning. Accordingly, Brown specifically pointed out that this kind of thinking not only cultivates effective learning but also aids learners in managing and monitoring of their their learning activities

2.4 Meta-cognition: How does it relate to Self Regulated Learning?

Metacognition is said to play an important role in the process of language learning (Chamot, 2005; Victori & Lockhart, 1995). But how are metacognitive learning strategies related to cognitive ones, and how they contribute to learning outcomes, is not unambiguously understood (Zhanget al, 2014). Metacognition is deemed crucial to so many aspects of self-regulated learning although it is difficult to comprehend its far-reaching impact. According to De Corte, Verschaffel and Op't Eynde (2000) self-regulation constitutes a feature of effective learning and problem solving and it refers to the ability to use meta-cognitive knowledge strategically to achieve cognitive goals.

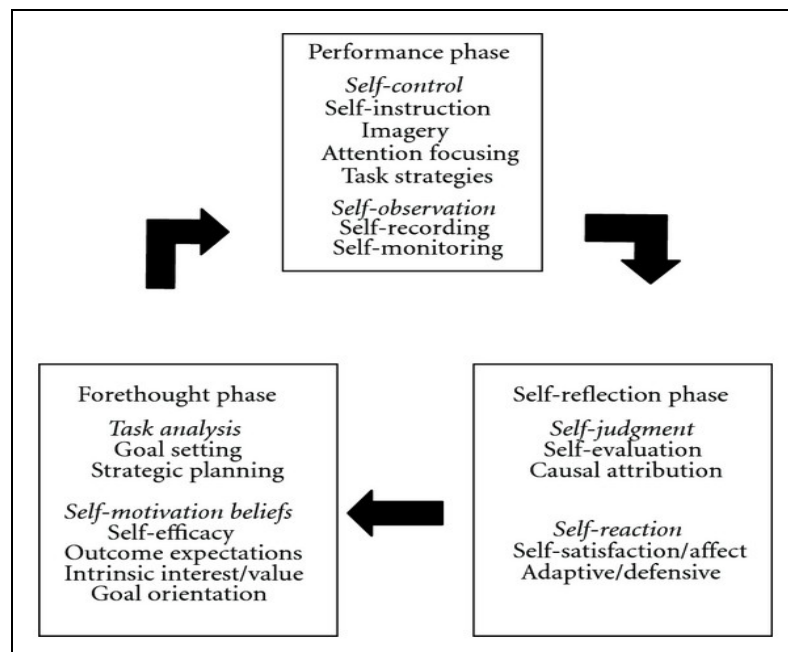
The construct of self-regulated learning was proposed by educational and developmental psychologists only in the 1980s and 1990s. The term *self-regulated learning* (from this point will be referred to as SRL throughout the thesis) was used to refer to the various ways individuals monitor, control and regulate their learning (Schunk & Zimmerman, 1994). Most of the models of SRL assume that the processes of monitoring, controlling and regulating are related to metacognitive knowledge about the self and cognition (Garcia & Pintrich, 1994). Therefore, SRL is the more general and inclusive construct encompassing both metacognition and metacognitive knowledge (Pintrich et al, 2000a). Zimmerman(2000, 2008) views that self regulated learners are those who are 'metacognitively, motivationally, and behaviorally active participants in their own learning process'. Zimmerman (1998, 2003, 2008) proposes three phases to self-regulation which incorporate metacognition.

The first phase is forethought which includes goal setting, strategic planning and self-efficacy. During this initial phase, students identify their learning goals, and set objective for achieving the goals. The second phase which includes attention focusing, and self monitoring is known as performance phase. Students attempt the tasks and monitor what they are learning. The third phase is self reflection which focuses on comparing self-monitored information with a standard goal and reactions to the results. During the reflection stage students assess their success or failure, modify their self-efficacy, make causal attribution, and adapt for future learning. In all these three phases, students are using academic goals as the yardstick against which they assess their learning; using the thermostat metaphor, goals are the set-temperature the thermostat uses to judge whether to turn-on the furnace.

These three phases are hypothesized to be interdependent so that changes in forethought processes impact performance control, which, in turn, influence self-reflection phase processes. During the forethought phase, which maintains task analysis and self-motivation, self-regulated learners form a full picture of the task in terms of situational factors, i.e., clarifying a task, setting goals, and planning specific strategies, and personal factors, i.e., setting up motivational beliefs about the task, such as, self-efficacy beliefs, namely, the perceived capability on finishing the task and self-expected outcomes. The second is *performance phase* that includes self-control and self-observation. Self-control refers to carrying out the strategies and tactics specified in the first phase by using self-control methods, such as, attention-focusing, the use of imaginary, self-instruction, and task strategies.

Self-observation means self-recording events to control learning behavior or self-experimentation to find out the cause of these events. For example, students self-record the time spend on homework. The last phase is *self-reflection* which includes self- judgment and self-reaction during which students self-evaluate their performance against their prior performance or external standards set by others, and then reconstruct new information and make adaptive strategy changes toward their learning goals. In general, a self-regulatory cycle is completed when self-reflection processes influence forethought beliefs and behaviors prior to subsequent performance or learning. Figure 2.3 below displays the inter-relationship between the three phases in learning.

Figure 2.3: Phases and sub-processes of self-regulation by Zimmerman (2003).

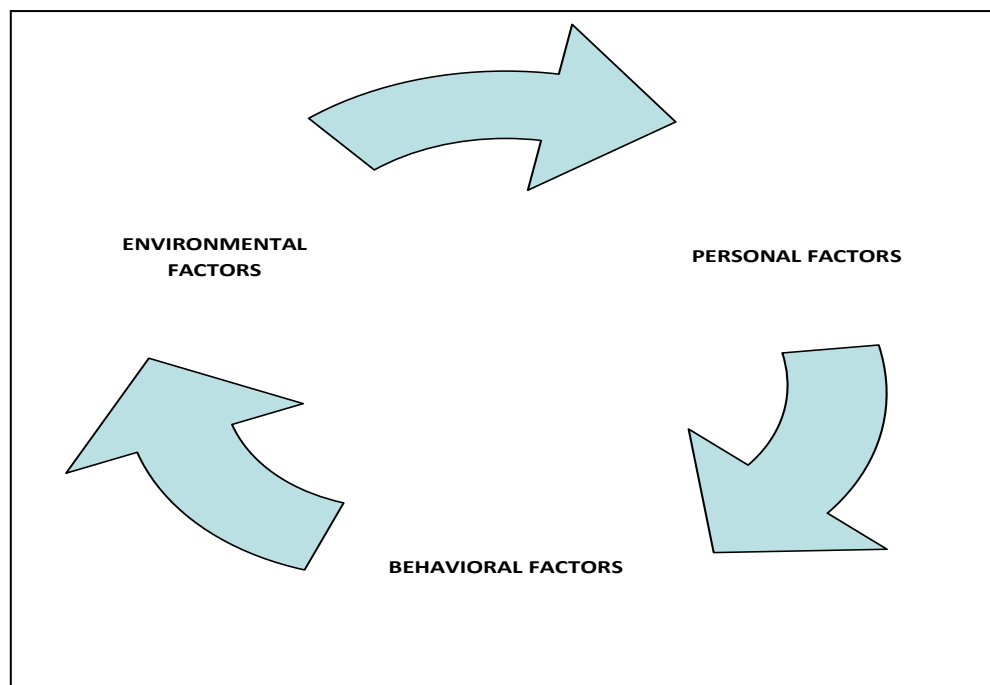


Self regulated learning has long been applied in academic learning. SRL has been investigated since 1980s through different theoretical perspectives ranging from pure

behaviorism to cognitive, phenomenological and volitional view (Zimmerman, 1989b). In comparison with other theoretical perspectives, Bandura (1986) states that Self regulated learning concepts from Social Cognitive Learning Theory offer a more inclusive explanation of students' self regulation behaviors in learning.

Social Cognitive Learning Theory views learning as an interaction between personal, behavioral and environmental influences, and behavioral change as the result of the interplay between personal self regulation and the external environmental influences (Bandura, 1986). The interactive relationship between the three influences is visualized in a triadic view of Self Regulated Learning proposed by Zimmerman (1989b, 2000, 2003) in figure 2.4. It has been assumed that the three key processes, i.e., personal, behavioral and environmental influences reciprocally interact with each other during the SRL process, and learners who are able to exert strategic control over each influence can be considered as self-regulated in their learning.

Figure 2.4: A triadic analysis of self-regulated functioning based on Social Cognitive Learning Perspective



In this triadic processes, Personal factor refers to beliefs and attitudes learners have in a certain learning situation, such as; self-efficacy, i.e. the degree of confidence one possesses in reaching target learning goals in a given learning situation (Bandura, 1986); behavioral factor means responses or reactions students make in a given learning situation; environmental factors, which are external as opposed to internal control of personal factors, such as, curriculum modules and materials, the role of teachers, parents, and peers during the learning process (Zimmerman, 1989a, 2000). The most important personal factor, i.e., self- efficacy plays a central role in controlling behavioral and environmental self-regulation (Zimmerman 1989a, 2000, 2003). For example, students with high self-efficacy tend to display better quality learning strategies to monitor their learning behavior and construct the learning environment. Behavioral and environmental influences in turn affect students' personal processes. For example, self-recording correct answers obtained from a test paper will certainly enhance students' self-efficacy; and the role of teacher and curriculum could provide partial support to the internal standards to facilitate the adaptive use of self-regulated learning processes (Bandura, 1986).

In self regulated learning, meta-cognition plays a major role in directing one's own learning. As elaborated by Zimmerman & Schunk (2010), SRL is a dynamic blend of two meta-cognitive operations, meta-cognitive monitoring and meta-cognitive control. Collectively, these two meta-cognitive operations change how activities like learning are carried out so that goals can be achieved in a more rewarding way. In meta-cognitive monitoring operation, learners may identify discrepancies between plans for achieving goals and processes enacted and then meta-cognitively control their learning by revising goals, adapting plans or changing strategies

2.5 Self Regulated Learning: Conceptual Definition

Self regulated learning has been defined as a process that involves “self –generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals” (Zimmerman, 2000, p.14). Pintrich (2000) defined self-regulated learning as, "an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behaviour guided and constrained by their goals and contextual features of the environment" (p. 435) . Within an academic context, the process of self regulation includes planning and managing time; attending to and concentrating on instruction; organizing, rehearsing, and coding information strategically; establishing a productive work environment; and using social resources effectively (Schunk & Zimmerman, 1997, p. 195). Pintrich and De Groot (1990) stated that self-regulated learning conjoins three major constructs; students' meta-cognitive strategies for planning, monitoring, and regulation, students' management and control of their effort on classroom academic material, and cognitive strategies that students use to learn, remember, and understand the material.

In a nutshell, there are various definitions and models of self regulated learning from different theoretical perspectives, but as Hofer argues, “ all these definitions have in common the basic assumption that students can actively regulate their cognition, motivation or behavior and, through these various regulatory processes, achieve their goals and perform better” (Hofer et al.,1998). In self regulated learning context, students are assumed to be aware of the potential usefulness of self regulatory processes and they are claimed to be ultimately responsible for their own learning processes. Autonomously, learners choose

appropriate strategies to study a certain topic or to complete an assignment, they reflect on the use of strategies and autonomously, monitor the learning processes. When problem occurs, they manage to find solution towards the problem.

Based on the research studies reviewed on this field, meta-cognition is found to be the drive behind learner's act of being decisive, self aware and knowledgeable in their learning process. Meta-cognitively, self regulated learners plan their own learning process, set learning goals, organize their own learning tasks, monitor closely and evaluate their learning process. In the next section, I shall discuss the roles of meta-cognition and self regulation in language learning and further review related empirical studies conducted on these fields from two perspectives: research in the western world and research in Malaysia.

2.6 The Role of Meta-Cognition & Self Regulation in Language Learning

Over the last two decades, meta-cognition has been considered as a complex phenomena related to the knowledge of cognition consisting of all mental activities connected to thinking, knowing, and remembering and regulating. As an important aspect of human experience, psychologists and educators have recognized that meta-cognition heavily influences the descriptions and explanations of the learning process. Due to its vital role in enhancing successful learning, it is important to study meta-cognitive activity and development so that learners can be taught to better apply their cognitive resources through meta-cognitive control.

The conceptualization of meta-cognition in educational sciences and language teaching is often attributed to John Flavell. Flavell (1979) defines meta-cognition as “awareness of thinking”. It is this ‘awareness’ that shapes learners’ beliefs about and attitudes toward learning which in turn affect their behaviors. According to Huseyin (2005, p. 148), “ the individual’s beliefs about oneself and about others as learners and of the requirements involved in the learning process relate to *meta-cognitive knowledge* acquired through both conscious and unconscious means, and in formal and informal settings”. Wenden (1998, p. 528) views meta-cognitive knowledge as “a pre-requisite for the self regulation of language learning: it informs planning, decisions taken at the outset of learning and the monitoring processes that regulate the completion of a learning task”. What is the significance of meta-cognition in learning? Flavell (1979) asserts that when meta-cognition is being used repeatedly, it becomes an automatic process – thus enabling learners to be more knowledgeable in the meta-cognitive strategies of planning, monitoring and evaluating. Thus, it can be concluded that meta-cognitive process enhances learning by guiding and helping learners to follow a wise course of action as they think through a problem, make decisions, or attempt to understand a situation or text.

There is also evidence that demonstrate how meta-cognitive strategies play a more significant role than other learning strategies in this process because once a learner understands how to regulate his/her own learning through the use of strategies, language acquisition should proceed at a faster rate (Anderson, 2003). According to Zhang & Goh (2006), when learners are equipped with this knowledge, they will understand their own thinking and learning process and accordingly, they are more likely to oversee the choice and application of learning strategies, plan how to proceed with a learning task, monitor

their own performance on an ongoing basis, find solutions to problems encountered, and evaluate themselves upon task completion.

Oxford (2002) proposes that the use of meta-cognitive strategies is important in the improvement of learning since they allow students to plan, control, and evaluate their learning. The deployment of these strategies in learning is referred to as self-regulation. In adopting a social-cognitive perspective to learning, Zimmerman (1990) considers meta-cognition as a sub-component of self-regulated learning. Bandura's social learning theory posits that self regulated learning occurs through the interaction of personal, environmental and behavioral factors. A self-regulated learner is one who is able to "understand and control their learning environment" (Schraw et al 2006, p. 111).

According to Boekearts (1994, p. 446), "*self-regulation is the ability to use and develop knowledge, skills and attitudes acquired in one context in another context*". In self regulated learning, meta-cognition plays a major role in directing one's own learning. Self-Regulated Learning (SRL), as elaborated by Zimmerman & Schunk (2010), is a dynamic blend of two meta-cognitive operations: *meta-cognitive monitoring and meta-cognitive control*. Collectively, these two meta-cognitive operations transform how activities like learning are carried out so that goals can be achieved in a more rewarding way. In meta-cognitive monitoring operation, learners may identify discrepancies between plans for achieving goals and processes enacted and then meta-cognitively control their learning by revising goals, adapting plans or changing strategies.

What can be usefully highlighted here is, in order for learners to be successful in learning, they have to have the knowledge about themselves as learners and about their cognitive processes. Having this knowledge, however, is not sufficient to be successful. They also need to learn to regulate their thinking processes, motivation and behavior to achieve a desirable learning outcome. Both knowledge and regulation are required. The following sections will further explore empirical research conducted in the field of meta-cognition and self regulation in language learning context.

2.7 Meta-Cognition, Self Regulation & Academic Achievement

A number of research studies show a significant association between meta-cognition, self regulated learning strategies and learning performance. Research evidence suggests that students' academic achievement is indeed related to strategy use (Anderman, Anderman, & Griesinger, 1999; Broussard & Garrison, 2004; Patrick et al., 2007; Stipek & Gralinski, 1996) and self-regulated learning strategies (Fuchs et al, 2003; Glaser & Brunstein, 2007; Patrick et al., 2007; Pintrich, 2000; Torrance, Fidalgo, & Garcia, 2007).

Theoretical accounts for the role of meta-cognition and self regulation on academic success and empirical research demonstrated evidence of its efficacy. Since the early years of studying, meta-cognition, meta-cognitive training and interventions have shown positive effects on learners performance in diverse fields such as science education (Adey & Shayer 1993, Georgiades 2000, Zohar & David 2008), mathematics (Mevarech & Kramarski 2003, Kramarski 2004, ,Desoete, Roeyers, & De Clercq 2003, Teong 2003, Mevarech & Kramarski 1997, Mevarech & Fridkin 2006), chemical engineering (Case & Gunstone

2006), reading (Michalsky, Mevarech & Haibi 2009, McElvany & Arlett 2009) and teacher education (Kramarski 2008). These empirical studies have included both quantitative and qualitative research methods.

Kramarski and Mevarech (2003) conducted a study investigating the effects of meta-cognitive training on the mathematical reasoning and meta-cognitive skills of 384 eighth-grade students. The results indicated that students exposed to meta-cognitive instruction in either cooperative or individualized learning environments outperformed comparison students with respect to the ability to interpret graphs, fluency and flexibility of correct mathematical explanations, use of logical arguments to support math reasoning, performance on transfer tasks, and level of domain-specific meta-cognitive knowledge, such as strategies for representing math concepts in multiple ways and specific mathematical strategies for interpreting graphs.

In the area of science education, Georgiades (2004) assessed achievement of primary school pupils after an intervention focusing on meta-cognitive thinking skills. The findings revealed that, students who underwent the intervention had higher achievement levels in class tests. However, this advantage was not found when problems were straightforward and required little meta-cognitive ability. Similarly, Zohar and David (2008) applied a meta-cognitive intervention with older science pupils aged 13-14. They specifically focused on a sub-component of meta-cognition, that of meta-strategic knowledge which they defined as “*general, explicit knowledge about thinking strategies*” (Zohar & David, 2008:59). Students in the intervention group showed a significantly higher increase in strategic and non-strategic knowledge compared to the control group.

Furthermore, students who had been classified as ‘low achieving’ improved their skills to almost the same level as the high achieving students. Spanning both science and literacy, Michalsky, Mevarech and Haibi (2009) applied a meta-cognitive intervention to assist children with their understanding of scientific texts. Those students who received the intervention after reading outperformed all other groups. As this thesis is primarily concerned with the area of meta-cognition and self regulation in language education, the empirical research in this area will now be considered.

Interest in language learning strategies has grown since the mid-1970s (Chamot & Kupper, 1989; Cohen, 1996; Cohen & Macaro, 2007; Macaro, 2006; Nisbet & Shucksmith, 1986; O’Malley et al., 1985, 1989; Oxford, 1990, 2011; Oxford & Nyikos, 1989; Rubin, 1975). In the Second Language Acquisition literature, among different types of learning strategies, meta-cognitive strategies have been reported to play a more important role than other strategies in the successful language learning; these strategies help learners to regulate their own learning, and to accomplish different language tasks in different contexts effectively (Pintrich, 2002). Researchers unanimously claim that good language learners use a wide variety of effective techniques and tactics to perform their learning tasks in a given situation. Researchers were also interested to focus on how language learners manage to use a plethora of strategies to perform different tasks within different contexts (Ellis, 1994; Hsiao & Oxford, 2002).

Research on meta-cognition indicates that meta-cognitive strategy/knowledge is closely related to success in Second/foreign language learning. Learners who are equipped with meta-cognitive strategies, are aware of their learning and they know how and when to

employ the most relevant strategies to accomplish a given task. In short, they know how to accomplish a particular task in the most effective way. They plan their learning in advance, monitor their learning during the task performance, and evaluate their learning after task accomplishment (Zhang & Goh, 2006). Furthermore, learners who are meta-cognitive in their learning seem to be more self-regulated learners.

Numerous studies have demonstrated that the instruction of meta-cognitive strategies helps learners to become more self-regulated, self-directed and successful in their learning (Goh, 1997; O'Malley & Chamot, 1990; Vandergrift, 2002, 2003). In 1998, O Malley, Russo, Chamot, and Stewner-Manzanares, conducted a study in the US to identify different kinds of strategies used in the ESL classrooms and to investigate the relationship between the task and the proficiency level of the ESL students. Both students and teachers were interviewed regarding the English learning strategies used in the classrooms. From the interview, three categories of strategy were identified: *meta-cognitive, cognitive and social affective* and the results revealed that meta-cognitive strategy was most applied (82.3%) by the students compared to other strategies.

In a nutshell, enhancing students' self-directed learning and autonomy has received considerable attention throughout educational institutions in recent years. Meta-cognitive instruction is an effective way to develop learner-centeredness and learner autonomy. Danuwong (2006), in her study investigating Thai students' and instructors' perceptions on the use of strategies across tasks and across disciplines in learning and teaching revealed the importance of all four meta-cognitive processes namely planning, monitoring, problem solving and evaluation strategies in learning English independently. The findings also

suggested that the explicit teaching of meta-cognitive strategies should be incorporated into the classroom practices particularly of those teaching English as a foreign language.

Likewise, the positive correlation between academic achievement and meta cognitive strategies has also been investigated in a research done by Zare-ee (2007). Data collected from 30 randomly selected EFL learners studying English Language and Literature at Kashan University, Iran, revealed the correlation between reading achievement and meta cognitive strategies used. MANOVA results showed that students at higher levels of reading ability use meta-cognitive strategies more often than less successful readers. The findings also suggest that the use of meta-cognitive strategies can account for variation in EFL reading achievement and need to be promoted by EFL teachers.

Apparently, across numerous tasks and settings, research has shown that learners with strong Self Regulated Learning and meta-cognitive skills do better than those who lack these skills (Azevedo, 2005; Pressley & Ghatala, 1990; Pressley & Harris, 2006; White & Frederiksen, 2005). In 2012, Garrido -Vargas investigated the relationship between Self Regulated Learning and academic achievement of Hispanic students in a Southern Arizona School district. The findings revealed that Self Regulated Learning is related to the academic achievement of students in reading, writing & Mathematics. Results of the study also found that motivation and learning strategies were significantly related to achievement.

Furthermore, researchers assert that the possession of a strong meta-cognitive knowledge base is critical to successful learning (e.g., Baker & Brown, 1984; Devine, 1993; Flavell, 1979; Kasper, 1997; Vandergrift, 2002; Xu & Tang, 2007). Learners who poses ample

cognitive knowledge: knowledge about themselves as learner, about the nature of the cognitive task at hand, and about appropriate strategies for achieving cognitive goals are considered as successful learners. In many cognitive activities related to language use, the employment of Meta-cognitive strategies found to be significant in facilitating language learning.

Yanyan (2010), investigated the role of meta-cognitive knowledge in the English writing of 120 non-English major freshmen in China found that the meta-cognitive knowledge and its three components, i.e., person knowledge, task knowledge and strategic knowledge, are all positively correlated with English writing performance. The results demonstrated that successful employment of meta-cognitive knowledge helps facilitate EFL learners' writing proficiency and cultivate their learning autonomy in English learning.

Bozorgian (2012) further reported on a small-scale study, which examined the impact of meta-cognitive instruction on listeners' comprehension. Twenty-eight adult, Iranian, high-intermediate level EFL listeners participated in a "strategy-based" approach of advance organization, directed attention, selective attention, and self-management in each of four listening lessons focused on improving listeners' comprehension of IELTS listening texts. A comparison of pretest and posttest scores showed that the "less-skilled" listeners improved more than "more-skilled" listeners in the IELTS listening tests. Findings also supported the view that meta-cognitive instruction assisted listeners in considering the process of listening input and promoting listening comprehension ability.

In a similar vein of study, Al-Alwan et. al (2013), explored meta-cognitive listening strategies awareness and its relationship with listening comprehension on a convenient sample of 386 tenth-grade EFL learners using two instruments: (a) Metacognition Awareness Listening Questionnaire (MALQ) (Vandergrift, Goh, Mareschal, & Tafaghodtari, 2006) and (b) a Listening Comprehension Test (LCT) developed by the researchers. The results revealed that while directed attention and personal knowledge fail to explain the variance in students' listening comprehension performance, problem solving, planning and evaluation, and directed attention are capable of explaining 56% of the variance in students' performance on the LCT.

Indisputably, the above-mentioned studies show support for the view that meta-cognition and self-regulated learning are significantly related to academic achievement. Understanding the important of meta-cognitive strategies and the role of learners' self regulation are consequently crucial as they have a great impact on language learning. In the next section, I will provide a review of the empirical studies related to self regulated learning and meta-cognition in the context of tertiary education in Malaysia.

2.8 Research on Meta-Cognition and Self Regulated Learning in Malaysia

Meta-cognitive and self regulated learning research within the context of tertiary education in Malaysia has two main directions: first, most of the studies attempted to understand how and when students use meta-cognitive strategies and self regulate in their learning; and the second direction highlighted the use of meta-cognitive interventions to improve

learning. A glance at literature reviews in the Malaysian context indicate the shallow nature of understanding the relationship between meta-cognition, self regulated learning and academic achievement.

A quantitative study done by Mohd Kosnin (2007) investigating the relationship between self regulated learning and academic achievement among 460 second –year engineering students revealed that self-regulated learning can be associated with academic achievement for these Malaysian undergraduates. Data reported from the Motivated Strategies for Learning Questionnaire (MSLQ) found that high achievers used self-regulated learning strategies more effectively than low achievers. The use of meta-cognitive strategies is likely to have played a significant role in achieving academic performance, because meta-cognitive skills facilitate students' ability to plan, observe and assess their performance.

Similarly, Saadiah Baharom., Ong, Eng Tek., Marzita Putih., Sopia Mat Yassin, NurulHuda Abd. Rahman & Muhamad Ikhwan Mat Saad, (2009), investigated the gender differences in self-regulated learning amongst 185 Malaysian science students (84 males and 101 females) as a whole, and by groups (e.g., students taking science, mathematics, and additional mathematics). Results indicated that successful learners have better self-regulatory learning, maintaining high levels of motivation and learning strategies. However, the gender effect was not significant across the two dimensions (i.e., motivation and learning strategies) in the group taken as a whole, in the mathematics group and in the additional mathematics group. It was also reported that gender effect was significant across the two dimensions in the science group where the girls reported a markedly higher level of self regulatory learning. These two studies supported earlier findings that high-achievers

utilize cognitive and meta-cognitive strategies more effectively to comprehend learning materials in contrast to low achievers (see Corno & Mandinach, 1983; Rahman & Philips, 2006; Zimmerman & Pons, 1986).

Likewise, a study conducted by Sa'adiah & Saemah (2010), also revealed the same findings. Results indicated that there are no differences in the use of meta-cognitive strategies based on gender and ethnic groups. However, there are differences in the use of meta-cognitive strategies among proficient and less proficient learners.

Meta-cognition also plays a significant role in reading comprehension and educational process. Findings based on the review of the literature along with analysis of the data are of great significance and can be advantageous to improve EFL learners' meta-cognitive reading comprehension skill. Meta-cognitive reading comprehension skill has a positive effect on learning a second language and learners can gain the skills they need for effective communication in English.

Tengku Nor Rizan and Nooreiny (2012), elaborates on the meta-cognitive reading strategies employed by a group of EFL undergraduates when reading academic texts at a public university. A quantitative research design is used to collect data from a group of 41 respondents. The findings showed that there is a range of moderate to high level of meta-cognitive strategy use among the undergraduates. Nevertheless, the results showed that the respondents are conscious of their process of constructing meaning from the reading text and they are able to utilize a wide array of these reading strategies to achieve comprehension. These findings support many other studies which assert that effective L2

readers, like their native counterparts, are aware of a multitude of meta-cognitive reading strategies available for use and these strategies will eventually helped them to become skilled readers.

More recent, underpinning by a social cognitive theory of self-regulation as a conceptual and theoretical framework, Azizah (2012), conducted a qualitative research to explore how English Language learners applied SRL strategies to complete language tasks. The study investigated the personal and contextual factors that act as facilitators and constraints of the participants self regulation. Based on multiple interviews conducted, several classroom observations and students' reflective diaries, the study suggested that personal and environmental factors have a great influence on students' self-regulated learning strategies used in language learning.

The review of the literature signifies that research on meta-cognition and self regulation carried internationally and in Malaysia specifically, has garnered a great deal of interest among academician and practitioners in language learning contexts. Based on the studies conducted, researchers attempt to understand and explain this psychological construct from various perspectives as research indicated that it has positive effects on students' academic achievement (achievement (Dckeyrel, Dernovish, Epperly, & Mckay, 2000; Dolianac, 1994). Furthermore, numerous theoretical and empirical studies suggest that meta-cognition is the central part of Self regulated learning.

While aspects of meta-cognition and self regulation have been linked to academic performance, very few studies have examined the relationship between these two constructs

towards learning achievement particularly in the Malaysian ESL learning context. Moreover, very little published literature on Metacognition and SRL in the Malaysian language learning context especially at tertiary education level. Most of the research in the literature has been carried out in the Western educational context and the applicability of the findings from the Western educational contexts to Malaysian ESL learners is of course questionable as it involves different learning contexts. Malaysia is a multicultural and multilingual country and Malaysian ESL learners have experienced a very different learning environment compared to Western learners who are the native speakers of English.

Many of the findings of international studies are based on the Motivated Strategies for Learning Questionnaire (MSLQ). The use of this questionnaire to investigate SRL may not completely portray SRL behaviours, and may not be able to fully capture contextual factors influencing students' self-regulation. Despite the new trend towards autonomy and self directed learning method of L2 learning, little emphasis has been placed on using meta-cognitive and self-regulated learning strategies in ESL classrooms and their relationship with L2 learning achievement. Furthermore, there is still a lack of empirical studies that focus on the role of meta-cognitive skills in enhancing language performance. Hence, this study focuses on a specific component of Meta-cognitive self regulated learning in ESL context. The focus is more on the meta-cognitive experiences and regulation processes in language learning and mainly on the meta-cognitive self regulated learning strategies employed by ESL learners in the language classroom.

For this doctoral research, I adopted forty meta-cognitive self regulated learning strategies from the existing literature (Danuwong, 2006; Zimmerman, 2003), and came out with a

new construct to specifically measure the use of meta-cognitive self regulated learning strategies among ESL learners. Meta-cognitive strategies are “strategies that learners use to exercise executive control, planning, arranging, focusing, and evaluation of their own learning process” (Wong, 2005). Basing on this definition, the researcher included two more important components, namely adjusting and evaluating, into the existing meta-cognitive and self-regulatory strategies components: planning, monitoring, and regulating, as suggested by Pintrich (1999).

It is worth conducting a study to see the extent to which Malaysian ESL learners use meta-cognitive self-regulated learning strategies and find out whether there is a relationship between meta-cognitive self-regulated learning strategy use and their L2 i.e., English learning achievement. The results of such a study will create an awareness amongst the ESL teachers and learners on the significance of such strategies and equip teachers with the necessary skills to help ESL learners to be more independent whenever they encounter difficulties in the target language. Therefore, assessing the correlation between meta-cognitive awareness and self regulated learning strategies used by students in language learning has merit for better understanding on how students deal with their learning processes. The current work, further contributes to previous studies by exploring the correlation between meta-cognition and academic achievement within a broader self regulated learning framework.

2.9 Chapter summary.

This chapter addresses the major theoretical and philosophical underpinnings of the current study. It includes a discussion of the inter-connections between the two key concepts in this field, namely the metacognition and self regulated learning in second language learning environment. The chapter presents models that broaden our understanding of metacognition and self regulation in the context of language learning. It describes the components of metacognition and how they are related to self regulation constructs. This chapter also provides reviews of studies that show the role of metacognition and self regulation in learning and instruction and discussion on the significant relationship between these two concepts strategies and the learners' academic achievements. Next, in chapter three, a proposed Meta-SRLS framework will be introduced. The proposed framework will provide more in depth understanding of meta-cognition and self regulated learning strategies in ESL context.

CHAPTER 3

A THEORETICAL FRAMEWORK FOR META- COGNITIVE SELF REGULATED LEARNING STRATEGIES IN THE ESL CLASSROOM

3.0 A Proposed Theoretical Framework for Meta-Cognitive Self-Regulated Learning in the ESL Classroom Context

Within the classroom setting, there are four universal assumptions regarding how learners can self regulate their learning. The first assumption suggests that learners can monitor and regulate their cognition, behavior and motivation. However, this assumption does not mean that learners will or can monitor and control their cognition, motivation and behavior at all times or in all contexts, rather that some monitoring, control and regulation is possible. A Self Regulated Learning perspective clearly recognizes that there are a number of related factors including individual differences and developmental constraints that can impede or interfere with individual efforts at regulation.

The second supposition assumed that students actively construct their own, idiosyncratic goals and meaning derived from both their prior knowledge and the learning context. Thus, students involve and engage in a constructive learning process. Thirdly, it is assumed that all student behavior is goal directed and self regulation includes the process of adapting and modifying behavior to achieve their learning goals. The last assumption suggests that self-regulatory behavior mediates the relationship between a student's performance, contextual factors , and individual characteristics. While these assumptions provide the foundation for most Self Regulated Learning theories (see Zimmerman & Schunk (2001); Winne, (2005),

for an overview), specific approaches have been predominant in research examining how students self-regulate their learning within the context of the classroom. Zimmerman's Self Regulated Learning theory is one of the most common theories in this line of research.

With a review of literature on the concepts and theories of Self Regulated Learning and strategy interventions to promote students' self-regulation in academic settings, and studies on language learning and instruction, this doctoral study presents a practical conceptual framework of Meta-SRLS in ESL learning context (see Figure 3). This framework intends to incorporate meta-cognitive strategies within the cyclic Self Regulated Learning processes. The framework though, is based on the four assumptions discussed in the previous sections and provides more details to how meta-cognitive SRL processes can enhance second language performance.

Grounded in the three cyclic Self Regulated Learning phases:- *forethought*, *performance* and *self-reflection* phases, the current study provides an organizing framework for meta-cognitive Self Regulated Learning principles that can be integrated into the second language learning context. The framework for Meta-Cognitive SRL strategies proposed in the current study was adapted from the model suggested by Zimmerman (2008). According to Zimmerman (1986), self regulated learners are "meta-cognitively, motivationally, and behaviorally active participants in their own learning process" (p. 308). He claims that "a meta-cognitively self regulated learner is a person who plans, organizes, self- instructs, self- monitors, and self –evaluates" (p. 308). Furthermore, in order to be self regulated, learners need to use three important processes: self-observation, self judgement and self

reflection which enable them to monitor and adjust their behaviors accordingly (Bandura, 1986).

Being inspired by the socio- cognitive view of self regulated learning suggested by Zimmerman, the study proposes four cyclical meta-cognitive processes: planning, monitoring, adjustment and evaluation, which I believe to have a significant influence in enhancing language achievement among ESL learners. This conceptual framework suggests that students' comprehension of their academic learning requirements emerge from their prior knowledge and social interaction with the learning environments. The framework in Figure 3 below suggests that meta-cognitive self regulated learning involves the interaction between learners' meta-cognitive knowledge and self regulation. Learners need to have a meta-cognitive knowledge in order for them to self regulate their own learning. Meta-cognitive knowledge involves the interaction between the three elements: learner's knowledge of himself/ herself as a learner, i.e. self-efficacy, motivation or interest; learner's knowledge of the tasks context such as the task demands or the information available during this task and learner's knowledge of general strategies that might be used to achieve one's cognitive goals.

According to Flavell (1979) during a cognitive process, an individual's meta-cognitive experiences are influenced by the meta-cognitive knowledge that they retrieve from memory, and an individual's meta-cognitive experiences can, in turn, shape the individual's meta-cognitive knowledge. In this model of meta-cognitive self regulated learning (*as shown in figure 1*), self-regulation is composed of three phases: forethought, performance control, and self-reflection which are intended to reflect to the common assumptions shared

by many SRL models. In the first phase, the student “sets the stage” for the upcoming learning task. Phase 1 involves planning and goal setting strategies as well as activation of prior knowledge of the task and context. Whereas phase 2 concerns various monitoring and adjustment processes that represent meta-cognitive awareness of the learners in completing task. At this stage, learners will ask several self monitoring -type questions such as: “Am I following my plan correctly?”, “Am I being distracted?”, and “What strategies can I use to help me keep working? At the adjustment stage, learners mentally review their performances and determine whether changes in behaviors or strategies are required. Finally, Phase 3 represents various types of learners’ self reflections and evaluations of the self, task or context.

In summary, the conceptual framework in *Figure 1* proposes that there are numbers of related meta-cognitive SRL strategies that ESL learners may use to regulate their cognition and enhance their language performance. The list of strategies were adapted from the existing literature (Zimmerman, 2000; Danuwong, 2006). These strategies are assumed to be potentially under the control of the learners although it is clear that some of these strategies may be used more implicitly without much thought or control (Zimmerman, 2000).

Most self regulation models assume a direct link between self -regulatory activities and outcomes such as achievement and performance (Wolters et al., 2003). A related review of findings in language-learning studies indicates that higher self-perceived proficiency in language skills is often associated with a greater use of learning strategies. An overview of the studies conducted in both academic and non academic learning contexts of SRL, show

that low and high performing learners can be distinguished from one another based on differences in their use of strategies and behavioral engagement in learning activities. Many of these studies provide empirical evidence that high achievers were better users of self-regulated learning than low achievers (see Kosnin, 2007; Mezei, 2008; Turan et al, 2010; Sardareh et al, 2012). Figure 3.1 below provides details of sub-strategies that will be used in the current study. These sub-strategies were adapted from categories existed in the literature.

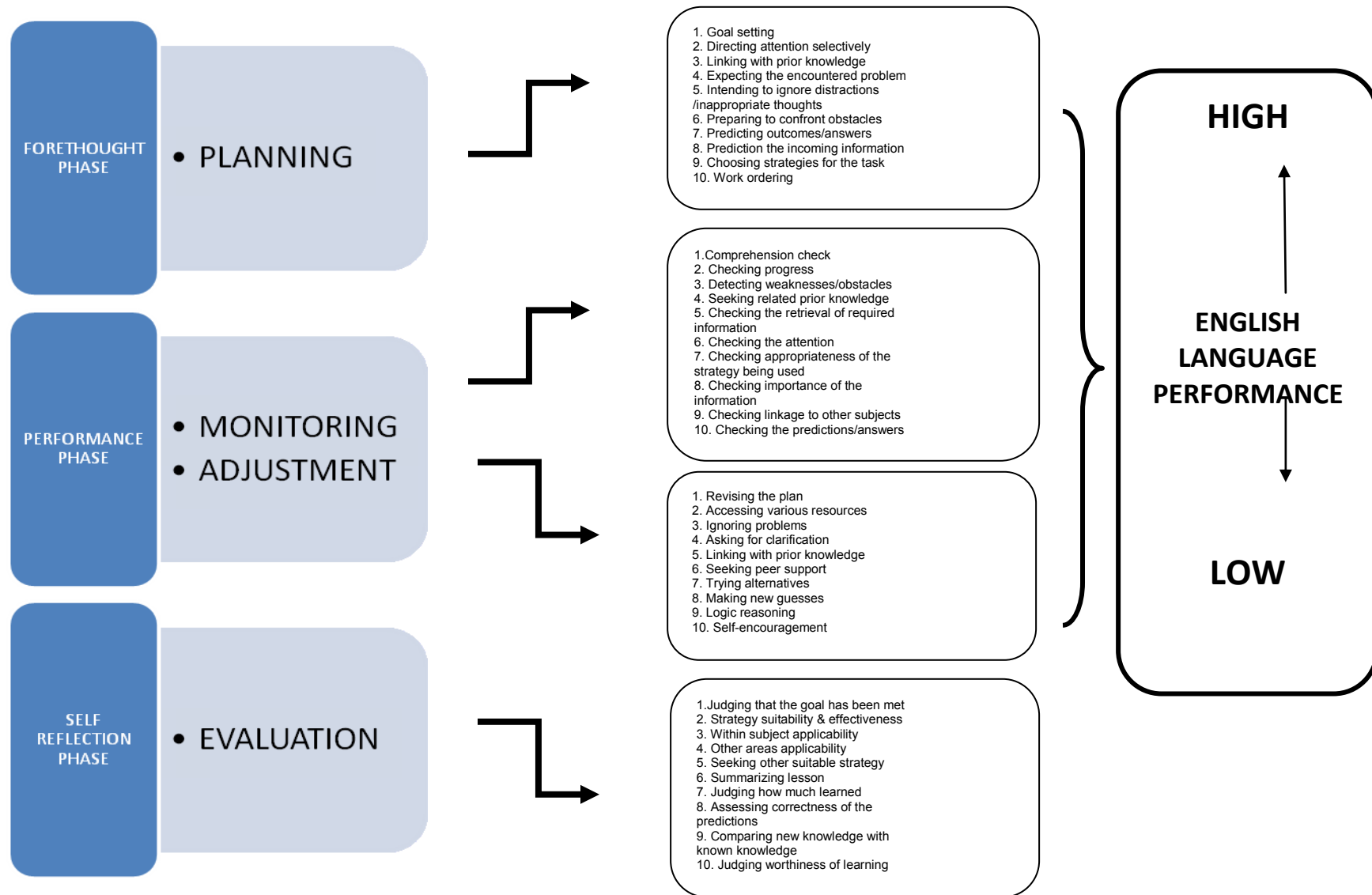


Figure 3.1: Conceptual framework of Meta-SRL Strategies in the ESL Context.

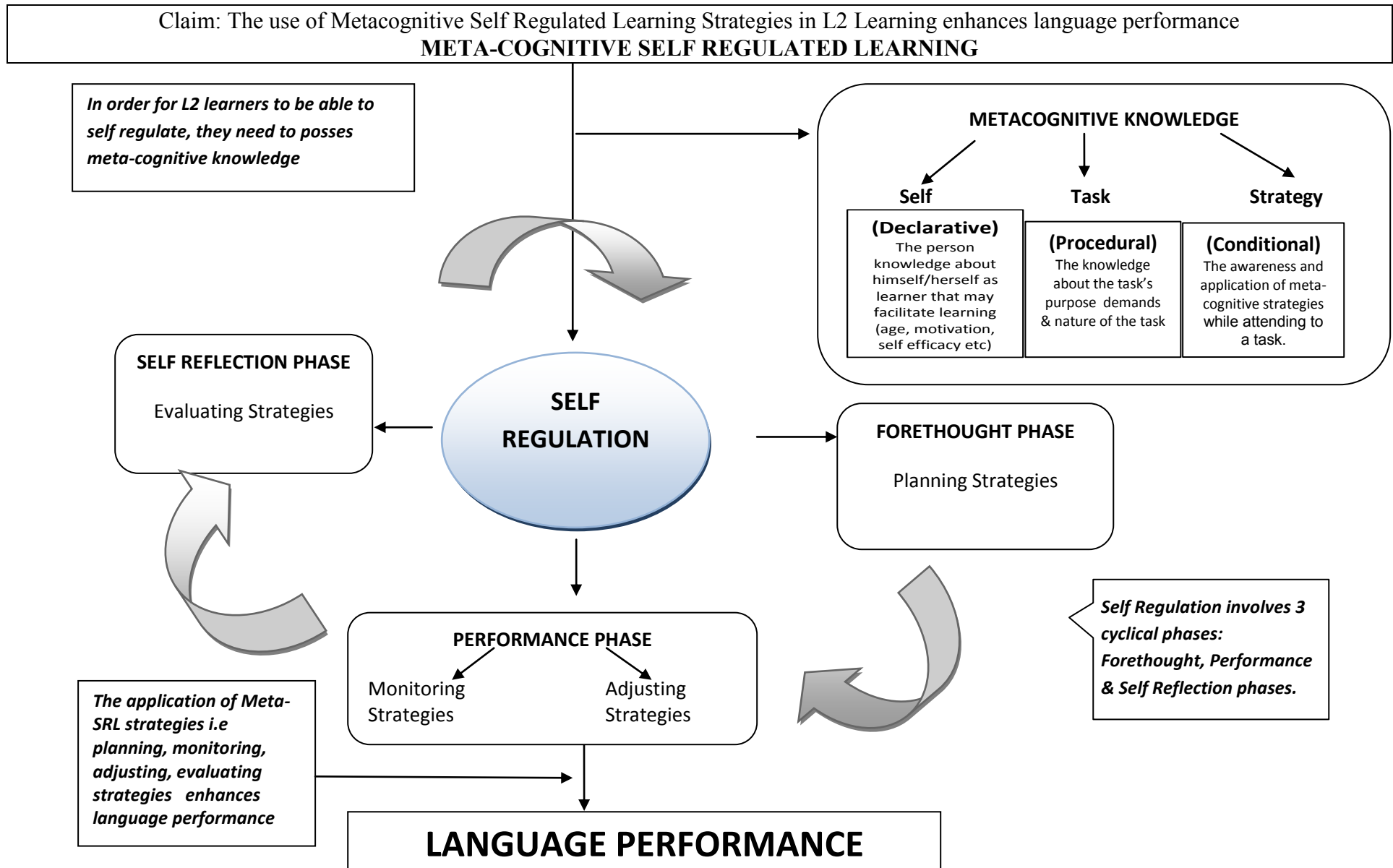
PHASE	META-COGNITIVE SRL STRATEGY	SUB-STRATEGY
FORETHOUGHT PHASE	Planning	1. Goal setting 2. Directing attention selectively 3. Linking with prior knowledge 4. Expecting the encountered problem 5. Intending to ignore distractions /inappropriate thoughts 6. Preparing to confront obstacles 7. Predicting outcomes/answers 8. Prediction the incoming information 9. Choosing strategies for the task 10. Work ordering
PERFORMANCE PHASE	Monitoring	1. Comprehension check 2. Checking progress 3. Detecting weaknesses/obstacles 4. Seeking related prior knowledge 5. Checking the retrieval of required information 6. Checking the attention 7. Checking appropriateness of the strategy being used 8. Checking importance of the information 9. Checking linkage to other subjects 10. Checking the predictions/answers
	Adjusting	1. Revising the plan 2. Accessing various resources 3. Ignoring problems 4. Asking for clarification 5. Linking with prior knowledge 6. Seeking peer support 7. Trying alternatives 8. Making new guesses 9. Logic reasoning 10. Self-encouragement
SELF –REFLECTION PHASE	Evaluating	1. Judging that the goal has been met 2. Strategy suitability & effectiveness 3. Within subject applicability 4. Other areas applicability 5. Seeking other suitable strategy 6. Summarizing lesson 7. Judging how much learned 8. Assessing correctness of the predictions 9. Comparing new knowledge with known knowledge 10. Judging worthiness of learning

Figure 3.2: A Conceptual Framework of Meta-SRL Strategies in the ESL Context.

As mentioned earlier in Chapter 1, although meta-cognition and self regulation are found to be useful in enhancing language performance and self regulated learning, very little studies have researched on these two areas specifically in the context of L2 setting in Malaysia. A review of the literature on learning show that there are hardly any documented records of studies on the learners' use of meta-cognitive self regulated learning strategies in the specific L2 setting in Malaysia. Hence, the researcher is strongly motivated to further investigate the usefulness of these learning strategies in enhancing performance, as most review of findings in language learning indicated a greater association between strategy usage and performances.

Therefore, there is a need for studies to explore students' use of meta-cognitive SRL strategies in specific English language learning.. The current study aims at identifying effective meta-cognitive strategies and sub-strategies that are being frequently used by the learners, and try to establish a connection with the theory of self regulated learning proposed by Zimmerman (2000). Previous findings show that low and high proficient learners can be distinguished from their different use of learning strategies and high performing learners were better users of meta-cognitive self regulated learning strategies (see Kosnin, 2007; Mezei, 2008; Turan et al, 2010; Sardareh et al, 2012). The following figure 3.3 explains the relationship between meta-cognition and self regulation constructs and learning processes and how these constructs and processes help ESL Learners to become more self regulated in their learning.

Figure 3.3: A Proposed Meta-cognitive self regulated learning strategy Framework for ESL learners.



The theoretical framework illustrated in Figure 3.3, suggests that learners learn the best when they are meta-cognitively aware of their own learning. Learners with metacognitive awareness are able to learn effectively by using a wide of SRL strategies. In other words, learners have to possess declarative, procedural and conditional knowledge for them to be successful in their learning. Being declaratively knowledgeable refers to the individual's beliefs about himself as a learner. This self knowledge includes the beliefs that learners have about themselves, their interests, the strengths and weaknesses of themselves as learners and also how they perceive other people's thinking processes. For examples, some learners may find that they are good at listening to lectures but some believe that they are learning better by doing or reading. It is very important to note that the personal knowledge of an individual about himself or herself as a learner may facilitate or may also impede performance in learning situations.

The Meta-SRLS framework proposed in this study suggests that meta-cognition includes not only the knowledge of cognition but also involves the regulation of cognition. Knowledge about cognition involves the reflective aspect of learning which corresponds to what students know about themselves, strategies and conditions under which strategies are most useful. While regulation of cognition controls the aspect of learning by corresponding to knowledge about the way students plan, implement strategies, monitor, make adjustment to errors and evaluate their learning.

The next category of meta-cognitive knowledge encompassed all the information about a proposed task that is available to a person (Flavell, 1979). This knowledge is known as task

knowledge or also known as procedural knowledge. Such knowledge guides the individual in the management of a task and provides information of how to perform tasks or procedures. In other words, procedural knowledge or the knowledge of task helps learners to use strategies in their learning.

Last but not least, the knowledge of strategies or conditional knowledge. This knowledge involves knowing the contexts and condition under which the knowledge of self person and task should be used or might be used. It is noted that the conditional knowledge or the knowledge of strategies help learners to identify which strategies might be the most effective to be used in fulfilling certain tasks.

Wenden (1998), emphasizes that meta-cognitive knowledge is an important component of meta-cognition as it determines the purposes, route and content of one's learning. Flavell (1979) further adds to this belief by claiming that meta-cognitive knowledge lead learners "to select, evaluate, revise and abandon cognitive tasks, goals, and strategies in light of their relationships with one another" (p. 908).

He further elaborates that students who are meta-cognitively aware of their learning will have a better focus and pay more attention on the most important aspects of the learning process that will help them achieve their academic goals. More specifically, it lends to the individual component of learner meta-cognition, influencing their self-efficacy for connecting to "general knowledge learners have acquired about human factors that facilitate or inhibit learning" (Wenden, 1998, p. 518). By combining meta-cognitive knowledge with

meta-cognitive strategies, students will demonstrate the ability to make full use of meta-cognitive abilities and this will definitely help them to learn more competently.

Anderson and Wenden (1998) both agree that students who demonstrate a variety of meta-cognitive abilities learn more competently. These students tend to be self-regulated, showing a strong commitment and positive attitude towards their learning. Through meta-cognitive awareness and knowledge, learners gain access to the knowledge of how and when to use particular learning strategies. By regulating themselves in meta-cognitive processes such as planning, monitoring, adjusting and evaluating, they control their own learning and achieve their learning goals effectively.

3.1 Chapter Summary

In conclusion, determining which strategies students use and how to measure their effectiveness in fulfilling language tasks is an important factor in language learning process. Meta-cognition and its components are part of internal learning procedure which found to have a strong influence in enhancing performance, although it is not easily observed. Therefore, this study takes this challenge to further investigate the effectiveness of the proposed theoretical framework (see figure 3.3) in the context of Second Language Education. The next chapter focuses on research methodology, and elaborates on the structure of the current study.

CHAPTER 4

Research Methodology

4.0 Overview of the chapter

This chapter describes the research design and methodology of the study. The chapter begins with the presentation of the research questions of the study, followed by a description of research methodology and research approaches employed in the study. Justification for the choice of multiphase mixed-method approaches to this research is also discussed in this chapter. This chapter elaborates on a detailed description of the research instruments, participants, data collection methods and data analysis procedures of the research.

4.1 Research Aims & Objectives: Revisit

In giving the rationale for the research methodology in this study, it is important to reiterate the aims and the main objectives of this study. As described previously in the first chapter, the main objectives of this study are four folds: First, it intends to develop a comprehensive Meta-cognitive Self Regulated Learning strategies (Meta-SRLS) framework that may be used to assess students' use of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) and support teachers in incorporating the strategies into their teaching. Secondly, the study will examine learners' use of Meta-cognitive Self Regulated Learning strategies

(Meta-SRLS) in English Language learning. Thirdly, the study will investigate the relationship between the use of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) and learners' English language achievement. And finally, this study will conduct an expert validation and review of the proposed Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) strategies framework as a framework for the teaching of Meta-Self Regulated Learning strategies.

As disclosed in the statement of problem in Chapter 1, there is a lack of a comprehensive Meta-cognitive Self Regulated Learning Strategies framework in English language learning context in Malaysia. This hinders the use of appropriate learning strategies among ESL learners and affects their English language performances. Hence, this study intends to seek answers to the following research questions posed in Chapter 1.

RO1. To develop a Metacognitive Self Regulated Learning Strategies (Meta-SRLS) framework that may be used to assess learners' use of Meta-cognitive Self Regulated Learning Strategies in English Learning environment; and

RO2. To evaluate the relevance of the Meta-SRLS Framework based on stakeholders' assessments.

From a broader perspective, this study represents an investigation of Metacognitive Self Regulated Learning Strategies for English language practices through the lenses of Malaysian stakeholders which involved the learners and also the experts in the related field.

The knowledge obtained from the research findings will contribute information about, and provide insights into the explicit definition of Meta-cognitive Self Regulated Learning Strategies framework sourced from the stakeholders and provide a clear and feasible Meta-cognitive SRL framework to be utilised in the English language classes at the tertiary education level in Malaysia.

4.2 Research Design

Hence, to delve deeper into the meta-cognition process and self regulated learning phenomenon, and to diminish the complexity of the investigation, this study employs a multiphase/ iterative mixed method approach in collecting data. A multiphase or iterative mixed methods design in this study incorporates a series of qualitative and quantitative studies (three qualitative and 1 quantitative). A QUAL-QUAL+QUAN - Qual multiphase design in this study is comprised of a qualitative study informing a qualitative review of the literature, followed by a second qualitative interview, and then a quantitative survey followed by a qualitative semi-guided interview design to explain the quantitative findings and finally, an interpretation of both quantitative and qualitative data findings.

According to Greene et al. (1989, p. 259) there are five rationales for conducting multiphase mixed method research: (i) Triangulation: Seeking convergence and corroboration of results from different methods and designs studying the same phenomenon; (ii) Complementarity: seeking elaboration, enhancement, illustration, and clarification of the results from one method with results from the other method; (iii)

Initiation: discovering paradoxes and contradictions that lead to a re-framing of the research question; (iv) Development: using the findings from one method to help inform the other method; and (v) Expansion: seeking to expand the breadth and the range of research by using different methods for different inquiry components.

In the current study, the purpose for the integration of multiple mixed methods research design is three folds: the first is, to alleviate the shortcomings of the one method with the other method; the second, to use one approach to confirm the results obtained by the other; and the third, to address different research questions (Bergman, 2008; Denzin, 1997; Maree, 2007; Onwuegbuzie et al., 2009).

Consequently, to explore and identify major elements that constitute the Meta-cognitive Self Regulated Learning strategies that may be useful in both ESL learning and teaching, the current study applies a *sequential multiphase mixed-method exploratory design*, which implies collecting and analyzing multiple qualitative and quantitative data in five consecutive phases within one study. The summary of the research design is shown in the following Figure 4.1.

Figure 4.1: SEQUENTIAL MULTIPHASE MIXED METHODS DESIGN

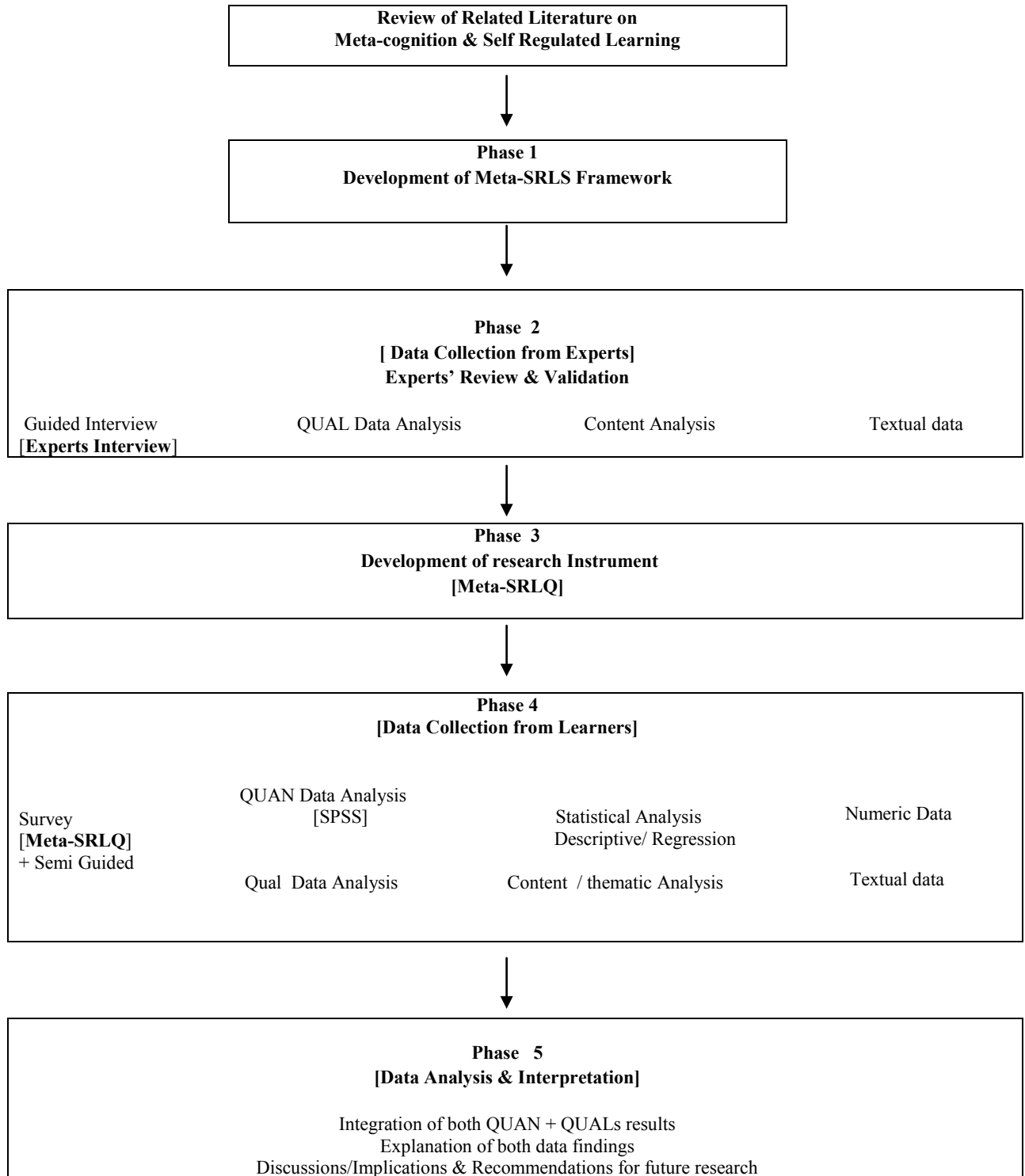


According to Creswell and Plano Clark (2011), in exploratory sequential design, the researcher first collects qualitative data and then quantitative data. The purpose of an

exploratory sequential mixed methods design involves the procedure of first gathering qualitative data to explore a phenomenon and then collecting quantitative data to explain relationships found in the qualitative data. The multiple qualitative data collection is employed in the study to delve deeper into the Meta-cognitive Self Regulated Learning phenomenon. The qualitative data in the current study will be gathered via systematic review of the literature to explore related theories and conceptual framework within the self regulated learning areas (see Figure 4.2 below).

Apart from the survey, interviews will also be conducted with the experts and participants of the study. Via interviews, selected experts in the field of L2 teaching and research contexts will be asked to assess and evaluate the effectiveness of the proposed Meta-Self Regulated Learning Strategy framework in terms of its relevance and impacts towards L2 teaching and learning. The participants who are involved in the study will also be interviewed to examine the Meta-cognitive Self regulated Learning strategies they use in the language learning. Figure 4.2 below depicts the multi-phase mixed method approaches that will be employed in the current study.

Figure 4.2: Multi-phase Mixed-Method Data Collection Procedure



As shown in Figure 4.2 above, the use of ‘expert review’ technique in the study is important as it enhances the reliability and validity (see Bogner and Menz, 2009) of the proposed framework and instrument being used in the current study. Moreover, the evaluation by the experts in the field under review is the predominant method used for research evaluations, and normally seen as an ‘unavoidable’ method which cannot be replaced by quantitative methods (Langfeldt, 2002 p.16). The experts’ opinion and feedbacks are needed as to cross check how well the framework meets the objectives of the study. In fact, the validation process and the framework itself contribute towards a better understanding of Meta-cognitive Self Regulated Learning processes in language learning.

The use of multiple data collection approaches such as questionnaire survey, and semi-structured interviews and experts review as discussed earlier in this section are seen as the most appropriate methods for gaining an in-depth understanding of the learners’ meta-cognitive behaviors and self-regulation in the context of this study. In the mean time, it provides more insights into the construction of the Meta-Cognitive Self Regulated Learning Strategies framework.

The development of phase 1 in the study aims at providing answers for the first research question whilst the qualitative data collection in phase 2 provides answers to research question 2. In phase 4, both quantitative and qualitative data tools (i.e. survey and semi guided interviews) will be employed to seek answers to research questions 3, 4 and 5.

4.2.1 PHASE 1

4.2.1.1 The Development of Meta-cognitive Self Regulated Learning Framework.

The initial development of the framework started by exploring the literature related to meta-cognition and self regulated learning spanning from the 1970s, particularly as it relates to the English language learning context. Over the last two decades, several research studies have focused on investigating meta-cognition in Foreign /second language learning (Plonsky, 2011; Goh, 2008; Wenden, 1998; Carrell, 1998; Taylor et al., 2006; Chamot, 2005). Electronic databases were employed in order to collect all possible research studies on meta-cognition and self regulated learning in the realm of second language learning. The research was carried out online and incorporated the combinations of the following key terms: self regulated learning, meta-cognition, socio-cognitive theory, meta-cognitive awareness, learning strategies, and second language learning.

The initial research incorporated reviews of more than 30 articles from professional journals. These journals include *Procedia - Social and Behavioral Sciences*, *TESL-EJ*, *International Journal of Language Learning and Applied Linguistics World (IJLLALW)*, *Journal of educational psychology* 94(2), *The modern language journal*, 73(3), *Annual review of applied linguistics*, 25, *American educational research journal*, 23(4), *Canadian Journal of Applied Linguistics/Revue canadienne de linguistique appliquée*, 11(2), *Journal of Asian Scientific Research*, 3(6), *Malaysian Journal of Learning & Instruction*, 9, *ELT journal*, 51(4), *Language Learning Journal*, 18(1), *Contemporary educational psychology*, 25(1), *World Applied Sciences Journal*. 11 (10), p. 1238-1247. *International*

Journal of Humanities and Social Science. 2 (5), and many more. All these papers were further reviewed and analyzed in detail to meet the following criterias for the review:

1.What field of social sciences are treated within the area of meta-cognition and self regulated learning; 2. Theoretical and empirical research findings within the area of meta-cognition and self regulated learning.

A narrative review of selected literature was also used in order to identify key theories, models and frameworks used within the subject being study. The narrative review approach was applied to determine the theory basis and identify the SRL and meta-cognition models used in this study. As a result, the Theory of Cognitive Meta-cognition by Flavell (1979) and Brown's Theory of Meta-cognition (1987) as discussed earlier in chapter 2 were used to guide the study.

Furthermore, the constructs of the Meta-cognitive Self Regulated Learning Strategy (Meta-SRLS) framework in the current study were adapted from the three models of Self Regulated Learning developed by Zimmerman. These models include the Triadic Analysis of Self Regulated Learning, which represents the interaction of three forms of Self Regulated Learning: environment, behavior and personal level (Zimmerman, 1989). This model describes how Self Regulated Learning could be envisioned within Bandura's triadic model of social-cognition. In the second model, the Cyclical Phases of Self Regulated Learning are presented, which explains the interrelation of meta-cognitive and motivational processes at the individual level. Finally, the third model, which recently has been called

the Multi-Level model, represents the four stages in which students acquire their self-regulatory competency (Zimmerman, 2000).

With a review of literature on the concepts and theories of Self Regulated Learning and strategy interventions to promote students' self-regulation in academic settings, and studies on language learning and instruction, this study further presents a practical example of a conceptual framework (refer to Figure 3 in chapter 3) which seeks to integrate meta-cognitive strategies within the cyclical Self Regulated Learning processes. The Meta-cognitive Self Regulated Learning Strategy (Meta-SRLS) framework proposed in this study denotes a structure and plan consisting of various Meta-cognitive Self Regulated Learning Strategy constructs and variables, and the relations between them that are presumed to account for the Meta-cognitive Self Regulated Learning phenomenon in L2 context. The framework further suggests that Meta-cognitive Self-Regulated learning involves the interaction between learners' meta-cognitive knowledge and self regulation as exemplified in the theory of metacognition and self regulated learning introduced by Flavell (1979) and Zimmerman (2008).

4.2.2 PHASE 2

Data Collection from the Experts

4.2.2.1 The use of Expert Interview Approach in collecting data.

Research on the development of expertise suggests that experts have extensive knowledge in their subject area, which helps them in perceiving meaningful patterns quickly. It

improves their analysis of problems, which are represented at a deeper level enabling them to “get to the heart of the matter” speedily. In the current study, the researcher conducted interviews with the experts in the language learning and teaching fields to further validate the content of Meta-cognitive Self regulated Learning (Meta-SRLS) framework proposed in the study. The expert interview has become very popular as a ‘streamlined’ method (Bogner & Menz, 2002a, pp. 9-10). It is a method of qualitative empirical research designed to explore expert knowledge on certain area. According to Michaela Pfadenhauer (2009), expert interviews are a particularly appropriate method in research aimed at reconstructing explicit expert knowledge.

This kind of interview method owes its prominence in empirical social research, as a frequently employed instrument for the collection of data, to its function as an exploratory tool. In both quantitatively and qualitatively oriented research projects, expert interviews can serve to establish an initial orientation in a field that is either substantively new or poorly defined, as a way of helping the researcher to develop a clearer idea of the problem or as a preliminary move in the identification of a final interview guide (Bogner and Menz, 2009, p. 46). In this sense, the exploratory interviews with the experts, help the researcher to structure the area under investigation as the practical consequences of their expert knowledge will be responsible for the planning and improvisation of the proposed framework. Moreover, their feedback, comments and views will be a privileged access to refine and revise the proposed framework.

As mentioned in the previous discussion, the framework was verified by expert researchers/instructors with specialization in L2 education with two of them having more than 25 years of experience in second language teaching. They reviewed the content and underlying principles of the framework and provided comments and feedback, regarding its relevance to the L2 learning strategies and its congruence with the tenets of L2 learning. Next, the framework was modified based on their feedback and recommendations; the layout of the framework elements was revised and some words and phrases were singled out as they were perceived to be ambiguous or difficult, and hence replaced with more appropriate words.

4.2.2.2 Selection of Panel Experts

According to Walter (1994), a person is attributed as an expert by virtue of his role as informant. In a pragmatic perspective, a person is identified as an expert based on the researcher judgment. In scientific research, an individual is addressed as an expert because the researcher assumes – for whatever reason – that she or he has knowledge, which she or he may not necessarily possess alone, but which is not accessible to anybody in the field of action under study (p.271).

The selection of participants for the expert interviews in the current study is grounded by the constructivist view from experts. In this study, the interpretation of ‘experts’ refer to those who demonstrate strong pedagogic content knowledge (a knowledge of method, including knowledge growth that specific to the subject matter i.e. language learning context) associated with learning and teaching experiences (Nind et al. 2015). In the case

of this study, for the purpose of sharing pedagogic experience and insight, participants with both teaching and methodological expertise who could share their pedagogical content knowledge were selected. Within higher education, expertise is notable for its social aspect, developed with and judged by peers (Wray and Wallace, 2011). Recognition of expertise by peers must also coexist with the procedural knowledge, theoretical expertise and practical skills accumulated through ongoing experience in language teaching and learning context.

This study employs a purposeful sampling design in selecting the experts for the interview. The target experts are selected based on subject matter expertise within the field of language education specializing in second language learning at Malaysian higher education institutions. According to Zikmund (2003), a purposeful sampling can be defined as a non-probability sampling technique in which an experienced individual selects the sample based on his or her judgement about some characteristic required of the sample members. The selection of the experts in this study is not for a demographic representative, but instead for the perceived subject matter expertise that they could contribute to the topic (Hatcher and Colton, 2007). The initial selection subsequent to the identification of individual expert was based on their knowledge and expertise and their participations were on a voluntary basis. The invitation to the expert participants was done via email. Consent was elicited using a plain statement and an informed consent form.

All selected expert participants met the following criterias:

- i. Employed in the capacity of researcher, lecturer or language practitioner at tertiary education level
- ii. Experienced in language teaching for more than 5 years.
- iii. Engaged as a current instructional designer or academic teaching/ course coordinator of undergraduate language courses or programs
- iv. Involved with course design, or syllabus development.

Twelve (12) senior academics and scholars from different higher institutions in Malaysia, with significant teaching experience in second language learning education at undergraduate and postgraduate level whose expertise was remarkably recognized were selected. There were five males (42%) and 7 females (58%) panel experts and a total of six panel experts held Master's degrees in a relevant field of linguistics and language education and six panel members had PhD qualifications in the related field of study. Four panel experts (33.3%) had 6-7 years teaching experience at tertiary education level, and six panel experts (50.1%) held 8-15 years' of teaching experience. Two panel experts (16.6%) were employed for more than 15 years. Table 4.1 below summarizes the demographic distribution of the panel experts. The profiles indicate that majority of the panel members were well-qualified language practitioners with experience in higher education level and thereby could contribute a professional and experts' opinions.

Table 4.1: Demographic Distribution of The Panel Experts.

Ref no.	Pseudonym	Position within organization	Gender	Years in current role
1.	Azman	Senior lecturer in academic development	male	8-15 years
2.	Tisha	Senior lecturer in academic development	female	8-15 years
3.	Liza	Senior lecturer in academic development	female	8-15 years
4.	Rizal	Lecturer in academic development	male	6-7 years
5.	Mokhtar	Senior lecturer in academic development	male	8-15 years
6.	Anis	Language Program Coordinator	female	6-7 years
7.	Mas	Lecturer in academic development	female	6-7 years
8.	Robert	Associate professor in academic development	male	15+
9.	Lee	Senior lecturer in academic development	male	8-15 years
10.	Avantika	Senior lecturer in academic development	female	8-15 years
11.	Sally	Language course coordinator	female	6-7 years
12.	Hashima	Professor in academic development	female	15+

As explained in the previous section 4.3.2.2, the expert interview was aimed at evaluating, rating and validating the Meta-cognitive self regulated learning strategy (Meta-SRLS) framework proposed in the study. The expert interview approach in the study was to elicit perceptions held by experts on the appropriateness of the constructed Meta-cognitive Self Regulated Learning Strategy framework (Meta-SRLS) and the effectiveness of its application into the L2 teaching and learning, as well as to deepening our understanding and knowledge of the constructs and contents of the framework.

The framework was specifically reviewed in terms of such five standard evaluation criterias as:-

- i. Relevance;
- ii. Effectiveness;
- iii. Efficiency, and
- iv. Impact.

The interview questions consists of 9 -item questions guide including one open-ended discussion at the end of the interview that served to include any further comments or issues pertaining to the framework that the expert participants would like to raise. The interview findings will be discussed further in chapter 5.

4.2.3 PHASE 3

Development of Meta-SRLQ

4.2.3.1 Research Instruments (Quantitative Data)

Meta-Cognitive Self Regulated Learning Strategies Questionnaire (Meta-SRLQ)

The most commonly used instrument within the framework of self-regulated learning is the Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich, Smith, Garcia, and McKeachie (1991). However, this instrument has been designed for studies carried out within the framework of general education. Therefore, there is a need for a scale that specifically gives emphasis on meta-cognition processes applied by learners and can

adequately measure the Meta-cognitive Self Regulated Learning behaviors of ESL learners in Malaysia. The rationale for choosing questionnaire survey as the quantitative data collection tool in this study is that because this type of instrument offers a high reliability and it may be easy to be quantified and analyzed and cost the least time to collect and analyze (MacKey & Grass, 2005).

Borrowing insights from the theoretical discussions on Self Regulated Learning, the researcher reviewed the learning strategies listed in the existing literature and constructed an improvised version of the questionnaire scale namely Meta-Cognitive Self Regulated Strategies Questionnaire (Meta-SRLQ) to measure the participants' use of Meta-cognitive Self Regulated Learning Strategies in the L2 learning environment. The list of Meta-cognitive Self Regulated Learning (Meta-SRL) strategies used in the current study was adopted from the existing studies in this field (Chamot, Barnhardt, El-Dinary and Robbin (1999); Mitchell (1995); Huitt (1997); Halter (2000) and Kujawa and Huske (1995); Danuwong (2006); Azizah (2012) . These strategies were then reviewed and classified into their categories. As for this study, the strategies were classified into four main categories namely Planning, Monitoring, Adjusting and Evaluating strategies.

Information on the strategies used by the participants in the current study were elicited via a pool of 40 questionnaire survey items that were constructed based on the four meta-cognition processes of planning, monitoring, problem solving and evaluating strategies in the context of ESL learning environment. These items were adapted and re-designed from a list of meta-cognitive strategies suggested by Danuwong (2006) in order to collect

learners' responses of their meta-cognitive Self Regulated Learning behaviors in the ESL classrooms. A five-point *Likert* frequency rating such as 'always use it', often use it', rarely use it', and never use it" (see appendix for list of strategies/sub-categories) was applied in the questionnaire. Each category contains 10 items and participants were asked to indicate their level of agreement on the use of the strategies in completing their language tasks. The following table 4.2 shows examples of items included in the questionnaire.

Table 4.2: Examples of items in Meta-SRLQ

LEARNING STRATEGIES	FREQUENCY OF USE IN ENGLISH LANGUAGE LEARNING				
	5 always use it	4 often use it	3 some times use it	2 rarely use it	1 never use it
1. I set my own learning objectives before completing a language task.					
2. I identify in advance the aspects of information to look for, and focus on that particular information throughout the course.					
3. I decide what is already known about the subject, topic, or issue that will be helpful.					
4. I identify problems that might be encountered in the tasks.					
5. I decide in advance to ignore mental, physical and environmental distractions.					
6. I check in advance personal comprehension of the instruction, lecture, and materials and ask for further information if necessary.					
7. I make predictions what to get out of listening/reading or answers of the questions.					
8. I anticipate what information or event will occur next.					
9. I think in advance about strategies and tactics that I can use to understand the subject, topic or issue.					
10. I try to find out what can be done in sequence to make lectures or texts understandable.					

In addition, some demographic questions were also included at the end of the questionnaire to obtain participants background information relevant to their involvement in this study (i.e., gender, age, language grade). In order to avoid language barrier, all the questions in the Meta-SRLQ are available in both English and *Bahasa Melayu*. The items in the questionnaire are summarized in the following Table 4.3.

Table 4.3: The constructs within the Meta-Self Regulated Learning Questionnaire (Meta-SRLQ)(adapted from Danuwong's (2006) *Meta-cognitive list of strategies*)

Meta-cognitive SRL Strategy	Subscales	Item(s)
Planning Strategies	1. Goal setting 2. Directing attention selectively 3. Linking with prior knowledge 4. Expecting the encountered problem 5. Intending to ignore distractions /inappropriate thoughts 6. Preparing to confront obstacles 7. Predicting outcomes/answers 8. Prediction the incoming information 9. Choosing strategies for the task 10. Work ordering	1 2 3 4 5 6 7 8 9 10
Monitoring Strategies	1. Comprehension check 2. Checking progress 3. Detecting weaknesses/obstacles 4. Seeking related prior knowledge 5. Checking the retrieval of required information 6. Checking the attention 7. Checking appropriateness of the strategy being used 8. Checking importance of the information 9. Checking linkage to other subjects 10. Checking the predictions/answers	11 12 13 14 15 16 17 18 19 20
Adjusting Strategies	1. Revising the plan 2. Accessing various resources 3. Ignoring problems 4. Asking for clarification 5. Linking with prior knowledge 6. Seeking peer support 7. Trying alternatives 8. Making new guesses 9. Logic reasoning 10. Self-encouragement	21 22 23 24 25 26 27 28 29 30
Evaluating Strategies	1. Judging that the goal has been met 2. Strategy suitability & effectiveness 3. Within subject applicability 4. Other areas applicability 5. Seeking other suitable strategy 6. Summarizing lesson 7. Judging how much learned 8. Assessing correctness of the predictions 9. Comparing new knowledge with known knowledge 10. Judging worthiness of learning	31 32 33 34 35 36 37 38 39 40

4.2.4 PHASE 4

Data Collection from Learners

This section provides information on the participants who are involved in the study and also the data collected from the participants. Apart from that, the research setting is also described in this section.

4.2.4.1 Research Participants

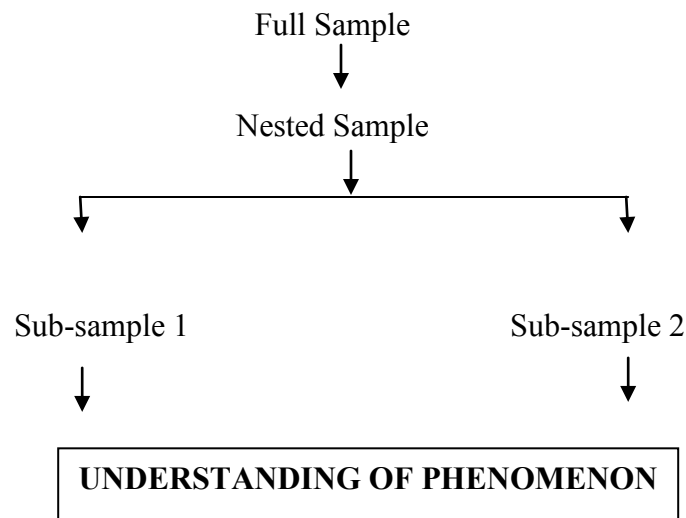
A total number of one hundred and eighty (180) students in Foundation English Course for semester 1 of the 2013/2014 academic year were selected as the sample participants for the current study. The students were randomly chosen and were assumed to be the representatives of ESL population for the research. Initially, a total number of two hundred (200) survey questionnaires were distributed, however, only 180 questionnaires were considered valid for this study as some were not returned and some were incomplete.

4.2.4.2 Sampling Method

It is important to discuss the nature and the main objective of the qualitative research design employed in the current study. It is clear that the main objective of gathering qualitative data in the study is to provide an in- depth understanding of Meta-SRL phenomenon in ESL context through the eyes of the learners being studied. Thus, a non-probabilistic, purposive nested sampling approach was adopted in the current study. According to Brink (1996), a sampling method is the process of selecting the sample from a population in order to obtain information regarding a phenomenon in a way that represents the population of interest. In purposive sampling, the participants are selected according to

pre-determined criteria relevant to a particular research objective (Brink, 1996). In the current study, a purposive sampling method was chosen as the most appropriate method because of its convenient and economical than any other sampling methods. The following Figure explains the flow of sample selection in collecting qualitative data in the current study.

Figure 4.3: The flow of nested sampling designs



In the current study, the researcher adopted a nested sampling design to make selection of the key participants for the interview sessions. These nested samples were chosen based on the attributes drawn from the quantitative data findings. The key participants, who were selected from the overall set of research participants, provided a significant part of the research data as their voices helped to attain data saturation. Findings from the key

participants were then used to make both internal and analytical generalizations to gain more in depths information on the strategies used by these groups of learners.

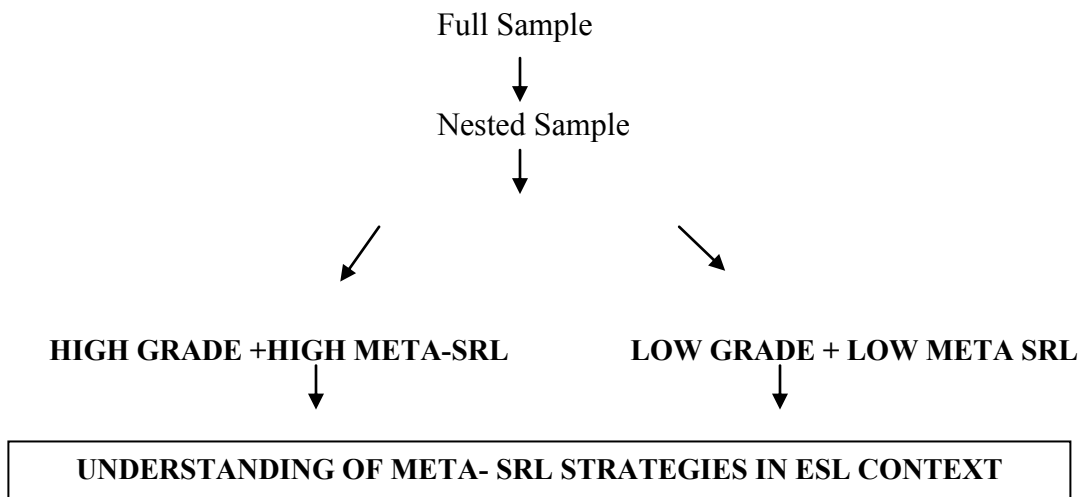
However, like any other methods, this sampling method does have its disadvantages as it does not contribute to generalization. This is one of the drawbacks of this method that the researcher has to take into consideration. The researcher is fully aware that non-probability methods contribute more to internal validity than external validity as the interpretation of results was limited to the population under study. As the current study was done in the Northern part of Malaysia and involved a very small population, it was expected that the findings of this study might not be similar with other studies in other regions, cultural groups or socio-economic circumstances. Therefore, as suggested by Bernard (2002), it is very important to state the bias clearly when the results are analyzed and interpreted so as not to mislead people into inferring general conclusions. However, the study may be repeated for confirmation in a different population, using the same non –probability method for the results to be valid over a greater generalization.

Consequently, some measures were taken to ensure reliability and validity to minimize bias. The danger with the purposive sampling methods is that the researcher exercises his or her own judgment on the participants' reliability and competency. It is critical to be certain that the selected participants meet the pre-determined criteria, as inappropriate participants will render invalid and meaningless data.

In the study, the suitable participants were identified using both their Meta-SRLQ scores and also their final English grades. Once the appropriate participants were identified, they were contacted through phones to get their consents and to make an arrangement for the interview sessions. As resulted from the quantitative data findings, the participants were classified into two categories:-

- (i) Participants who obtained HIGH English grade and HIGH Meta-SRL Strategies, and
- (ii) Participants who obtained LOW English grade and LOW Meta-SRL Strategies.

Figure 4.4: The Flow of Nested Sampling Designs In The Current Study



These categories are pertinent to the research questions proposed in the study as they sought answers to explore the strategies used by different ESL Learners while learning English. Based on the quantitative responds provided by the participants, the researcher classified the samples into the two above-mentioned categories. In part, the classification of these categories is significant to the main objective of the study as it provides an in-depth understanding of the learning strategies used by the participants when learning English. It is

hoped that by narrowing the categories into these two clusters, more information can be gained throughout the study to understand the similarities and differences of strategies used by these two different groups of learners.

4.2.4.3 The Interviewee Profiles

Based on the final language grade obtained by the participants, as well as their Meta-SRL strategies scores reported in the quantitative data, I have identified the sample participants into the following groups:

- i. Participants who obtained HIGH English grade and HIGH Meta-SRL Strategies.
- ii. Participants who obtained LOW English grade and LOW Meta-SRL Strategies.

In collecting the qualitative data, the interest is not primarily on knowing how many or how often one has had a particular experience of using meta-cognitive strategies. The main objective is to look for in depth information that can be used as a concrete evidence to corroborate the quantitative findings which have been collected previously. In this sense, the interviews are intended to add a qualitative dimension stated mainly in the form of ideas, opinions, beliefs or reactions, to the quantitative data obtained from the questionnaire. Furthermore, it also functions as a form of “data triangulation” to check whether it yields any similar findings.

As stated by Stake (1995), in a qualitative research, “the uniqueness of individual cases and context is as important to understanding the phenomenon”. Moreover, the participants’

meta-cognitive self regulatory activities are seen as “mediators between personal and contextual characteristics and actual achievement or performance” (Pintrich, 2004, p. 388). It is interesting enough to acknowledge that, “the main intention of qualitative interview is not to compare cases/ units but to get access to actions and events that are viewed as relevant for the research/ study. Moreover, to generate a deeper understanding on the use of strategy among learners, access to the single respondent and the way he or she views the world is regarded as central.

It is understood and clearly described in the previous chapter that the main objective of qualitative data in the current study is more towards particularization rather than generalization (Stake; 1995). To add into this point, Crouch & Mc Kenzie (2006) claimed that qualitative research is concerned with meaning and not making generalized statements, therefore, one occurrence of a piece of data or a code , is all that is necessary to ensure that it becomes part of the analysis framework.

Crouch & McKenzie (2006), propose a practical reason for having less than 20 participants in a qualitative study. They agree that less than 20 participants helps researcher build and maintain a close relationship and thus, improve the “open” and “frank” exchange of information. To add, this can help to mitigate some of the bias and validity threats inherent in qualitative research. However, Boyd (2001) and Guest et al. (2006) argue that less than 10 participants are sufficient enough to reach saturation and for studies with a high level of homogeneity among the population “ a sample of six participants may (be) sufficient to

enable development of meaningful themes and useful interpretations”, (Guest et al. 2006 p.78).

In line with what recommended by these researchers (Boyd, 2001; Guest et al. 2006), twenty participants were selected for the interview sessions. Ten participants from each category were chosen based on their Final English Language Grades. The researcher selected the sample based on her judgement and the purpose of the research, (Babbie, 1995; Greig & Taylor, 1999; Schwandt,1997), looking for those who “have had experienced relating to the phenomenon to be researched”, (Kruger,1988 p.150).

As the main objective of the current study is to find out what kind of Meta-cognitive Self Regulated Learning Strategies applied by the ESL learners and whether there is a significant correlation exist between the use of strategies and their English language achievement, therefore, the researcher strongly believed that twenty participants would be sufficient enough to shed further lights into the issue under investigation. The following table 4.4 shows details of the participants involved in the interview sessions.

Table 4.4: Demographic Details of Interview Participants Based On Questionnaire Survey.

RESPONDENT	High level			Low level		
	Gender	Age	Meta-SRL scores	Gender	Age	Meta-SRL scores
1	M	20	4.15	M	20	3.35
2	F	20	4.20	F	20	2.90
3	F	20	4.20	F	20	3.19
4	F	20	4.52	F	20	3.22
5	F	20	4.60	F	20	3.17
6	F	20	4.80	M	20	3.22
7	F	20	4.12	F	20	3.05
8	F	20	4.40	F	20	2.87
9	M	20	4.25	F	20	3.19
10	M	20	4.20	F	20	3.22

All the twenty participants gave their written consents to participate in the interviews. The Meta-SRLQ scores of the participants for both levels were obtained through the questionnaire survey. The saturation theory was generally employed as a guiding principle throughout the interpretation of the interview data. Data collection (interviews) continued until the topic was saturated. The concept of saturation as described by Glaser & Strauss (1967), occurs when there were no more new insights or perspectives provided by the participants on the topic.

The interviews were conducted after an appointment was made with the selected participants and took place in a classroom that was familiar to them. The first five minutes of the sessions were spent on building a rapport with the participants. It was important to make them feel more comfortable and relaxed before they started the sessions. They were also being given a brief explanation on the purpose of the interview and how they could possibly provided their responses.

During the interview sessions, the participants' answers to the Meta-SRLQ were also discussed. They were asked about the strategies they found the most appropriate for them to learn English and the kind of activities they enjoyed the most while learning English and the strategies they used to help them improve their language proficiency. The interviews were conducted in both English and Bahasa Melayu, whichever language felt by participants to be the one in which they could express themselves most freely. Mostly, the participants code-switched during the interview and the duration of the interviews varied from about 15-30 minutes depending on the amount of information given by each participant. The interviews were digitally recorded and transcribed and sent to the participants for confirmation.

4.2.5 Research Instrument (Qualitative Data)

It is re-emphasized here that the purpose of qualitative data in the current study is to complement the quantitative data collected in the first phase of the study. As such, any information collected during the interviews, provides a complementary set of data which together gives a more complete picture of a phenomena being studied. The samples were chosen based on the categories identified from the survey findings. Findings from these selected key participants were then used to make both internal and analytical generalizations to gain more in depths information on the strategies employed by these groups of learners.

According to De Groot (2002), an interview approach can contribute to the understanding of both the theoretical elements and also the personal development of the participants in terms of meta-cognitive self regulation processes and strategies. In the current study, interviews are used as a mean of exploring in depth information of the learners' meta-

cognition and self regulation in directing their language learning. In this sense, interviews provided more rich and personalized information of how learners use Meta-cognitive Self Regulated Learning strategies while engaging themselves in language tasks or in language learning generally. In addition, learners are also allowed to express the events or the learning process more freely with their own words and from their own perspectives.

Guided Interviews with the Participants

The semi-structured interview questions were specifically designed to probe more deeply into the language learning strategies used by learners. The interview guide used in this study comprises of three main open-ended questions which aimed to elicit information concerning learning strategies use by ESL learners while they learn English. The interviewees were asked to explain on any particular strategies they use *BEFORE*, *DURING* and *AFTER* they engaged themselves with language tasks /language learning. The questions were open-ended and recursive. The follow up questions were also asked to encourage a positive interaction between both interviewer and the respondents. It was also to ensure the flow of the conversation keeps going and to stimulate the respondents to share more about their feelings and experiences.

4.2.6 Piloting the Meta-SRL Questionnaire

Meta-SRLQ has been used in a pilot study involving a total of 36 students enrolling in the Foundation English Course which took place in semester two of the 2012/2013 Academic year. The purpose of the pilot study was to determine the feasibility of research instrument and the validity and reliability of the questionnaire. All thirty-six (36) students responded to

the questionnaire. The results of the pilot study demonstrated that all the forty (40) items in the questionnaire were fully comprehensible by the students and suitable for the current study. The reliability of the survey questionnaires was assessed using Cronbach's Alpha coefficient in SPSS 20 for Windows. It is an internal consistency reliability coefficient measuring the degree to which items agree with each other. The Cronbach's Alpha of the pilot study was found to be highly reliable. All items appeared to have a good internal consistency, $\alpha = .92$. Hence, the instruments were considered consistent and reliable.

4.2.7 Piloting the Semi-guided Interviews

Before the real interview sessions were executed to the selected participants, a pilot interview session was done with four students to check whether the questions were understandable. The pilot interviews were meant to check whether the questions being asked were sufficient to gain in depth information about the strategy used by learners when they learn English and also to gauge whether they have similar responds with what they had reported previously. The interview sessions took place in August 2015. The interview sessions involved four selected participants who were identified based on the two pre-determined criteria discussed in the previous paragraphs.

The interview was based on a one-to-one in depth interview. It was conducted in a classroom and the interview sessions took about 15- 25 minutes depending on the participants' responses. The interviews were conducted in English, but the participants were also allowed to use 'Bahasa Melayu' as to make them feel more relaxed and comfortable when articulating their responses. All the interviews were tape-recorded, and verbatim responses to each question were translated and transcribed. The analysis of the

interview responses on learning strategies were done through the following three steps. At first, any meta-cognitive process and meta-cognitive strategies identified from the transcribed interview data were extracted.

Next, in line with the research questions, learners' use of strategies in learning were considered. A comparative analysis was then carried out, to examine whether there were any similarities or differences between the learning strategies emerging from the interview data with what they had reported earlier in the survey questionnaire. It is emphasized again here that the purpose of qualitative data in the current study is to complement the quantitative data collected previously in the first phase of the study. As such, any information collected during the interviews, provides a complementary set of data which together gives a more complete pictures of a phenomena being studied. The results of the interviews will be further explained in Chapter 5.

4.3 Research Setting

Models of self regulated learning propose that student's motivation and the use of self regulated learning strategies should be studied at the course specific level (e.g. Boekaerts & Cascallar, 2006; Pintrich, 2004; Zimmerman, 1989; Zimmerman & MartinezPons, 1990). Hence, in order to understand the complexity of self regulated learning behaviors among ESL learners, the researcher has decided to conduct this study in a specific language classroom setting in one of the public universities in the Northern part of Malaysia.

The public university chosen for this study is a technical university offering multi-disciplinary engineering courses as its 'niche area'. The setting of this study took place in a

Foundation English class offered in semester 1 of the 2013/2014 academic year. The foundation English course is a one semester (14 weeks) proficiency language course designed to remedy students' weaknesses in the use of English and to raise their proficiency level. This course which covers all the four aspects of language skills: reading, writing, speaking and listening, is offered to all undergraduate students who posses Malaysian University Entrance Test (MUET) score with either Band 2 or Band 3. The course is a two hour course designed for a duration of 14 weeks. Students' assessments are based on their individual and group performance, summative assessment and final exam. The course description is available in Appendix E. The grades are calculated using the Cumulative Grade Point Average (CGPA).

4.4 Research Ethics

Ethical Considerations

The obligation to respect research ethics is part of responsibility for research in general. The ethical responsibilities inherent in this research are partly associated with standards related to the research process, including relationships between researchers, and partly with respect for the individuals and institutions being studied, including responsibility for the use and dissemination of the research. Hence, ethical approval will be sought from the Research Ethics Coordinator in the School of Education for both the pilot study and the main study before they are being formally conducted. As a researcher, I am fully aware of the ethical behavior that I have to adhere when conducting this research. Therefore, data gathering activities in the current study will only be carried out with the agreement of the director of Centre for International Languages in Universiti Malaysia Perlis. All potential

participants will be asked to give their explicit, normally written consent to participating in the research, and, where consent is given, separate copies of this will be retained by both researcher and participant. Participants will be made aware that they may freely withdraw from the project at any time without risk or prejudice.

Research will be carried out with regard for mutually convenient times and negotiated in a way that seeks to minimize disruption to schedules and burdens on participants. At all times during the conduct of the research I will behave in an appropriate, professional manner and take steps to ensure that neither myself nor research participants are placed at risk. The dignity and interests of research participants will be respected at all times, and steps will be taken to ensure that no harm will result from participating in the research. The views of all participants in the research will be respected and special efforts will be made to be sensitive to differences relating to age, culture, disability, race, sex, religion and sexual orientation, amongst research participants, when planning, conducting and reporting on the research.

Data generated by the research will be kept in a safe and secure location and will be used purely for the purposes of the project (including dissemination of findings). No-one other than the researcher will have access to any of the data collected. . Additional feedback will be given to participants as and when required or requested by the participants. The study will not involve participants aged less than 18 years or vulnerable adults. Ethical procedures will need to be continually reviewed and revised accordingly throughout the duration of the study.

4.5 Chapter Summary

This chapter described the research design and methods adopted in this study. In summary, this study was couched within the multi-phase mixed method research design to answer all the research questions in the study. A detailed description of the instruments used in the study was also explained. In addition, a procedure of both quantitative and qualitative data collection was also provided. The subsequent sections in this chapter also discussed the participants and sampling designs that were used in this research. Finally, the research ethics were deliberated after a discussion on the research setting. This research continues by looking into the process of data analysis and preliminary findings in the following chapters.

CHAPTER 5

EXPERTS VALIDATION OF META-COGNITIVE SELF REGULATED LEARNING STRATEGY (Meta-SRLS) FRAMEWORK

5.0 Overview of the Chapter

This chapter provides findings of experts' validation and review of the meta-cognitive self regulated learning strategies framework proposed in the present study. Using a panel of experts during the course of a validation will provide useful feedback concerning the quality of a newly developed measure. Without conducting a validation study, a researcher is using an untested measure to conduct their study. For example, if the components of the Meta-SRLS framework are used without validation, a model and a system developed based on the framework would need to be revised, and another round of pilot study must be conducted. On the other hand, if the components were validated early on, any model or system developed based on the framework would require less revision, and need not be evaluated repeatedly. Hence, in such situation, the use of experts' feedback to evaluate and support the framework development in the current study is viewed as beneficial.

The reliability of using expert judgment is shown in many other previous works in the literature. For example, Lauesen and Vinter (2001) found that the ability of experts to predict techniques to prevent requirements defects were very high when put into practice. Another positive outcome is observed in the work of Kitchenham et al. (2002b) in their

analysis of the accuracy of several methods of estimating project effort. Their statistical analysis revealed that incorporating experts' opinions can substantially outperform simple function.

A detailed information about the selection of expert participants in the study is provided in section 4.3.2.2 in chapter four of the thesis. In the current study, the experts were selected based on the four criterias presented below.

- i. Employed in the capacity of researcher, lecturer or language practitioner at tertiary education level.
- ii. Experienced in language teaching for more than 5 years.
- iii. Engaged as a current instructional designer or academic teaching/ course coordinator of undergraduate language courses or programs
- iv. Involved with course design, or syllabus development

According to Davis (1992), instruments that evolve from a specific theoretical or conceptual framework should be reviewed by experts who are knowledgeable about the study concepts, theory, or problem that governs the topic content of the instrument. Nunnally (1978) also added that, such reviews can serve the purpose of assessing the content validity of the instrument, that is, whether the instrument possesses sufficient numbers and types of items to represent the desired domain of content. For this study, the content validity of the Meta-SRLS framework was established via experts' review of the constructs (i.e. judging the relevancy of the constructs developed in the framework, and even the appropriateness of the items).

Hence, a panel of twelve (12) experts were asked to review the Meta-SRLS framework in terms of the following criterias: (a copy of the expert interview questions is presented in Appendix IV).

- I. Relevance
- II. Effectiveness
- III. Efficiency
- IV. Impact

The review and validation of the framework was based on the evaluation criteria from the Development Assistance Committee of the Economic Cooperation and Development (OECD/DAC) which have been a strong foundation for international development evaluation. Since 1991, they have been the most prominent and widely adopted criteria used for aid evaluation.

5.1 Review data from the experts

The findings for this specific phase of study (*refer to Phase 2 in section 4.3, chapter 4*) will be discussed around these two research questions: (a) *What constructs will make up a Meta-cognitive Self Regulated Learning Strategy (Meta-SRLS) framework that may be used to assess students' use of strategies and support teachers in incorporating the strategies into their teaching?;* (b) *How do experts in the field of ESL education review and validate the Meta-cognitive Self Regulated Learning Strategy (Meta-SRLS) framework as instructional framework for the teaching of Meta-Self Regulated Learning Strategies?*

Hence, to validate whether the proposed Meta-cognitive Self-Regulated Learning Strategy (Meta-SRLS) framework can be applied as an instructional framework in the context of L2 teaching and learning, a group of experts from higher educational institutions in Malaysia were asked to evaluate the suggested Meta-cognitive Self Regulated Learning Strategy (Meta-SRLS) framework. For the purpose of this study, the experts were typically selected, not for demographic representatives, but for the perceived subject matter expertise that they can contribute to the topic under investigation (Hatcher & Colton, 2007). The major aim of the expert interview approach in the study was to elicit perceptions and knowledge held by the experts on the appropriateness of the constructs developed in the Meta-cognitive Self Regulated Learning Strategy (Meta-SRLS) framework and also to examine the effectiveness of its application into the L2 teaching and learning. Figure 5.0 below provides a statistical distribution of experts' reviews on the framework.

Figure 5.0: Statistical Analysis of Experts Review on Meta-Cognitive Self Regulated Learning Strategy Framework

Experts' opinions of Meta-SRLS Framework	YES	NO
1. Relevance		
a. The Meta-SRLS framework help teachers to develop systematic learning strategies in their students.	10 [83.33%]	2 [16.66%]
b. The Meta-SRLS framework can be used by students to self-develop systematic learning strategies.	10 [83.33%]	2 [16.66%]
2. Effectiveness		
a. The framework is closely related to effective teaching and learning strategies.	11 [91.66%]	1 [8.33%]
b. The Meta-SRLS framework is effective in developing teachers' and students' systematic teaching/ learning strategies.	11 [91.66%]	1 [8.33%]
c. The Meta-SRLS framework has fully integrated various important stages of learning (planning, monitoring	12 [100%]	12 [100%]

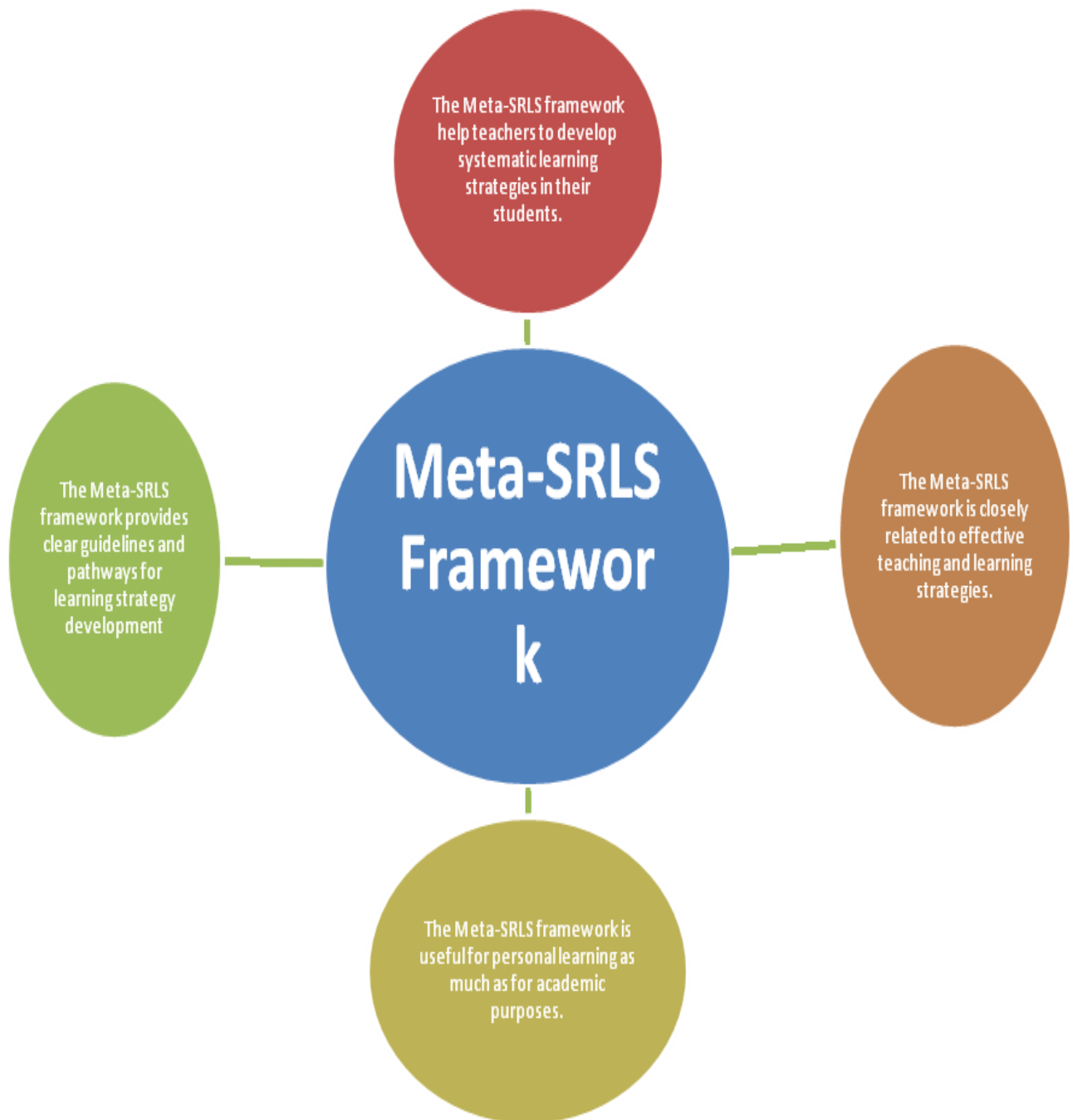
etc.)		
3. Efficiency		
a. The Meta-SRLS framework is useful in developing systematic learning strategies.	10 [83.33%]	2 [16.66%]
b. The Meta-SRLS framework provides clear guidelines and pathways for learning strategy development.	11 [91.66%]	1 [8.33%]
c. The Meta-SRLS framework can be used as a self-help tool by the students.	10 [83.33%]	2 [16.66%]
4. Impact		
a. The Meta-SRLS framework has a significant impact on developing systematic learning strategies in students.	10 [83.33%]	2 [16.66%]
b. The Meta-SRLS framework is generic enough to be used within and across the learning of different disciplines and subject areas.	9 [75%]	3 [25%]
c. The Meta-SRLS framework is useful for personal learning as much as for academic purposes.	10 [83.33%]	2 [16.66%]

Interestingly, the results from the interviews revealed that majority of the experts (83%- n= 10) viewed that the framework is appropriately constructed and effectively represented. In terms of its relevancy, (83% -n=10) of the experts agreed that Meta-SRLS framework is relevant in developing a systematic learning strategies in students. It is because most of the experts believed that the Meta-SRLS framework can help language teachers and instructors to develop self directed learning among the students by personalizing systematic learning strategies as suggested in the framework. The findings also revealed that (91.66%- n=11) of the experts rated the framework as effective in developing teachers' and students' systematic teaching or learning strategies because the Meta-SRLS framework has fully integrated various important learning constructs (planning, monitoring and etc.) which are fundamental to self regulation. 83.3% of the experts also claimed that the framework has a

significant impact towards developing systematic learning strategies as it provides a clear guidelines and pathways for self regulated learning.

Moreover, they also agreed that the framework can be a useful self help tool for enhancing self regulatory behaviors among the students. However, there is a need for a clear guiding procedures for the students to enable them to fully utilize the strategies and learning elements constructed in the framework. It is also emphasized that the students should also be taught on the learning processes that they have to go through while learning and how to use the strategies effectively in their learning. Figure 5.1 below summarizes the four main consensus reviewed by the experts on the Meta-SRLS framework in terms of its relevancy, effectiveness, efficiency and impact towards developing self regulated learning.

Figure 5.1: Key Summary of the expert reviews



5.1.1 Accuracy and saliency of constructs

Based on the comments made by the experts, a number of aspects about students' overall self-knowledge can provide sound argument for the usefulness of a Meta-SRLS framework in evaluation and assessment. The first question of the interview requires the experts to give their opinions on what knowledge, qualities and strategies that university students should possess in order to help them become better learners. From the experts' perspectives, learners' overall self-knowledge are consisting of (a) Knowledge of self-awareness, language proficiency level, and self-enhancement; (b) Quality of Inquisitiveness, self-motivation, self-discipline, time management skills; and (c) Strategy of time management, self-evaluation, critical thinking, peer knowledge sharing. Most of the expert participants in the study agreed that learners should have the ability to learn. In this sense, the ability to learn is mostly related to how learners judge themselves as learners, how they interpret the tasks and how they choose appropriate strategies to perform the tasks. The following responses explain further about this.

#Expert 1: The ability to learn, cultivate deeper learning and identify what to learn is the most important elements that a student should have. They should be able to read and understand the skills needed for their learning in order for them to be a better student.

#Expert 2: They should be more critical. Perhaps they should value their knowledge more. This would help them prioritize task and purpose of many learning acts.

#Expert 3: They should also know their level of proficiency in order to become better learner.

#Expert 4: Students should have self awareness, self enhancement and also self motivation. They should be highly motivated to direct their own learning.

As quoted from the above excerpts, the ability to learn, to cultivate deeper learning, to be critical and to know their level of language proficiency and etc, entail the important qualities and knowledge that a student should possess to become a better learner. This knowledge is featured in the proposed meta-cognitive self regulated learning strategy framework as *meta-cognitive knowledge*. The suggested framework emphasizes that a successful learner should have three types of knowledge which include (1) “person” knowledge, which includes anything one believes about the nature of human beings as cognitive processors; (2) “task” knowledge, which includes knowledge about the demands of different tasks; and (3) “strategy” knowledge, which is knowledge about the types of strategies likely to be most useful.

On the other hand, the importance of having meta-cognitive knowledge amongst learners is further highlighted by the experts in the study in the following thoughts:

#Expert 5: *It is because a learner has to know about himself/herself and master the content and the ability to use it depending on the contexts.*

#Expert 6: *To know their strengths and challenges that might affect their performance.*

#Expert 7: *It helps to boost aptitude, competence and personality development. In other words, this knowledge will help overall learning.*

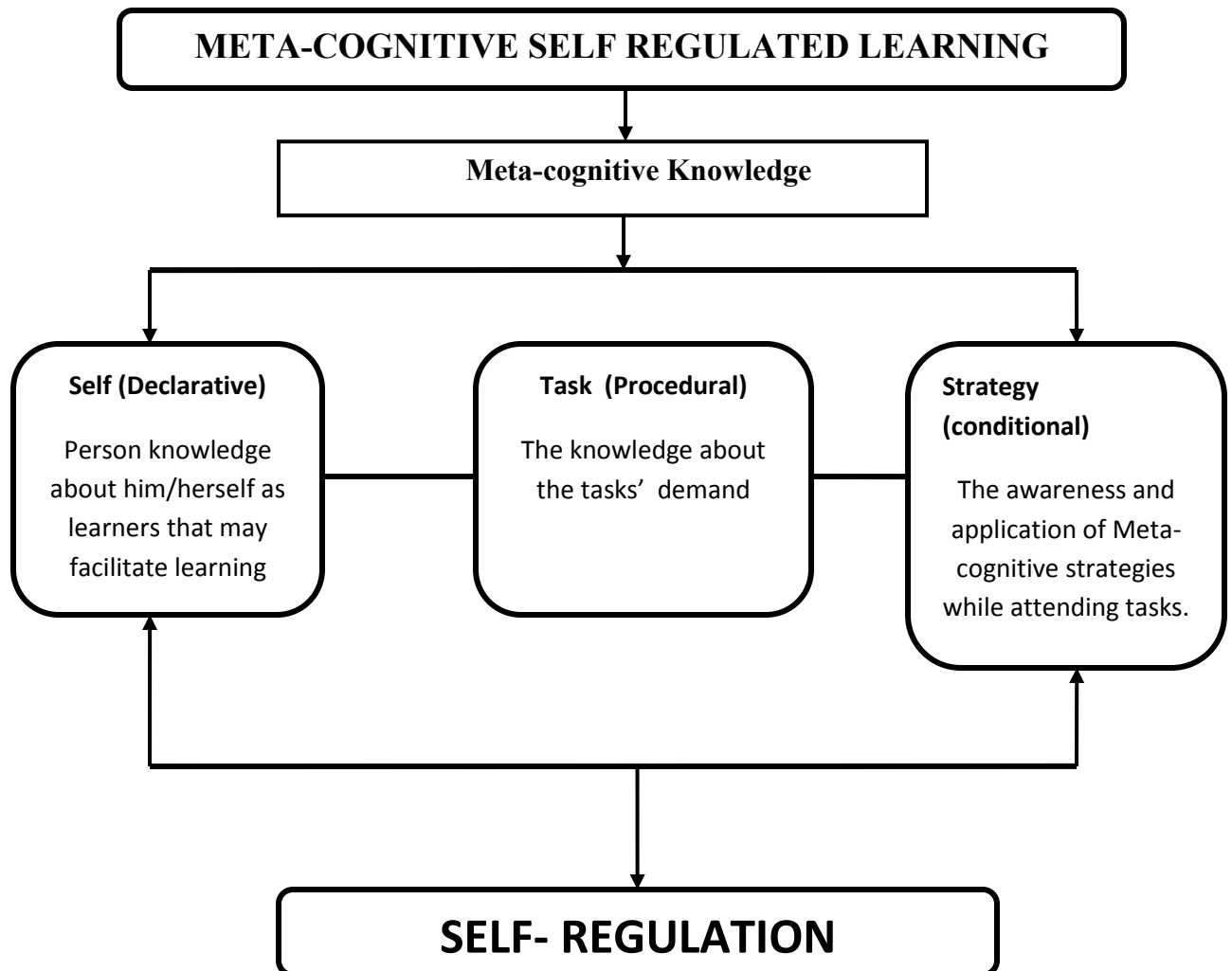
#Expert 8: *...so that learners know how to capitalize their performance and when to get a break. They can also optimize the resources and gain the most outcome.*

Based on the experts’ point of views, meta-cognitive knowledge is certainly, a prerequisite for independent use of learning strategies. When learners know better about themselves, they will identify their strengths and weaknesses and at the same time try to optimize

available resources to boost their learning. According to Flavell (1979), meta-cognitive knowledge is multidimensional in nature, and consists primarily of knowledge or beliefs about what factors or variables interact in what ways to affect the course and outcomes of cognitive enterprises” (Flavell, 1979, p. 907).

In the proposed framework, the researcher relates the three distinct, but interrelated, facets of meta-cognitive knowledge: declarative knowledge, procedural knowledge, and conditional knowledge (Brown, 1987; Jacobs & Paris, 1987) into learners’ self regulation. By possessing these knowledge: declarative meta-cognitive knowledge which refers to “one’s knowledge about oneself as a learner, including knowledge about one’s own abilities (strengths and weaknesses)” (Harris, Graham, Brindle, & Sandmel, 2009, p. 133), procedural meta-cognitive knowledge which refers to “the knowledge needed to carry out procedures, including strategies, in order to apply declarative knowledge and reach goals” (p. 133) and finally, conditional metacognitive knowledge which refers to “knowing when, where, and why to use declarative knowledge as well as particular procedures or strategies (procedural knowledge)” (p. 133), ESL learners might be able to personally activate and sustain cognitions, affects, and behaviours that are systematically oriented toward the attainment of learning goals” (Schunk & Zimmerman, 2007, p. 7). The following figure 5.2, explains the interrelationship between these three important facets in Metacognitive Self-Regulated Learning.

Figure 5.2: Three distinct facets of meta-cognitive knowledge in the Meta-cognitive SRLS Framework.



As explained in chapter 3, students' general knowledge of the learning process is expected to influence how they direct their learning. Both Flavell (1979) and Brown (1987) theories indicate that meta-cognitive knowledge consists of an awareness and an understanding that can help learners to learn effectively. Learners are considered to have an understanding of meta-cognitive knowledge when they can respond to their own questions about learning.

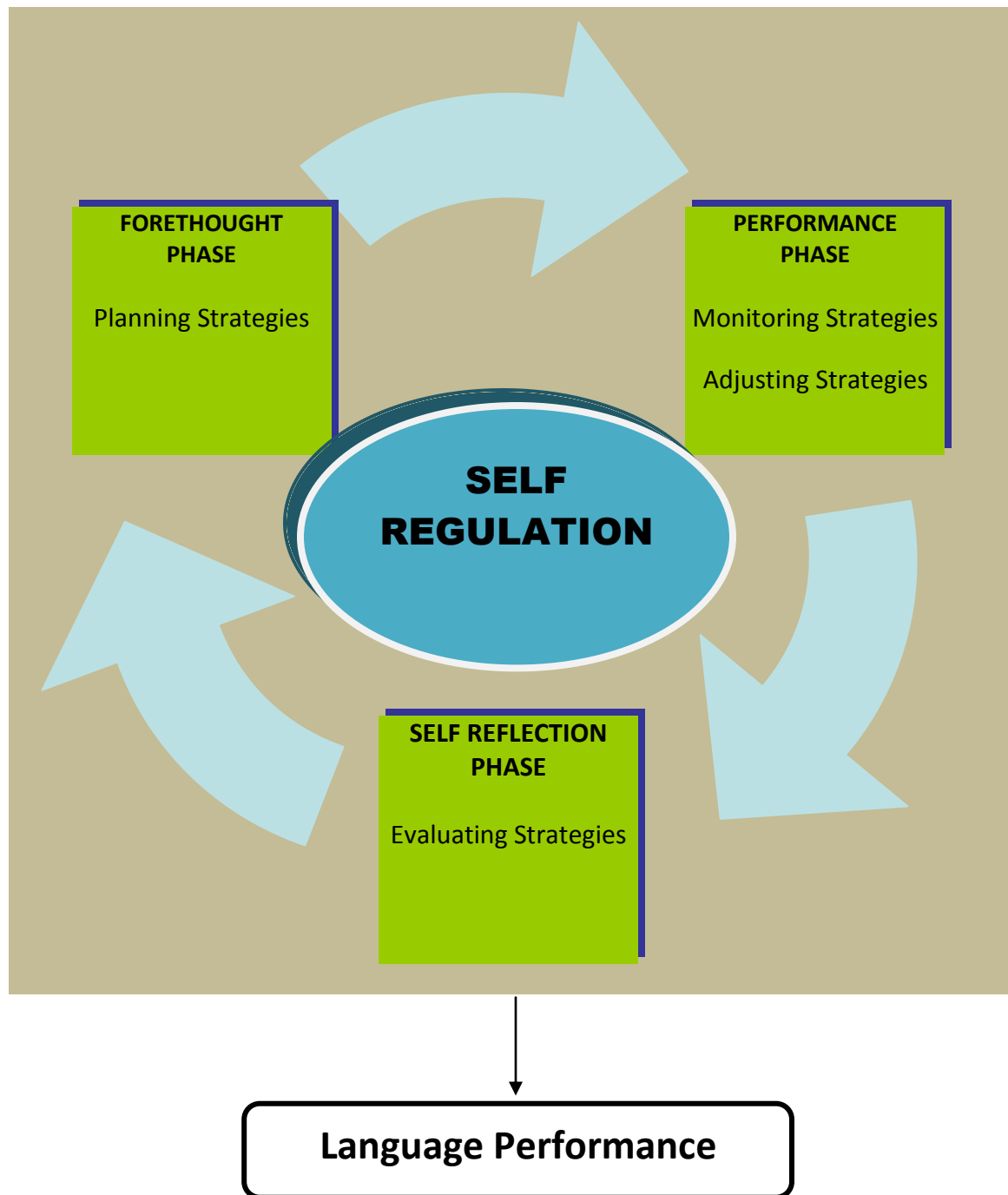
Accordingly, Brown (1987) specifically pointed out that this kind of thinking through of effective learning can also support students in the managing and monitoring of their learning activities. This means that general knowledge of the learning process can support students in knowing how to interpret learning tasks and, accordingly, coming up with the most effective learning strategies. The proposed framework also suggests that meta-cognitive self regulated learning involves the interaction between learners' meta-cognitive knowledge and self regulation. The meta-cognitive knowledge that learners possess will help them to value the learning process and set mastery goals, which lead to the use of self-regulated learning strategies.

As self regulated learners, they will personally activate and sustain themselves in the process of self regulated learning. Van Blerkom (2009) states that self-regulated learners are *“actively involved in their own learning, they set goals, develop plans for achieving those goals, monitor their progress, and evaluate their results. They tend to be more motivated, have higher self-efficacy, and focus more on mastering the material than on grades. Self regulated learners value the learning process itself and set mastery goals, which lead to the use of self-regulated learning strategies. They use more effective learning strategies and also tend to make adjustments when they are having difficulty mastering material.”* (pp. 4–5)

Opinions held by the experts in the current study strongly support this view. They agree that learners can control their own learning by activating their meta-cognitive knowledge and involve in the three distinct cyclical phases of self regulated learning: forethought,

performance or volitional control, and self-reflection (Zimmerman, 1998, 2000; Zimmerman & Kitsantas, 2005). The forethought phase includes goal setting, strategic planning, self-efficacy, learning goal orientation, and intrinsic interest in the task. The performance phase includes focusing attention on the learning task, using self-instruction, imagery, and self-monitoring. The self-reflection phase includes self-evaluation, attributions, and self-reactions. Self-regulated learning, on the other hand, is defined as “the process by which learners personally activate and sustain cognitions, affects, and behaviours that are systematically oriented toward the attainment of learning goals” (Schunk & Zimmerman, 2007, p. 7). Figure 5.3 below, shows the interrelation of the cyclical processes of self regulated learning as depicted in the proposed framework.

Figure 5.3: The cyclical processes of self regulated learning in Meta SRLS Framework.



The three phases of learning processes do represent a general time-ordered sequence that individuals would go through as they perform a task, but there is no strong assumption that the phases are hierarchically or linearly structured such that earlier phases must always occur before later phases. During the interviews, experts agreed that the sequences of these phases are pre-requisite; without the info from the previous step, it would be hard to carry out the actions for each sequence. In most models of self-regulated learning, monitoring, control, and reaction can occur simultaneously and dynamically as the individual progresses through the task, with the goals and plans being changed or updated on the basis of the feedback from the monitoring, control, and reaction processes. In fact, Pintrich et al. (2000) suggest that much of the empirical work on monitoring and control/regulation) does not find much separation of these processes in terms of people's experiences as revealed by data from self report questionnaires or think-aloud protocols.

In sum, the Meta-SRLS framework proposed in the current study includes constructs of meta-cognition and self regulated learning which are relevant to help learners to organize their learning activity independently and effectively. The framework also stresses the essential role of both meta-cognition knowledge and self regulation processes, as it allows learners to become more aware of their learning progress, to manage the learning environment by themselves and to apply strategies effectively so as to organize their study.

Next, the second part of the interview requires experts to further validate whether the Meta-cognitive Self Regulated Learning Strategy framework proposed in the current study can be used as an instructional framework for the teaching of Meta-Self Regulated Learning

Strategies in the classrooms. Therefore, discussions in the next section is centred on research question 2: *How do experts in the field of ESL education review and validate the Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) framework as instructional framework for the teaching of Meta-Self Regulated Learning Strategies?*. The framework was specifically reviewed in terms of the following criteria: 1. Relevance; 3. Effectiveness; 4. Efficiency; and 5. Impact.

5.2 Relevance

The relevance of the framework is a significant concern of the expert review to establish content validity of the framework. In the context of this framework, the experts point out several critical reasons to support the relevance of this framework. The reasons may be grouped into that focus on teaching, and learning.

From the teaching perspective the experts indicated that the framework is important and useful because it will allow teachers to develop “*personalized systematic learning strategies needed by the students as each of them has different needs*”. Numerous research showed that learners trained in learning strategies significantly outperformed the students who received no training (O’Malley & Chamot, 1995; Wenden, 1987). Direct and integrated language learning strategy instruction can inform learners of the value and purpose of the learning strategies and can help them to use, identify and develop learning strategies in a very systematic way as they learn the language. By using this proposed framework, teachers or language instructors can raise their learner awareness of the purpose and rationale for strategy use, identifies the specific strategy being used, and systematically

provides opportunities for practice and self evaluation. Deep understanding of each student will help the teachers to answer the following questions: *How will this student learn best? Why does he or she need to learn this? How does this relate to what he or she already knows?*, and design learning experiences accordingly. This means teachers could develop different sets of learning goals and learning activities to support their learners acquiring the full range of strategies in the framework. In this way, teachers can also “*prioritize tasks and objectives*” based on learners or class needs.

By integrating the proposed framework into their teaching instructions, teachers or instructors can encourage their students to take ownership of their learning with goal-setting. Students increase ownership as they develop their identities as learners. In addition, personalized learning experiences are responsive towards an individual learner’s needs and strengths which shifting the power from teacher to student. When a student has a deep understanding of his or her own needs as a learner, he or she will be able to answer such question ‘*How will I learn this best?*’. The experts pointed out that the framework will empower them to engage in a “self-directed learning” making them becoming “better and more responsible learners”. The framework, as suggested by the experts, allows the students to self-assess and progress to more advanced strategies.

5.3 Effectiveness

In terms of the effectiveness of the framework towards teaching and learning, the experts viewed that the Meta-SRLS framework proposed in the study has integrated most of the

important elements of self regulated learning. The fundamental of meta-cognition (i.e knowledge of self, task and strategy) in the framework includes learners' awareness which influences how individuals study and learns. Meta-cognition involves selecting strategies that are appropriate and allocating cognitive resources in a way that matches the demands of a task (Schraw et.al., 1995). This is closely related to self-regulation, as it promotes students' ability to self-monitor and control cognitive processes (Meijer et.al., 2006). In their review, experts further added that the framework allows learners to be more independent and effective learners as they are able to regulate their own learning. In this sense, learner knows what to learn, and what kind of strategies they are going to use. By having such meta-cognitive awareness, learners are able to observe themselves as they evaluate information regarding specific processes or actions that affect their learning and achievement (Zimmerman & Paulsen, 1995).

From the teachers' perspective, the experts pointed out that, the framework will also be effective for teachers in monitoring their students' learning progress. According to Boekaerts & Niemivirta (2000), when a teacher integrates self-regulatory strategies into the curriculum of their discipline to achieve a task, this functions, not only as a lever in the promotion of the intuitive experience of the students, but also puts into practice the explicit instruction of these strategies, leading students to comprehend and internalize the use of them (Rosário et al., 2006). This explicit teaching and learning process, appears in the literature to be systematically associated with better academic performance (Ommundsen, 2006; Pintrich, 2000; Rosário, 2004; Schunk, 2005).

5.4 Efficiency

In the study, experts also addressed on the efficiency of the Meta-SRLS framework towards a systematic learning approach as the framework lays emphasis on the four learning phases i.e. forethought, performance and self reflection which are relevant in developing learners' self regulation. Kitsantas (2000) claims that efficient learners exhibit the ability to employ more self-regulation processes before, during, and after the learning task. By understanding the mechanism of self regulated learning and the underlying principles, both teachers and learners can delve deeper into what is exactly impeding and promoting self regulation. This would certainly be helpful for those teachers who are endeavoring to promote self regulation into their classrooms, and for those learners who want to become more successful in their learning.

The experts further explained that, the framework also provides a clear and transparent guideline for promoting Meta-cognitive Self Regulated Learning into the second language learning. To integrate the use of self regulated learning instructions into their classrooms, teachers must assist their learners to engage flexibly and adaptively in meta-cognitive activities (task analysis, strategy selection and self-monitoring). The main key point here includes promoting students' construction of meta-cognitive knowledge about academic work, strategies for analyzing tasks, meta-cognitive knowledge about task-specific strategies, skills for implementing strategies, and strategies for self-monitoring and strategic use of feedback. Within recursive cycles of learning, the framework also focuses on how students can adapt appropriate Meta-cognitive self regulated learning strategies reflectively

and flexibly (Butler & Winne, 1995). As learners learn through experience and self reflection, teachers may experience greater success in promoting academic achievement, motivation, and life-long learning.

5.5 Impact

In terms of its impact, panel of experts in the study agreed that the Meta-SRLS framework is significant for a development of systematic learning strategies in students. They commented that the framework offers a systematic approach to raise learners' awareness of language learning strategies. Moreover, according to them, the framework is useful for personal learning as much as for academic purposes. The underlying assumption of the Meta SRLS framework is, if learners explore 'how', 'when' and 'why' to use language learning strategies, and evaluate and monitor their own learning (Cohen, 1998, p.69), then they can take a more active role in the language learning process. From a learning perspective, direct instruction in 'how', 'when' and 'why' to use language learning strategies can help learners in the systematic use of various strategies as they learn a second or foreign language (Cohen, 1998, p. 96). From a teaching perspective, strategies instruction contributes to improved language performance.

Previous research has proved that language learners need instruction in 'how' to use strategies efficiently as a way to improve their language learning and performance (O'Malley & Chamot, 1995; Cohen, 1998). By integrating language learning instruction into ESL classrooms, teachers can help learners become more efficient in their learning. As learners become more reactive learners, they increase their strategy awareness, practice and

use of the language learning strategies while learning. The outcome is, as Wenden (1987) asserts, an efficient learner who has developed the skills to successfully organize and control his/her own learning. Experts also found that the framework is generic enough to be used within and across different learning disciplines and subject areas.

The essential learning phases included in the framework, with a systematic instruction, may develop and enhance meta-cognitive self regulatory skills among learners. The forethought learning phase lays the foundation for creating a learner-centered environment; the performance phase builds the real construction of independent learning and involves a development of strategic thinking about the strategies, whereby learners decide and select appropriate strategies to use; the third phase allows learners to engage themselves with the adjustment and evaluation cycles of learning where learners reflect and evaluate the effectiveness of their learning. At this stage of learning, learners reflect and transfer the application of a strategy from a familiar context to an unfamiliar one effectively.

Indications drawn from the interviews with the experts are in line with core assumptions of the proposed Meta-SRLS framework. Moreover, the results provide a basis to ensure the content validity of assessments of learners' SRL competencies and from which to derive standards to judge these competencies. The first key consensus finding of the experts interviews was that the construct and knowledge presented in the metacognitive self regulated framework are relevant for developing self directed learning. They found it relevant because teachers could develop personalized systematic learning strategies needed by students with different abilities. The abilities to self-monitor and self-correct are central

to self-regulation as individuals must first obtain awareness of their current state in relation to a desired goal in order to identify potential conflicts and discrepancies, which may precede subsequent goal-correcting behavior.

The proposed framework helps to develop these kinds of abilities among learners, provided that they have a thorough understanding of meta-cognitive knowledge needed in a given situation. In terms of its effectiveness, the experts agreed that the framework can effectively develop and improve systematic learning strategies among teachers' and students'. They claimed that the framework may closely teach learners to be independent learners and effective learners as it provides clear guidelines for learners on how to regulate their learning through the integration of various meta-cognitive self regulated learning strategies.

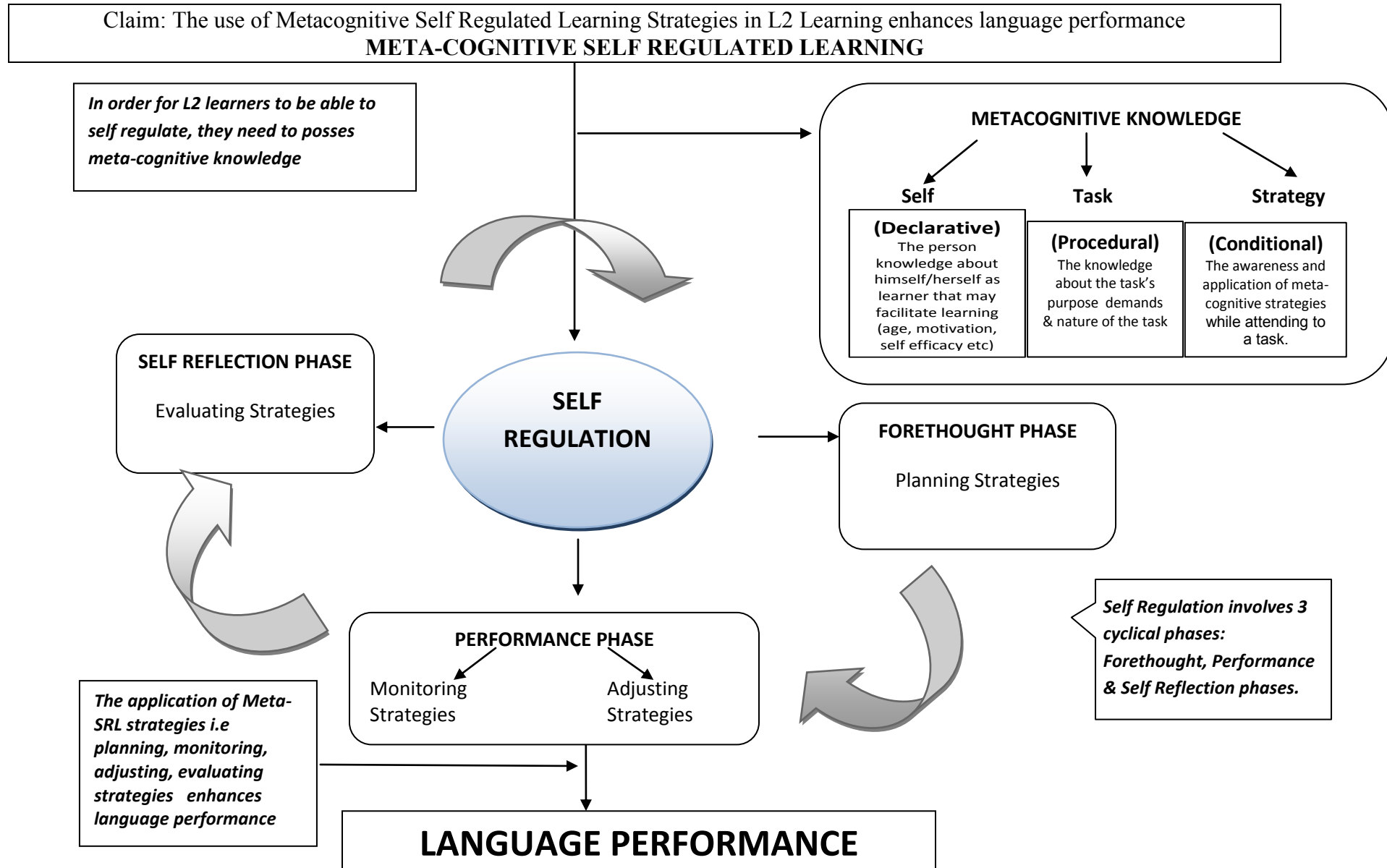
Meanwhile the instructors/teachers can also train their students to be more independent learners. Teachers can integrate activities to activate learners; regulation of cognition into their teaching. These include planning activities (predicting outcomes, scheduling strategies, and various forms of vicarious trial and error, etc) prior to undertaking a problem; monitoring activities (monitoring, testing, revising, and re-scheduling one's strategies for learning) during learning; and checking outcomes (evaluating the outcome of any strategic actions against criteria of efficiency and effectiveness). Hence, this framework can be used to effectively develop both learners and teachers systematic self regulated learning.

Another significant review provided by the experts is on the efficiency and impact of this meta-cognitive self regulated learning strategy framework in developing systematic language learning strategies especially at tertiary level. They viewed that the framework can be very useful for teachers to improve their teaching and learning at tertiary education level. This is because the framework provides a transparent guideline on how teachers can enhance language learning by promoting self regulated learning strategies proposed in the framework. When teachers guide their students to self regulate their own learning, learners take active roles in their learning and become more autonomous learners (Dörnyei, 2003). They involve themselves in planning, monitoring, and evaluating, as well as self-managing of the learning process (Bown & White, 2010; Oxford, 2011; Wang et al., 2009), which ultimately enhancing their learning autonomy (Beishuizen & Steffens, 2011; Rasekh & Ranjbary, 2003; Shen, 2005).

The findings revealed several important consensuses emerged from the interviews in terms of relevance, effectiveness, efficiency and impact of the framework towards teaching and learning. The meta-cognitive self regulated learning strategy framework is proposed based on the claim that the use of Metacognitive Self Regulated Learning Strategies in L2 Learning, will enhance language performances of the L2 learners. The framework also suggests that in order for L2 learners to be autonomous learners, they must possess metacognitive knowledge of self, task and strategy, which enable them to control their own learning by activating and engaging themselves in a self regulated learning environment. The framework suggests that through the three cyclical learning phases proposed in the framework, namely, forethought, performance and reflection phases, self regulated learners

employ several metacognitive self regulated learning strategies to achieve goals attainment in academic learning. In the case of the current study, L2 learners employ a range of strategies to become a successful language learners. The interrelationship between these constructs is depicted in figure 5.4 below.

Figure 5.4: A Proposed Meta-cognitive self regulated learning strategy Framework for ESL learners.



5.6 Chapter Summary

In conclusion, the findings of the experts' interviews provide significant reviews of the framework in the context of meta-cognition and self regulated learning. Their validations of the framework offer a remarkable insight for this study. Their reviews support that the meta-cognitive self regulated learning strategy framework proposed in the current study is valid and can be used to explain and predict a broad range of meta-cognitive self regulated learning phenomena. The framework provides a relatively systematic structure of knowledge and constructs of meta-cognitive self regulated learning that can be applied into the L2 classroom. It allows an individual (teachers/learners) to integrate diverse aspects of meta-cognition and self regulated learning within a single framework.

CHAPTER 6

THE USE OF META-COGNITIVE SELF REGULATED LEARNING STRATEGIES BY ESL LEARNERS

“It has long been recognized that the most successful learners of languages are those who understand their own abilities and capacities well and who autonomously engage in systematic efforts to reach self-determined goals of acquisition”.

(Brown, 2002)

6.0 Overview of the chapter

The main objective of this chapter is to discuss findings with reference to the following research question: What Meta-cognitive SRL strategies do ESL learners employ in English language learning? The question intends to examine the type of Meta-cognitive Self Regulated Learning strategies employed by ESL learners in completing English language tasks in the classroom. This chapter presents the quantitative data findings that were statistically analyzed using SPSS version 21 and were complemented by qualitative data gathered from the semi guided interviews with the participants. The findings were divided into three different sub -sections: (i) The overall Meta-Cognitive Self Regulated Learning Strategies used by participants; (ii) The use of Meta-Cognitive Self Regulated Learning Strategies in terms of *planning, monitoring, adjusting* and *evaluating* components; and (iii)

The use pattern of Meta-Cognitive Self Regulated Learning Strategies by user/participant. The paragraphs below provide more explicit discussion on these three sub-sections.

6.1 The overall use of Meta-Cognitive Self Regulated Learning Strategies by participants.

To address this issue, a descriptive statistics of Meta-cognitive Self Regulated Learning strategies scores i.e., mean scores and standard deviation for all the forty (40) Meta-cognitive Self Regulated Learning Strategies questionnaire items were computed using SPSS 21. The average means and standard deviations for the use of the four Meta-Cognitive Self Regulated Learning components i.e. *Planning, Monitoring, Adjusting and Evaluating* were calculated using SPSS statistic version 21. The overall average mean scores and standard deviations for each individual strategy were also reported Table 6.0 below.

Table 6.0: Meta-cognitive Self Regulated Learning Strategies use by ESL Learners

ITEM NO.	META-COGNITIVE SRL STRATEGIES [N-170]	MEAN	SD
1. Adjusting 6	Seeking peer support	4.1775	.76639
2. Adjusting 7	Trying alternatives	4.0473	.73849
3. Planning 2	Directing attention selectively	3.9471	.73188
4. Planning 6	Preparing to confront obstacles	3.8343	.79193
5. Adjusting 2	Accessing various resources	3.8118	.86338
6. Evaluating 10	Judging worthiness of learning	3.7952	.78252
7. Monitoring 5	Checking the retrieval of required information	3.7588	.75019
8. Planning 3	Linking with prior knowledge	3.7160	.73342
9. Monitoring 8	Checking importance of the information	3.7083	.85018
10. Adjusting 4	Asking for clarification	3.7059	.78933
11. Monitoring 6	Checking the attention	3.7000	.82741
12. Adjusting 5	Linking with prior knowledge	3.6686	.75374
13. Evaluating 1	Judging that the goal has been met	3.6667	.77896
14. Adjusting 10	Self-encouragement	3.6429	.74453
15. Monitoring 10	Checking the predictions/answers	3.6407	.80076
16. Adjusting 9	Logic reasoning	3.6331	.84252
17. Planning 9	Choosing strategies for the task	3.6310	.83026
18. Monitoring 4	Seeking related prior knowledge	3.6294	.86910
19. Monitoring 2	Checking progress	3.6235	.83527
20. Monitoring 3	Detecting weaknesses/obstacles	3.6000	.83843
21. Evaluating 9	Comparing new knowledge with known knowledge	3.5723	.75732
22. Monitoring 1	Comprehension check	3.5647	.82773
23. Evaluating 7	Judging how much learned	3.5476	.85338
24. Evaluating 8	Assessing correctness of the predictions	3.5353	.80783
25. Planning 4	Expecting the encountered problem	3.5325	.77179
26. Planning 10	Work ordering	3.5235	.77079
27. Evaluating 5	Seeking other suitable strategy	3.5059	.80123
28. Monitoring 7	Checking appropriateness of the strategy being used	3.4881	.81150
29. Monitoring 9	Checking linkage to other subjects	3.4790	.89737
30. Evaluating 2	Strategy suitability & effectiveness	3.4762	.78116
31. Evaluating 3	Checking appropriateness of the strategy within subject applicability	3.4706	.74720
32. Adjusting 1	Revising the plan	3.4643	.90833
33. Planning 7	Predicting outcomes/answers	3.4471	3.16604
34. Evaluating 4	Checking appropriateness of the strategy in other areas applicability	3.4412	.72124
35. Planning 5	Intending to ignore distractions /inappropriate thoughts	3.3690	.78580
36. Adjusting 8	Making new guesses	3.3254	.86293
37. Planning 8	Predicting the incoming information	3.2647	.83944
38. Planning 1	Goal setting	3.2471	.79801
39. Evaluating 6	Summarizing lesson	3.1145	.93038
40. Adjusting 3	Ignoring problems	2.7529	.88252
OVERALL MEAN/SD		3.5765	.86602

In distinguishing frequency of strategy use for various learning groups, Oxford & Burry-Stock's (1995) defines a mean of all subjects in the range of 3.5-5.0 on a learning strategy item as high use of that strategy, 2.5-3.4 medium use and 1.0-2.4 low use. The overall mean score for Meta-Cognitive Self Regulated Learning strategies is 3.57 with a standard deviation of 0.86. The mean score of 3.57 indicates that, the participants in the current study are high frequent strategy users. For each individual strategy items in the questionnaire, the average mean ranged from the highest rated strategy with **M=4.17**, and the lowest rated strategy with **M=2.75** respectively. The scores show a frequent high to moderate use of Meta-Cognitive Self Regulated Learning strategies amongst the ESL learners in the current study. The average median score was calculated based on the 5-point scale ranging from never (0) to always (5). In the current study, the number is between the **3** (*sometimes use*) and the **4** (*often use*) options on 5-point Likert item included in the questionnaire.

The results of the study revealed that participants in the current study frequently employed Meta-cognitive Self Regulated Learning Strategies during their English language learning. This finding is in line with most studies conducted in ESL learning settings (Adel, 2011; Haifa, 2010; Rahimi et al., 2008; Griffiths, 2003; Lee, 2003; O'Malley and Chamot, 1990), where ESL learners tend to report high frequency of use of meta-cognitive strategies. Likewise, my study show high frequency use for all the four meta-cognitive strategy components namely planning, monitoring, adjusting and evaluating as shown in the Table 6.0 above. The results also indicate that 60% of the participants in the current study "*often*" use Meta- cognitive Self Regulated Learning strategies, while another 40% reported they

“*sometimes*” use the strategies during their language learning. The results reveal that, out of 40 strategy items listed in the questionnaire, 28 strategy items were rated as highly use strategies and while the other twelve (12) items are rated as moderately use strategies.

As displayed in Table 6.0 above, participants in the study indicate their high preferences for adjusting strategy item no 6, “*seeking peer support*” and item no 7, “*trying alternative*”. These two adjusting strategies far outnumbered all the other strategy sub-scales in the study. 45% of the participants (n=77) reported *seeking peer support* as “often use” strategy while another 37% (n=63) rated this strategy as “always use” strategy. This implies that the participants in the current study do take charge of their learning. As Oxford (2001) maintains that, meta-cognition in ESL/EFL learning and language use strategies is positive because it provides the opportunity for the learner to take charge of his/her learning by way of finding out on his/her own varieties of avenues to use the target language.

Note taking and rehearsal strategies are frequently reported in the Self Regulated Learning research from different contexts and regions (Lawanto & Santoso, 2013; Fettahlioglu, 2011; Peverly, et al., 2003) , but surprisingly, my study further identified the following strategies: *seeking peer support*, *trying alternatives*, *directing attention selectively* , *preparing to confront obstacles* and *assessing various resources* as dominant strategies reported by the participants to enhance their learning performance. Additionally, data findings from the interviews further substantiate these results. Samples of qualitative data reported “*if I have problems, especially when I do not understand certain words, I ask my friend and lecturer. The participants also explained that ...if I have problem understanding*

the task or assignment given, I asked my lecturer further questions. Such responses indicate the ‘help seeking’ strategy employed by the participants in their learning. Moreover, they also explained the following “*Before i engage in language task, I look for information first*”, “*I start by reviewing the questions and I refer to dictionary.*” “*Normally I prefer to listening to radio and watching television to improve my English.*” “*I usually listen to English songs and movies*”. All these statements provide explanation on the use of alternative learning resources such as dictionary, internet, radio and even television in learning process, despite seeking help from teachers and peers.

The present findings are paralleled to the research done by Tricia Hedge (2000) in which she identified seven characteristics of a good language learner. Moreover, she believed that good language learners are ‘self-directed learners’, who are responsible for their own learning process, highly motivated, manage and divide time to learn properly, learn with active thinking, know their needs and use resources independently. Littlewood (1999) predicts that Asian learners love to perform in groups and appreciate cooperative learning that they work and support each other better. This further suggests that, the participants’ high preferences for help seeking strategy in the current study may also be associated to their full engagement in cooperative learning approach in the classroom.

Another significant findings by Maesin (2006) further support that Malay learners preferred group learning regardless of whether they are from urban or rural areas, generally preferred group learning. As they enrolled themselves in a language course which requires them to work in group, they will be expected to maintain cooperative atmosphere in their groups, so

argumentative discussions with opposing ideas and critical thinking often happen reluctantly and unexpectedly. The participants, hence, regard learning with and from peers, as a profitable strategy to facilitate their learning, and this further explains why this strategy was rated highest in frequency among others. What is more, as they have been greatly involved and exposed themselves in the cooperative learning tasks/activities in their language classroom, it is not surprising to see how much the participants have developed meta-cognitively. This is in agreement with Naginder (2012) who claims that Malaysian learners have preference for group learning, as it fits the Malaysian culture which emphasizes group learning and collegiality.

It is Interesting to note that, the results of this study do not support the conventional assumptions that Asian students use traditional types of strategies like rote-learning (Mustapha, 1998), and avoid typically Western behaviors, such as asking questions and interacting with others in the classroom. Quite surprisingly, participants in the current study, show their abilities to employ multiple Meta-cognitive Self Regulated learning strategies such as seeking support from others, using alternative resources, etc. and these types of abilities are closely related to Meta-cognition and Self-Regulation (Zimmerman, 2008). Besides, these findings also corroborate with the results of studies conducted in different context such as Pakistan (e.g., Alvi et al (2016), Australia (e.g., Effeney, et al., 2013) and Jordan (Al-Awan, 2008). Therefore, it is presumed here that every learners, regardless of different samples and nature of studies, use a range of Meta-Cognitive Self Regulated Strategies starting from limited and shallow to wider, cognitively rich, and deep processing (Alvi et. al, 2016).

Subsequently, the results of the study, which show the high frequently use of ‘help seeking’ strategy by the participants provides more insights into this area of study. The findings draw great attention to the importance of social interaction between learners and peers, and between learners and teachers in self regulation process, which seems to be lacking in the Self Regulated Learning models. Therefore, further investigation on how social aspects such as classroom interaction can influence self regulation is highly needed. Certainly, the high preference for help seeking strategy in the current study indicates an interesting level of interaction among the participants. It can be seen that, in attempts to complete the task or activities given, learners tend to seek helps and supports from their peers, and this in turn, provides more opportunity for practice and asking questions about or in the target language. Through asking more proficient learners or experts in the target language, learners engage themselves actively in conversation and classroom interaction. When learners ask their friends or their teachers to correct themselves, this implies that they are very keen to self direct their own learning.

Within classrooms, students’ understandings about and ways of engaging in learning are influenced by how a teacher interprets and addresses the curriculum, by teachers’ instructional approaches, evaluation practices, and feedback, and by interaction patterns between and among teachers and peers (Butler & Cartier, 2005). Since help seeking strategy has been regarded as an achievement behavior in overcoming obstacles to learning, and plays a crucial role in participants’ learning experience, more research should be done on this aspect and how it affects learning. Apart from that, curriculum design is yet another interesting aspect which need further investigation in relation to self regulation. It is

important to note that curriculum design, to a certain extent, is fundamental in determining the use and choice of strategy amongst ESL learners.

The following sub-section, will provide a discussion on the use of Meta-cognitive Self Regulated Learning Strategies by different Meta-cognitive components; Planning, Monitoring, Adjusting and Evaluating.

6.2 The Use of Meta-Cognitive Self Regulated Learning Strategies in terms of Planning, Monitoring, Adjusting and Evaluating components.

The following section provides explicit description on each Meta-cognitive Self Regulated Learning Strategies and components as reported by the participants in the study. These four meta-cognitive components, namely planning, monitoring, adjusting and evaluating are crucial in controlling learning as these processes help learners raise their awareness of the use of strategies and provide a type of scaffolding to the learners as they are involved in language tasks. Planning involves identification and selection of appropriate strategies and allocation of resources, and can include goal setting, activating background knowledge, and budgeting time. Monitoring or regulating involves attending to and being aware of comprehension and task performance and can include self-testing. Adjusting includes identification of learning problems and finding solutions to the problems. Finally,

evaluation is defined as “appraising the products and regulatory processes of one’s learning,” and includes re-evaluating and revising one’s goals (Schraw et al., 2006, p. 114).

The results of the current study reveal that adjusting strategies were the most highly use strategies by the participants, whilst evaluating strategies were reported the least. The following sections report on the findings and discussions on the application of these four meta-cognitive self regulated learning components by the participants in the present study.

6. 2.1 Adjusting Strategies

Adjusting strategies involve problem solving skills. Marzano in his ‘*Dimensions of Learning*’ framework (1992) defines problem solving as “overcoming constraints or limiting conditions that are in the way of pursuing goals’. Self regulated learners are capable of monitoring their learning and making adjustment to the changing demands in their learning environment (Cohen, 2012; Wolters, 2003, 2004; Wolters & Pintrich, 2001; Zimmerman, 2008). In the current study, the participants reported high frequent use of adjusting strategies with the average mean score of [**M=3.62**]. Descriptive statistics of adjusting strategies scores i.e., mean and standard deviation were calculated for the whole ten (10) items. Table 6.1 below shows to which extent the participants used the adjusting strategies in their language learning.

Table 6.1: The Use of Adjusting Strategies by the Participants

ITEMS THAT ASSESS ADJUSTING STRATEGIES [N=170]		Mean	Interpretation
26.	When I face a difficulty in completing a task, I seek help from peers.	4.17	H
27.	When I face a difficulty in completing a task, I try different alternatives to solve a problem / find out the solution.	4.04	H
22.	When I face a difficulty in completing a task, I use various kinds of resources to make my understanding clear e.g. graphs, charts, concepts, reference materials such as dictionaries, textbooks, handouts, glossary, computer programs, or databases, the CD ROMs, the Internet.	3.81	H
24.	When I face a difficulty in completing a task, I make sure that the content is understood clearly by asking for explanation, confirmation or examples.	3.70	H
25.	When I face a difficulty in completing a task, I try to overcome comprehension problems by linking what I hear, read and see to what know or have learnt.	3.66	H
30.	When I face a difficulty in completing a task, I encourage myself to keep on trying until the suitable way(s) to solve a problem can be found or the task is accomplished.	3.64	H
29.	When I face a difficulty in completing a task, I use background knowledge, experiences and earlier information to learn, (e.g. considering consequence of the problem/information/ event).	3.63	H
21.	When I face a difficulty in completing a task, I revise my plan, if it is not working to my expectation / satisfaction.	3.46	M
28.	When I face a difficulty in completing a task, I make new guesses based on what I know about world, subject, topic, issue and language when the previous one is not correct.	3.32	M
23.	When I face a difficulty in completing a task, I ignore the problems that occur.	2.75	M
FACTOR AVERAGE		3.62	

Out of the ten (10) subscales, seven (7) items scored at the higher level of strategy usage as suggested by Mokhtari and Sheorey (2002). The participants reported that “*When I face a difficulty in completing a task, I seek help from peers*” [Item 26; M=4.17] and “*When I face a difficulty in completing a task, I try different alternatives to solve a problem / find out the solution*” [Item 27; M= 4.04]. These indicate that when they encounter problems in learning, they will not ignore the problems that occur [item 23; M=2.75] rather they will rather seek assistance from their friends and try to find alternative solutions to the problems. Alternately, they used “*various kinds of resources to make their*

understanding clear e.g. graphs, charts, key concepts, reference materials such as dictionaries, textbooks, handouts, glossary, computer programs, or databases, the CD ROMs, the Internet” [Item 22; M=3.81] , and “ they clearly asked for more explanation, confirmation or examples” [Item 24; M=3.70] in order to make sure the content is well understood.

It is clear that the participants of the present study employ appropriate adjusting strategies when they encounter learning problems. They appear to look for learning support from their peer most of the times. They also use different kinds of available resources to help them in learning. They ask for more clarification when in doubt, and try to link the present learning tasks to their background knowledge. These participants even use reference materials such as dictionaries in order to help them understand the task comprehensively. These learning activities which demand high level of meta-cognitive processing, imply that the participants have a good control of their affective states. In employing and adjusting strategies in their learning, they show ability to solve the learning obstacles by relating to their knowledge and select appropriate strategies or information from different resources.

6. 2.2 Monitoring Strategies

Monitoring strategies were reported as the second highest meta-cognitive strategies used by the participants in the current study (**M=3.61**). Table 6.2 below shows the overall and subscale mean scores of monitoring strategies as used by the participants in the study.

Table 6.2: The Use Of Monitoring Strategies By The Participants

ITEMS THAT ASSESS MONITORING STRATEGIES [N=170]	Mean	Interpretation
15. While completing a task, I ask myself whether I know what I need to know.	3.75	H
18. While completing a task, I ask myself what important information should be remembered.	3.70	H
16. While completing a task, I ask myself whether what is paid attention to is important for learning the subject, topic or issue.	3.70	H
20. While completing a task, I use the information gain to decide whether the predictions or answers are correct.	3.64	H
14. While completing a task, I compare what I am hearing, reading and seeing with what I know.	3.62	H
12. While completing a task, I ask myself how well I am doing and whether I am working at an appropriate rate.	3.62	H
13. While completing a task, I ask myself whether I am on the right track and any weaknesses have shown up.	3.60	H
11. While completing a task, I check periodically whether the material is making sense to me.	3.56	H
17. While completing a task, I ask myself whether the appropriate techniques are being used.	3.48	M
19. While completing a task, I ask myself whether the on-going Information relates to other subjects.	3.47	M
Factor average	3.61	

As shown in Table 6.2, out of 10 items for monitoring sub-strategies, only two (2) items were moderately used by the participants. These two items were no.17 [M=3.46] “*While completing a task, I ask myself whether the appropriate techniques are being used*”, ; and item no. 19 [M=3.39] “*While completing a task, I ask myself whether the on-going information relates to other subjects*”. The other sub-strategies were used at a very high frequency level with the mean scores ranged between (M=3.75 – M=3.56) accordingly.

These scores entail that participants reasonably monitor and check the appropriateness of the strategy being used and tend to apply the strategies while learning English into other subjects. The findings revealed that, monitoring strategy item no.15, *While completing a*

task, I ask myself whether I know what I need to know' found to be the highest frequently used sub-strategy by the participants (**M=3.75**). This finding reflects that the participants in the study have the ability to check the retrieval of required information while engaging in the language tasks. They even pay full attention on the learning subject. This reveals that learners tend to check the importance of information they gained from the task and effectively use their prior general knowledge as well as their linguistic knowledge to complete the task given.

6.2.3 Planning strategies

Although *Planning* strategies were ranked as the third most frequently used strategy by the participants in the study (**M=3.55**), the frequency of usage of all the strategies under this category were still rated as high. The following Table 6.3 provides a summary of overall scores for planning strategies.

Table 6.3: The Use of Planning Strategies by The Participants

ITEMS THAT ASSESS PLANNING STRATEGIES [N=170]		Mean	Interpretation
2.	I identify in advance the aspects of information to look for, and focus on that particular information before completing a task.	3.94	H*
6.	I check in advance personal comprehension of the instruction, lecture, and materials before completing a task and ask for further information if necessary.	3.83	H
3.	I decide what is already known about the subject, topic, or issue that will be helpful before completing a task.	3.71	H
9.	I think in advance about strategies and tactics that I can use to understand the subject, topic or issue before completing a task.	3.63	H
4.	I identify problems that might be encountered in the tasks.	3.53	H
10.	I try to find out what can be done in sequence to make lectures or texts understandable before completing a task.	3.52	H
7.	I make predictions of what to get out or answers of the questions before completing a task.	3.44	M
5.	I decide in advance to ignore mental, physical and environmental distractions before completing a task.	3.36	M
8.	I anticipate what information or event will occur next before completing a task.	3.26	M
1.	I set my own learning objectives before completing a task.	3.24	M
Factor average		3.55	H

Based on the findings in Table 6.3, the highest frequency of strategy usage under planning strategies was found for subscale item no.2 [**M=3.94**], *I identify in advance the aspects of information to look for, and focus on that particular information before completing a task*. Strategy items no. 6, 3, 9, 4, and 10 were also rated as high frequently used by the participants. On the other hand, the other four sub- strategies namely items no. 7, 5, 8, and item 1, were moderately used by the participants, with item no.1, *I set my own learning objectives before completing a task*, found to be the lowest strategy used in terms of planning category [**M=3.24**].

These findings affirmed that the key distinction between strong and weak learners are depending on their ability to direct, systematize and make connections among various existing strategies while learning. In the current study, participants reported that they prepared themselves to confront any obstacles before, during and after the completion of tasks. The high scores ranked for planning strategy items no. 4, 9, 3, 6 and 2, indicate their abilities to plan before they learn. It is clear that they identify in advance the aspects to look for before completing the given tasks. Moreover, they also use their prior knowledge to further decide what is already known about the subject, topic, or issue that will be helpful before completing a task. At this point in their learning, students make a plan of what they need to do and establish goals, organizing their thoughts and activities, in order to undertake the achievement of tasks.

6.2.4. Evaluating strategies

Among all the four meta-cognitive categories, evaluating strategies seem to be the least preferable strategies reported by the participants in the study. Although it was rated as the least used strategy, but, the overall mean for evaluating strategies [**M=3.51**], was still high. Table 6.4 below displays the overall mean scores for evaluating strategies.

Table 6.4: The Use Of Evaluating Strategies By The Participants

ITEMS THAT ASSESS EVALUATING STRATEGIES [N=170]	Mean	Interpretation
40. After completing a task, I judge whether the newly acquired information is worth learning / useful for future learning.	3.79	H
31. After completing a task, I judge whether my goals were met.	3.66	H
39. After completing a task, I decide whether the newly acquired information supports / contradicts that already known.	3.57	H
37. After completing a task, I judge how much I learnt.	3.54	H
38. After completing a task, I judge whether predictions/answers are correct.	3.53	H
35. After completing a task, I think about other strategies that may help in this circumstance.	3.50	H
33. After completing a task, I consider whether / how the knowledge/strategies can be applicable to other situations in the same subject.	3.47	M
32. After completing a task, I decide whether the strategies used are suitable and helpful for achieving the objectives.	3.47	M
34. After completing a task, I consider whether / how the knowledge/strategies can be applied to similar situations in other areas.	3.44	M
36. After completing a task, I make an oral or written summary of ideas/ lessons.	3.11	M
Factor average	3.51	H

The findings displayed in Table 6.4 show that, for evaluating strategies, item no. 40 *After completing a task, I judge whether the newly acquired information is worth learning / useful for future learning*, was the most frequently sub- strategies preferred by the participants in the study [M=3.79]. This implies that learners have the ability to judge the worthiness of their own learning. The participants judged whether the new acquired knowledge can be used for future learning. They also checked whether they have achieved their learning goals, through the application of item no. 31 *“After completing a task, I judge whether my goals were met”* [M=3.64] ; item no.32 *‘After completing a task, I decide whether the strategies used are suitable and helpful for achieving the objectives’*.[m=3.54]

; and item no. 33 '*After completing a task, I consider whether / how the knowledge/strategies can be applicable to other situations in the same subject*'.^[m=3.50].

By assessing the correctness of their predictions, learners fairly evaluate how much they have learnt, how effective they used the strategies and in what situation would the strategies being reasonably applied to another subject of study.

Based on the findings, it is important to highlight that the participants in my study, used Meta-cognitive Self Regulated Learning strategies at the initial, during and final stages of the tasks. This is in line with Schraw and Dennison (1994), who contend that individuals with high level of meta-cognitive strategies appear to excel in planning, managing information, monitoring, debugging, and evaluating. Although they reported the use of all four Meta-cognitive self regulated strategies in their language learning as shown in Figure 6.1 and Table 6.5 below, ESL learners in the current study, however, perceived themselves stronger at adjusting (**M=3.62**) and monitoring strategies (**M=3.61**) than the evaluating strategies (**M= 3.51**).

Figure 6.1

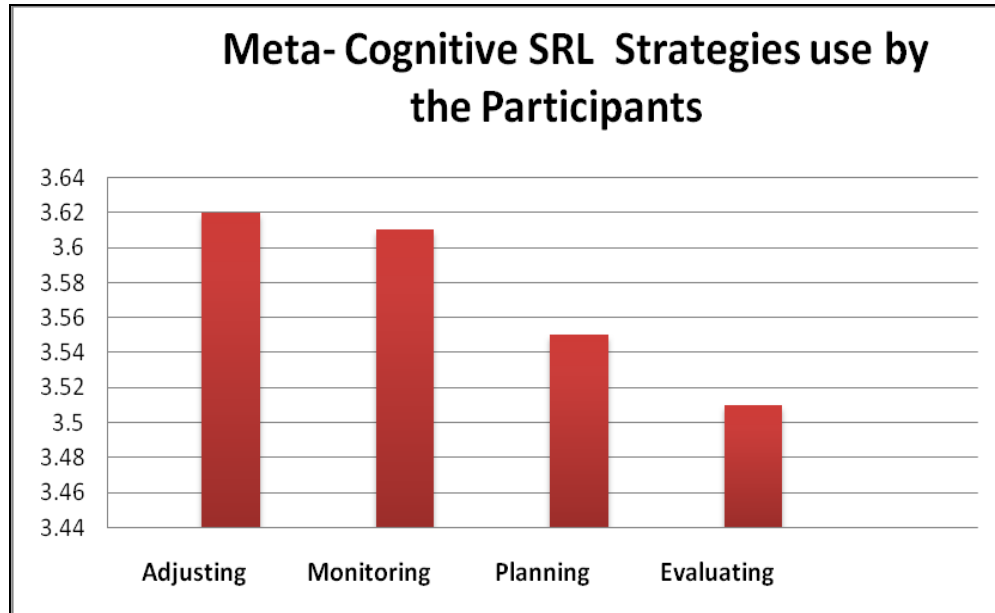


Table 6.5

Descriptive Statistics of Meta-Cognitive Self-Regulated Learning Strategies used by participants.
[n=170]

META-SRL Strategies	Rank order of usage	Mean	Interpretation
Adjusting	1	3.62	HIGH*
Monitoring	2	3.61	HIGH*
Planning	3	3.55	HIGH*
Evaluating	4	3.51	HIGH*
TOTAL		3.57	HIGH*

*Key to averages: 3.5 or higher =HIGH, 2.5 - 3.4 = MODERATE, 2.4 or lower= LOW
[Mokhtari and Sheorey, 2002]

Based on this finding, I came to a logic conclusion that ESL learners in the study scarcely self-evaluate their own learning due to the lack of exposure to the higher order thinking skills and activities in their learning process. In the Malaysian context and culture, self evaluation and critical thinking seem to be ‘an alien practice’ (Abdul Rashid & Awang Hashim, 2008), as it is regarded as a form of western culture. In Malaysia too, lower order thinking, instead of higher order thinking, still dominates teaching methods and learning outcomes (Zohar, 2013; Ivie, 1998).

A preliminary report of the Malaysian Education Blueprint 2013-2025 further supports that most lessons in schools did not sufficiently engage students in constructive thinking where teachers relied on lecturing format while the learning focus is more on achieving surface-level of understanding (Malaysia MOE, 2012). Moreover, the lack of thinking skills among students in Malaysia is also depicted in the report of Program for International Student Assessment (PISA) in 2012 where according to the report published, Malaysia ranked 39 out of 44 countries on the assessment on creative problem-solving, while neighboring country Singapore came out tops with a mean score of 562 (Organization for Economic Co-operation and Development, 2012).

This scenario might explain why evaluating strategy was rated as the lowest Meta-SRL strategy used by the participants in the study. As it is ranked as the highest order thinking skill, self-evaluation plays an important role in the overall development of an individual. Moreover, evaluating skills provide more opportunities for learners to self assess and reflect on what they have learnt and evaluate how well they have accomplished a learning

task. However, the recurrent application of these strategies as reported by the current findings, imply the lack of ability of the participants in the current study to deal with tasks requiring higher level of thinking (Topcu & Yilmaz-Tuzun, 2009; Zohar & Dori, 2003).

In addition, the least use of evaluating strategies by the participants in the current study may possibly indicate the challenges that these participants experienced in understanding and integrating higher order thinking skills in relation to their learning. Although they may have been exposed to language activities or language tasks which inculcate them to involve in a critical thinking processes, however, it seems that the exposures and their engagements in that particular language tasks are still insufficient for these learners to further self evaluate their own learning. Even though they are able to identify problems and monitor the strategies used in completing their language tasks, they still lacked a specialized knowledge of synthesizing and evaluating the effectiveness of the strategies used. The least used of the following evaluating strategies as reported by the participants:- *Checking appropriateness of the strategy in other areas applicability; Strategy suitability & effectiveness; and Checking appropriateness of the strategy within subject applicability* corroborate the above-mentioned challenges faced by the participants in the study. The failure to synthesize and transfer the learnt knowledge into another learning context reflects the lack of these so called higher order thinking skills amongst the participants in the current study.

As Selcher (2005) notes, undergraduates need to familiarize themselves with good construction of knowledge and habits of critical thinking so that they will be able to connect the learnt concepts with the outside world and such skills are pertinent in

facilitating meaningful task-based learning. To become life-long learners, individuals must have access to needed information, and must also be able to judge the quality of the information to which they are exposed to. In relation to language courses, the context of thinking levels are said to be less conceptualized (Waters, 2006) but current trends in graduate education stresses on competences that are transversal to prepare students for the real world (Jaganathan et al., 2014). Yet, the outcomes that require higher order thinking skills cannot be easily expressed as they are related to cognitive skills. Despite the call for integration of higher order thinking skills over the long years, studies have shown that there is still a need to execute its implementation practically as students do not evaluate results and source for information very often (Walraven et.al., 2009; Sulaiman et.al., 2008).

According to Zailani & Dahlan (2005), teachers in Malaysia have a tendency to focus on students mastering or knowing the basic contents of the subjects due to the exam oriented culture, rather than understanding and applying higher-order thinking skills. In the context of Malaysian educational setting, the following activities namely discussion in groups, pairing activities, and questioning and answering that are often used by teachers/instructors involving thinking skills in the classroom (Kamarudin & Ghani, 2011). However, these three cognitive activities do not really indicate higher-order thinking skills development process in teaching (Kamarudin & Ghani, 2011). These reasons validate the lack of these skills among the participants.

In sum, the results of the current study corroborate with the findings of other studies which claim that successful regulated learners used a larger number and wider range of meta-

cognitive strategies for active learning involvement, employed them more effectively, fitted them more closely to the task, and understood the task better than did unsuccessful language learners, (see Griffith, 2003; Danuwong, 2006; Zare, 2010; Ku & Chang, 2011; Küçük, 2012; Yıldırım & Akcayürek, 2013; Kayaoglu, 2013; Sadati & Simin, 2015).

The findings from both, the questionnaire and the interviews also indicate that participants' development of higher order thinking skills remained within the information given instead of going beyond the information. Although the elements of transfer of knowledge (Krawthwohl et al., 2001) and finding solution to problems (Brandsford and Stein, 1984) are present, however, the specialized skills to gather, evaluate and manage the resources well are still inadequate for the participants to incorporate higher level order of thinking skills into their language learning scope.

The above conclusion, hence, entails two main implications. First, it is important to note that the thinking process at a higher order should be interwoven, articulated and taught in the classroom. While language task-based activities are assigned to students, they need also to be informed of the aim of instilling higher order thinking capabilities in the completion of their work. The teachers do need to monitor and facilitate the students with appropriate meta-cognitive thinking skills so that they will directly or indirectly incorporate the higher order thinking skills in their work. The findings from this study, present only a smaller part of a larger component of integrating higher order thinking skills in English language courses. Thus, it provides a generic interpretation from the selected samples. Nevertheless,

it provides a platform for further investigations on the specific meta-cognitive self regulated learning strategies that help to enhance the students' ability to facilitate a much higher order thinking skills into language learning. In the context of this study, the limitations were the small samples group and they were not taught the methods of incorporating higher order thinking skills in accomplishing their language tasks. A bigger sample size and a detailed qualitative analysis will provide a more comprehensive analysis of the investigation.

6.3 The Overall Pattern of Meta-cognitive SRL Strategies used by the participants

The results have clearly provided evident that different learners have different levels of strategy usage. According to Schraw & Dennison (1994), individuals with high level of meta-cognitive strategies seem to excel more in planning, managing information, monitoring debugging and evaluating. Figures 6.2 explains the strategy patterns of the participants of different proficiency levels.

Figure 6.2: Patterns of Meta-Cognitive SRL Strategies used by different Proficient Levels

	HIGH		MODERATE		LOW	
META-SRL STRATEGIES	Mean	std	Mean	std	Mean	std
Checking the attention	4.4000	.84327	4.0000	.94281	3.8000	.42164
Checking the retrieval of required	4.2000	.78881	3.9000	.56765	3.6667	.70711
Directing attention selectively	4.2000	.78881	3.8000	.63246	3.6000	.69921
Seeking peer support	4.1000	.87560	3.7000	.67495	3.6000	.51640
Judging that the goal has been met	4.0000	.66667	3.7000	.67495	3.6000	.96609
Accessing various resources	4.0000	.81650	3.7000	.48305	3.6000	.69921
Checking the predictions/answers	4.0000	.70711	3.7000	1.05935	3.6000	.51640
Preparing to confront obstacles	4.0000	1.05409	3.7000	.82327	3.5000	1.08012
Checking importance of the strategies	4.0000	.94281	3.7000	.48305	3.5000	.84984
Seeking related prior knowledge	4.0000	.66667	3.6000	.96609	3.5000	.84984
Comprehension check	4.0000	.66667	3.6000	.96609	3.5000	.70711
Linking with prior knowledge	4.0000	.81650	3.6000	.51640	3.4444	.88192
Judging how much learned	3.9000	.73786	3.6000	.69921	3.4000	.96609
Checking progress	3.9000	.87560	3.6000	.69921	3.4000	.84327
Asking for clarification	3.9000	.87560	3.5000	.84984	3.4000	.84327
Detecting weaknesses/obstacles	3.9000	.56765	3.5000	.52705	3.4000	.69921
Judging worthiness of learning	3.8000	.91894	3.5000	.84984	3.4000	.69921
Strategy suitability & effectiveness	3.8000	.78881	3.5000	.84984	3.4000	.69921
Trying alternatives	3.8000	.91894	3.5000	.70711	3.4000	.96609
Checking linkage to other subjects	3.8000	1.03280	3.5000	.70711	3.3000	.82327
Seeking other suitable strategy	3.7000	.82327	3.5000	.52705	3.3000	.67495
self encouragement	3.7000	.67495	3.5000	.97183	3.3000	.94868
Making new guesses	3.7000	.82327	3.4000	.51640	3.3000	.94868
Checking appropriateness of the strategies	3.7000	.82327	3.4000	.51640	3.2222	.83333
Comparing new knowledge with known knowledge	3.6000	.51640	3.4000	.84327	3.2222	.97183
Logic reasoning	3.6000	.69921	3.4000	.51640	3.2000	.78881
linking with prior knowledge	3.6000	.96609	3.4000	.51640	3.2000	.91894
Work ordering	3.6000	.84327	3.4000	.51640	3.2000	.91894
Choosing strategies for the task	3.6000	.69921	3.4000	1.07497	3.2000	1.03280
Prediction the incoming information	3.6000	.51640	3.3000	.48305	3.1000	.87560
Intending to ignore distractions	3.6000	.51640	3.3000	.82327	3.1000	.56765
Expecting the encountered problem	3.6000	.69921	3.3000	.94868	3.1000	.99443
Assessing correctness of the predictions	3.5000	.70711	3.3000	.67495	3.0000	.81650
Other areas applicability	3.5000	.84984	3.3000	1.05935	3.0000	1.24722
Within subject applicability	3.5000	.84984	3.2000	.78881	2.9000	.73786
Revising the plan	3.5000	.70711	3.2000	.63246	2.9000	.99443
Goal setting	3.5000	.70711	3.2000	1.03280	2.9000	.73786
Summarizing lesson	3.3000	.82327	3.2000	1.03280	2.9000	.87560
Predicting outcomes/answers	3.2000	.91894	3.1000	.73786	2.8000	1.13529
Ignoring problems	2.8000	.78881	2.9000	.87560	2.6000	1.07497
	3.7525	.78257	3.4750	.74420	3.2864	.83822

Figure 6.2 displays the use of Meta-Cognitive Self Regulated Strategies by the participants of different proficiency levels. The findings reveal that regardless of their proficiency level, all participants in the study employed Meta-cognitive SRL strategies in their learning. The high proficient participants used the strategies at a higher level with the mean scores ranged between 4.4 - 4.0 for the top ten most frequently used strategies shown in Figure 6.5. Comparatively, the moderate and low proficient participants apply the strategies at a moderate level with the mean scores of 4.0-2.9. The mean scores for moderate and low proficient participants are 3.47 and 3.28 respectively.

It is also interesting to note that, the use pattern of Meta-Cognitive Self Regulated Strategies differs between the groups as shown in Figure 6.5. These differences conform to the claim made by previous researchers regarding the use of learning strategies, that low and high proficient learners can be distinguished from their different use of learning strategies and that, high performing learners were better users of Meta-cognitive self regulated learning strategies (see Kosnin, 2007; Mezei, 2008; Turan & Demirel, 2010; Sardareh & Saad, 2012). The high proficient participants, monitored their learning by checking their attention towards the task given, and check the information needed for them to complete the task; while the moderate and low participants made adjustment to their learning by linking their prior knowledge and either seeking help or trying alternate strategies.

The findings also reveal the limited awareness of planning and evaluating strategies amongst the participants of the three proficiency levels. According to Zimmerman (2008),

planning is the most crucial component of self regulation and it has been claimed to be a good predictor for success. The model of self regulated learning proposed by Zimmerman (2008) suggests that, during the forethought and planning phase, learners examine the learning task and set detailed objectives toward finishing that task. As planning involves mastering strategies such as: goal setting, activating prior knowledge, and even predicting answers; the ability to plan plays a tremendous role in learning (Palinscar & Brown, 1984; Zimmerman & Pons, 1986).

Moreover, it is also one of the features that differentiate between the high proficient learners and the low proficient learners. The former spending more time planning, which has shown to be crucial for their higher achievement (Zimmerman & Kitsantas, 2005; Ericsson, et.al, 2006). On the contrary, the findings of the current study reveal different results. It is very clear that, participants in the study utilized more strategies during the performance phase than the forethought and self reflection phases. The participants might have overlooked the importance of planning strategies throughout their learning. It is believed that the lack of awareness to plan their learning tasks, could be one of the contributing factors affecting the application in the next cycle of learning phase. This could be the reason why self reflection has become the least employed strategies employed by participants in the study.

Previous studies revealed that learners had a tendency to use their prior achievements as a guide for future learning improvement. Zimmerman & Kitsantas, (2000) state that self-reflections from prior efforts affect the subsequent forethought processes. However, the

current study reveals that the participants in the study reported lack of self reflection, and infrequently evaluate their own learning.

As a conclusion, the current study reveals that different learners have different level of strategy usage. The study highlighted that high proficient ESL learners appear to use more Meta-Cognitive SRL strategies than moderate and low proficient learners. These differences affirm the results of the previous studies in the literature that, low and high proficient learners can be distinguished from their different use of learning strategies and that, high performing learners were better users of Meta-cognitive self regulated learning strategies (see Kosnin, 2007; Mezei, 2008; Turan et al, 2010; Sardareh et al, 2012). Issues related to the difference in strategy use by different level of language proficiency is not adequate the existing literature. The difference in strategy use by successful and unsuccessful language learners need to be addressed in a more unified manner (Griffiths, 2003) and further research is needed to understand the difficulties faced by the learners while learning. Observations on the unsuccessful language learner strategy use are required to understand the reasons behind the low performance of these students, and perhaps to identify what strategies they avoided.

Therefore, more research is required to find the role of meta-cognitive self regulated learning strategies in determining the effectiveness of individuals' attempts to learn another language, specifying the characteristics of good language learners, and the type of strategies they use in a specific language task. Moreover, since effective learners used more Meta-cognitive SRL strategies than the less effective ones, strategy training that incorporated

Meta-cognitive SRL strategies should be implemented in the classroom to help them learn better. Drawing on these tentative findings, language instructors should fine tune their model of learning strategy training that is compatible with instructional goals, students' learning styles and proficiency levels, and learning settings.

The next section will discuss on how the use of strategies are linked to the motivational factors of self regulation. As mentioned earlier in chapter 2 , self regulated learning is the process where one is meta-cognitively, motivationally and behaviorally proactive in the learning process (Zimmerman and Martinez, 1986). More specifically, self regulated learners monitor their own progress towards self set goals and are therefore able to reflect on the effectiveness of their learning approaches. They also tend to view the learning task as intrinsically interesting and worth-while, and have high levels of self –efficacy. Hence, the following section will explore further on how self efficacy influences the use of strategies among the participants.

6.4 The Use of Meta-Cognitive Self Regulated Learning Strategies and Learners' Self Efficacy.

This section will provide answers to the following research question: *Is learner's self-perception of his/her language ability correlated to his/her use of Meta-cognitive SRL strategies?*. Self-efficacy has long been considered as a key component of self-regulated learning among adult learners as well as an essential variable in maintaining control over one's actions (Pintrich and Schunk, 2002). In their study, Baka & Khan (2016) further

explain that higher academic goals and aspirations were shown by adolescents having high self-perception than low-self perceived learners. As self efficacy is found to be critical in influencing learners' behavior towards learning and can make a significant contribution in helping university students to succeed, therefore, I believe that it is important to examine the relationship between participants' self-perception of their English language abilities and the use of Meta-cognitive Self Regulated Learning strategies.

The Meta-SRLQ included a demographic questionnaire which used self -rating scale to determine the participants' own judgment of their perceived English language abilities. The participants were asked to rate their English language ability using one of the four options: *excellent, good, fair, and poor*. Based on Figure 6.3 below, 48% of the participants rated themselves as 'fair' ESL language learners, while the other 40% of the participants perceived themselves as "good language learner". Whilst, the remaining 4% of the participants regarded themselves to be excellent. Based on the results, participants who rated themselves as 'good' and 'excellent', appear to use Meta-cognitive Self Regulated Learning Strategies more than the others.

Figure 6.3
Participants' Self Perception of Language Ability

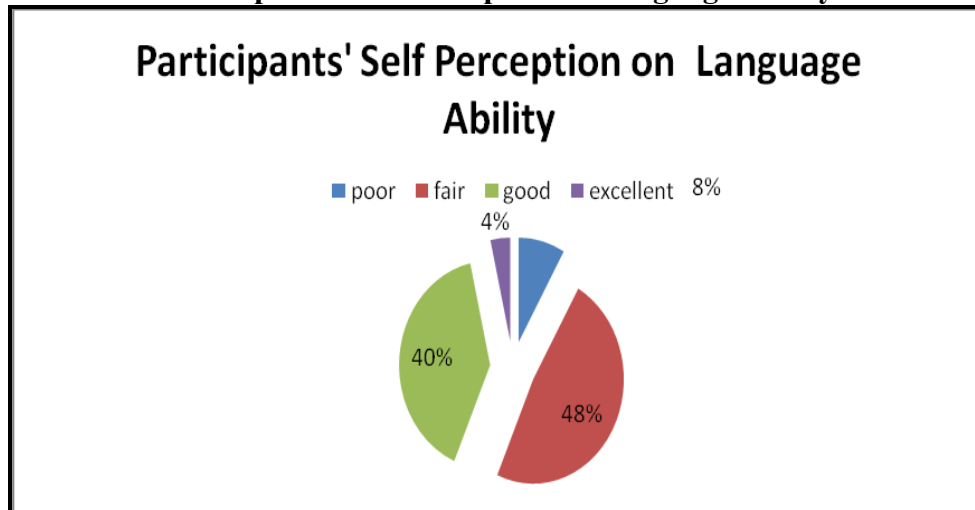


Table 6.6
Participants' self-efficacy and Meta-cognitive –Self Regulated Learning Strategies' scores

Type of participants according to their self –Perception level	N	Meta-Cognitive SRL strategies' scores (Average Mean)
Excellent	6	3.7
Good	68	3.61
Fair	82	3.55
Poor	14	3.38

The results appear in Table 6.6 support the findings of other related studies (Aydin, 2015; Coutinho & Neuman, 2008; Long, et.al., 2007; Pajares & Schunk, 2001), which focused on the relationship between self-efficacy and use of learning strategies. These studies have indicated that self-efficacy has significant and positive correlation with learner's academic.

For example, Aydin (2015) conducted a study on a relationship between high school students' self-efficacy perceptions regarding biology, the meta-cognitive strategies they use in the course and their academic motivation for learning biology. His results found out that the use of meta-cognitive strategies and self efficacy made a significant prediction of students' intrinsic motivation to learn Biology.

In a similar vein, a relatively new study by Wolters and Corkin (2012), found that a thorough and well managed approach for study was more likely to be adopted by students having high self-efficacy for reading and writing, while a superficial approach was more likely to be adopted by students with low-self-efficacy. The findings of the current study reveal that the high self efficacy participants show their abilities to use higher order skills such as monitoring and adjusting strategies more frequently than the low perceived participants. These participants oversee their own language learning and explicitly ask whether they are doing well or not; whether they are proceeding with obstacles or not and identified a problem and take steps to eliminate the problems.

From the above Table 6.6, we can see that, participants who perceived themselves as *fair*, *good* and *excellent*, obtained higher Meta-Cognitive Self Regulated Learning strategies' scores than those who perceived themselves as 'poor' ESL learners. Based on these results, it is concluded that participants with high self-perception used more language learning strategies as compared to the low self-perceived participants.

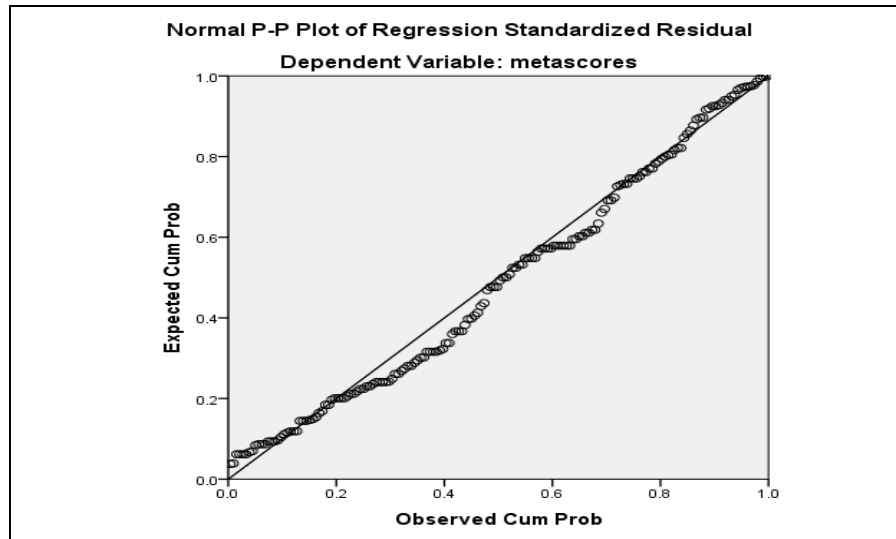
6.5 Relationship between self perception and the use of Meta-cognitive self regulated Learning Strategies.

To test whether there is any relationship between these two variables, Pearson correlation test was computed. Table 6.7 below, illustrates the Pearson correlation result of the relationship between the use of Meta-cognitive SRL strategies and the participants' self perception of their English language abilities.

Table 6.7
Pearson Correlation result of the relationship between the use of Meta-cognitive SRL strategies and Self perception on Language Ability

Categories	r	Sig.
Meta- Cognitive SRL Strategies	0.152 ^a	0.0
Self Perception on Language Ability		

Figure 6.4 Scatter Plot of the Assumption of Linearity between Self perception & Meta-cognitive cores



As displayed in Figure 6.4, despite of minor outliers, the results show a weak positive correlation between the two variables. Although the correlation is weak, $r=0.15$, the results still show a linear relationship between the participants' self efficacy and their use of Meta-Cognitive Self Regulated learning strategies.

Research has found that self-perception beliefs and the use of Meta-cognitive Self Regulated Learning Strategies to have reflexive positive impacts on one another. Pajares and Schunk (2001) explain such a result by suggesting that high self-efficacy beliefs are associated with high achievement and indicated that high strategy use is an attribute of a good language learner. In this study, participants with high self perception of their language competencies reported high use of Meta-cognitive Self Regulated Learning Strategies. This

result shows that the higher the participants perceived their language abilities, the more likely they were to exercise control over their learning than the participants with lower self-perception. This is proven by the high Meta-SRLS average mean scores reported by participants who perceived themselves as *good* and *excellent* ESL learners (refer Table 5.7). The findings suggest that self-efficacy beliefs are related to Self Regulated learning variables and use of learning strategies. This is in line with Pajares and Schunk (2001), who reveal that students who believed they were capable of performing tasks used more cognitive and meta-cognitive strategies and persisted longer than those who did not.

As shown by the findings of the study, a positive relationship between self-efficacy and the use of meta-cognitive strategies self regulated learning strategies provides an inclusive explanation of students' self regulation behaviors in relation to social cognitive learning theory introduced by Albert Bandura (1986), and the theory of Meta-cognition proposed by Flavell (1979) , and Veenman, et.al. (2006). As discussed in chapter 2, these two theories grounded the whole development of the current study. The Social Cognitive Theory views learning as the interaction of three key processes, i.e., personal, behavioral and environmental influences. These three influences reciprocally interact with each other during the self-regulated learning process, and learners who are able to exert strategic control over each influence can be considered as self-regulated in their learning. According to Zimmerman (2000), self efficacy, being the most important personal factor, plays a central role in controlling the behavioral and environmental aspects of learners' self regulation. For example, students with high self-efficacy tend to display better quality

learning strategies to monitor their learning behavior and construct the learning environment.

The current study also reveals a significant relationship between Meta-cognitive Self-Regulated strategies and the participants' self efficacy. It can be interpreted that participants with a high sense of self-efficacy appear to be more strategic users. The growth of an individual's self-efficacy or level of confidence in successfully completing a task is closely related to efficient use of language learning strategies (Zimmerman, 1990). Learners' beliefs sheds light on how and why they select various approaches to language learning (Horwitz, 1999), and they do not typically participate in learning tasks for which they believe they are not skillful enough (Zeldin & Pajares, 2000).

The results of the present study corroborate with the findings of researchers such as Norastinia et.al., 2014; Adnan, 2011; Yilmaz, 2010; Magogwe & Oliver, 2007, which show that there is an obvious link between self-efficacy and language learning strategy use. In the current study, the participants who perceived themselves as more confident in their language learning abilities are better language learning strategy users as their beliefs about their abilities influence “the choices they make, the effort they put forth, their inclinations to persist at certain tasks, and their resiliency in the face of failure.” (Zeldin & Pajares, 2000: 215). According to the social cognitive theory, self-efficacy beliefs have an impact on the decisions people make and their course of action thereafter. As expected, the higher the sense of efficacy, the more energy and effort are used to keep trying tasks or situations that may be more difficult and challenging in nature.

It is noteworthy that the findings of the current study provide information for language learners by indicating that self-beliefs of language ability can affect their language achievement depending on the strength of their efficacy beliefs. The findings indicate that the stronger the level of student self-efficacy belief the higher will be his/her Meta-SRL scores and the lower the level of students' self-efficacy belief the lower will be the Meta-SRL scores. When learners have a strong beliefs in their abilities to perform tasks, they would create deeper interest in learning and developing their confidence in order to overcome difficulties of learning. This means that when learners have positive beliefs of their self language abilities, they also exhibit higher engagement in the classroom which may results in higher language achievement.

6.6 Chapter summary

Conclusively, there is a positive impact of self efficacy towards the participants' use of meta-cognitive self regulated strategies that can affect their performance. The findings reveal that learner's beliefs can be a strong mediating factor in their experience in the classroom. Taking into consideration on the impact of self efficacy towards learners' use of language learning strategies, it is important to raise ESL learners' self efficacy level in language learning. Lecturers or language instructors should adopt more a student-centered classroom environment by encouraging learners to participate actively in classroom activities. This in the same time will reduce learners' anxiety as they regularly engaging in highly demanding language tasks, they will develop and improve their self efficacy beliefs.

CHAPTER 7

CORRELATION BETWEEN META-COGNITIVE SELF REGULATED LEARNING STRATEGIES & LANGUAGE ACHIEVEMENT

7.0 Overview of the chapter

In this chapter, I will discuss the relationship between Meta-cognitive SRL strategies used by the participants in the study and their English language achievements. This chapter addresses research question 4: *Is there any significant correlation between Meta-cognitive SRL Strategies (Meta-SRL) used by learners and their achievements in English language as measured by: a) MUET Band Scores; and b) Language proficiency course exam Grades .*

This question is important as the major aim of this study is to examine the relationship between the Meta-SRL strategies used by the participants and how these strategies influence their language performances. Some studies (e.g., Magogwe & Oliver (2007); Hong-Nam & Leavell (2006); Wharton, 2000; Oxford & Nyikos, 1989; O'Malley & Chamot, 1985;) have shown that there is a relationship between learners' level of language proficiency and the use of learning strategies. The aforementioned studies, reported that language learners with advanced proficiency level tend to utilize very high use of learning

strategies and those with low proficiency level tend to utilize very low use of learning strategies. Wharton (2000), explains that it is the pattern of strategy use that contribute either to successful or unsuccessful language learner groups. Thus, one important question raises in this chapter is: *Are the frequency and type of language strategy used, subject to L2 learners' different levels of language proficiency?* Hence, the following sections will provide findings and discussion on the relationship between Meta-cognitive self regulated learning strategies and the participants' level of English language proficiency.

In the current study, the participants' levels of English language proficiency are determined by the Malaysian University English Test (MUET) scores and also their final grades obtained in the English language proficiency course. A benchmark study reported by Malaysian Examination Council (2005) reveals a good correlation between IELTS and MUET band levels ($r=0.662$), indicating that MUET is a reliable measurement of learners' English language abilities. Thus, in the current study, MUET band scores obtained by the participants are used to provide a diagnostic information of their level of English language proficiency. Table 7.0 below provides a band descriptor for MUET proficiency level which includes all the four skills, namely Listening, Speaking, Reading and Writing. This band descriptor helps us to understand the level of performance required to attain a particular band score in each of the criterion areas (refer Table 7.0 below).

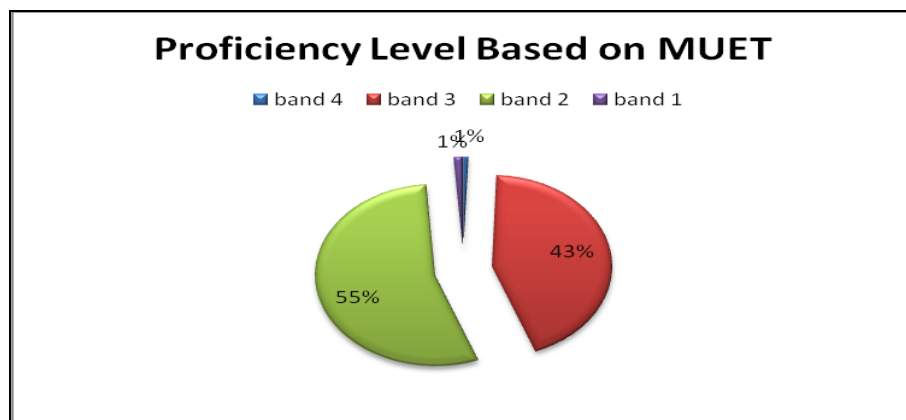
Table 7.0: MUET Band Scores

BAND	BAND 1	BAND 2	BAND 3	BAND 4
AGGREGATED SCORES	[Below 100]	[100 -139]	[140-179]	[180-219]
USER	Extremely limited user	Limited user	Modest user	Good user

Figure 7.0 below summarizes the participants' levels of achievement in MUET as reported by them in the questionnaire survey.

Figure 7.0

Level of Proficiency based on MUET Band Scores



Based on Figure 7.0, out of 170 participants who took part in the study, 55% of the participants are Band 2 users (*Limited user of English*), whilst 43% are Band 3 users (*Modest user of English*). The other 2% comes from Band 4(*Good user of English*) and Band 1 (*Extremely limited user of English*) respectively. In sum, the chart shows that most

of the participants in the current study are at the range of Band 2 and Band 3 ESL learners, and this indicates a low or modest level of English language proficiency among them.

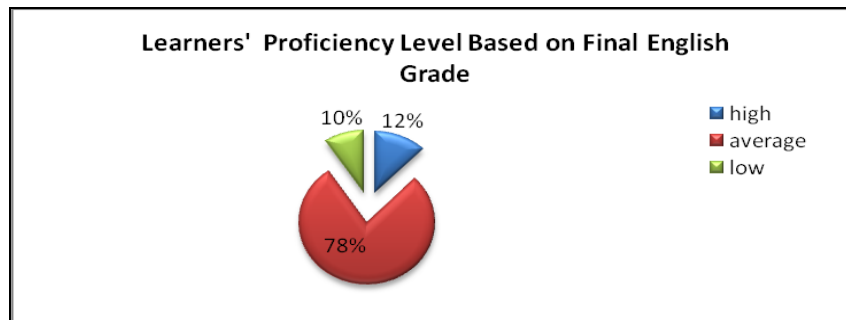
While Table 7.1 below shows the benchmark of grades that I use to interpret the participants' level of English language proficiency as measured by their final English grades obtained in the proficiency course. Participants who obtained 80-100 marks in their final English Exam, will be categorized as high proficient learners, while those with average marks of 60-79 will be regarded as moderate learners and the low proficient learners refer to those who score less than 59.

Table 7.1
Final English Language Grades

80-100	High Proficient Learner
60-79	Moderate Learner
40-59	Low Proficient Learner

Based on this benchmark grades, I have identified the participants in the current study into the following types of ESL learners according to their final English grades obtained for Foundation English Course.

Figure 7.1
Level of Proficiency based on Final English Grade



In the above Figure 7.1, 78% of the participants, are moderate learners of English, while 12% are high proficient learners and the rest 10% are low proficient learners of English. In order to investigate whether MUET scores obtained by the participants are related to the Final English grades achieved, a Pearson co-efficient test was run.

Table 7.2
Correlation between Participants' achievements in MUET and Final English grades

		Grade
MUET	Pearson Correlation	.337**
	Sig. (2-tailed)	.000
	N	170

Consequently, the result of the correlation test, as shown in Table 7.2 reveals a positive relationship between the participants achievement in MUET and their current performance in English as measured by their final English results. The correlation between MUET and final English grades is 0.337 and this significant correlation could be possibly due to the fact that the Foundation English Course syllabus is profoundly designed according to

MUET. Hence, based on this result, it is probable to suggest that MUET may have predictive ability on participants' English language achievements.

In the following sections, more findings on the relationship between Meta-cognitive self regulated learning strategy and the participants' English language achievements will be presented. The following section is divided into two sub-sections. Section A describes the correlation between Meta-cognitive SRL strategies use and the participants' MUET band scores, and section B explains further on the relationship between Meta-cognitive SRL strategies use and the participants' final English grades.

7.1 MUET achievement and the use of Meta-Cognitive Self Regulated Learning Strategies

Figure 7.2
The use of Meta-Cognitive SRL Strategies by different MUET Band Level

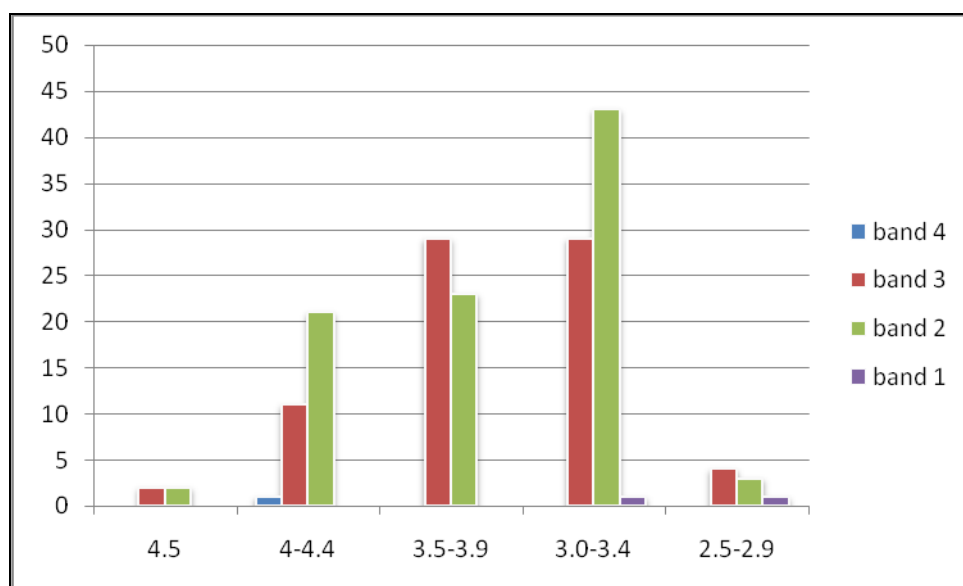


Table 7.3
The use of Meta-Cognitive SRL Strategies by different MUET Achievement Levels

META SRL USER	MUET Band 4	MUET Band 3	Frequency MUET Band 2	MUET Band 1	N
Very High	0	2	2	0	4 [2.35%]
High	1	11	21	0	33 [19.4%]
Moderate	0	29	23	0	52 [31.0%]
Low	0	29	43	1	73 [43.0 %]
Very Low	0	4	3	1	8 [4.7%]
N	1	75	92	2	170 [100%]

The findings in Table 7.3 show that 43% (n-73) from the total of 170 participants, are placed under **low** Meta-cognitive Self Regulated Learning strategies user. Among these users, 43 participants are those with MUET Band 2 , 29 of them obtained MUET Band 3, and only 1 participant with MUET Band 1. Another 30.5% [n-52] of the participants are regarded as *moderate* Meta-cognitive Self Regulated Learning Strategies user. The other 19.4% (n-33) falls under *high users*, 2.35% (n-4) *very high user* and the remaining 4.7% of the participants are *very low user* of Meta cognitive Self Regulated Learning Strategies. Overall, data in Table 7.3 reveals that the participants in the study appear to be within **low** to **moderate** Meta-cognitive SRL strategy users and these frequent users of Meta-cognitive Self Regulated Learning strategies are mostly those who obtained Band 2 for their MUET results, which are regarded as limited users of English.

As Bremner (1999) pointed out the link between proficiency and strategy use might be that strategies are simply features of proficiency, which means that only by reaching a certain level will a student be likely to use a given strategy. Therefore, the researcher made a logical connection here that the low proficiency level of the participants (*as measured by their MUET achievement*) may be one of the reasons for their **low** and **modest** application of Meta-cognitive Self Regulated Learning Strategies. It appears that, because of the participants' limited level of English language proficiency that hinder their regulation of Meta-cognitive Self Regulated Learning strategies in learning which affected their English language achievement.

7.2 The Relationship between MUET achievement and the use of Meta-Cognitive -Self Regulated Learning Strategies (Meta-SRLS).

To further investigate the relationship between the participants' use of Meta-SRLS and their MUET achievement, a correlation test is conducted. The following Table 7.4 shows the result of the correlation test.

Table 7.4
Pearson Coefficient between Meta-Self Regulated Learning Strategies
and MUET Achievement

		MUET BANDS	META-SRLS
MUET BANDS	Pearson Correlation	1	.161*
	Sig. (2-tailed)		.005
	N	170	170
META-SRLS	Pearson Correlation	.161*	1
	Sig. (2-tailed)	.005	
	N	170	170

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

The Pearson's correlation results in Table 7.4 above, reveals a significant and positive relationship ($r=0.161$, $p=0.000$) between the participants' achievement in MUET and their Meta-SRL strategies' scores. The findings are fairly consistent with the results found in a study conducted by Rahman (2010). In his study, Rahman (2010) found a significant correlation between the use of meta-cognitive strategies and achievement in English language as measured by MUET achievement. Other studies also have indicated that students who are exposed to meta-cognitive strategies are those who are more proficient in English (Wafa, 2003; Wend, 2009; and Yang, 2009). These students frequently apply meta-cognitive strategies to achieve high result (Rahman, 2010). Therefore, the positive correlation found in the current study provides more support to the existing literature that there is a significant relationship between ESL learners' achievement in MUET and their use of Meta-cognitive self regulated strategies. This provides a reliable conclusion that MUET results can be one of the predictors that influence the use of Meta-cognitive strategies among ESL language learners in the current study.

7.3 The Relationship between the use of Meta-Cognitive Self Regulated Learning Strategies (Meta-SRLS) and English Language Performance

The participants' final English language grades obtained for Foundation English Course is represented in Table 7.5.

Table 7.5
The use of Meta-cognitive SRL strategies and different level of proficiency

META SRL USER	Final English Scores			N
	40-59 [C-C+]	60-79 [B-B+]	80-100 [A-A+]	
Very High	0	2	2	4
High	5	16	9	32
Moderate	6	26	20	52
Low	4	39	28	71
Very Low	3	4	4	11
N	19	88	63	170

META SRL USER	CGPA			N
	2.00- 2.33 C-C+	2.67- 3.33 B- - B+	3.67-4.00 A- -A+	
band 4			1	1
band 3	6	27 [36%]	42 [56%]	75
band 2	10	62 [67%]	20 [21.73%]	92
band 1		1	1	2
N	16	90	64	170

In Table 7.5, 88 participants placed themselves within the range of B- to B+, while 63 of them fall within the range of A- to A+. The remaining 19 participants fall within the range

of C- to C+. It can be seen that 39 participants who are regarded as low Meta-SRL users placed themselves in all three CGPA category with 4 of them within C-C+ range, 39 of them within the range of B- -B+, and 28 of them within the range of A- A+. As for moderate Meta-SRL users, 6 of them are within the range of C- C+, 26 are within the range of B-B+ and the remaining 20 are within the range of A-A+. Amongst the 52 participants who are regarded as high Meta-SRL strategy users, only 9 of them scored the CGPA within the range of A- to A+, followed by 16 of them with B- to B+ CGPA range. Overall, despite of their Meta-SRL scores, it can be concluded that 89% of the participants, are mostly in the CGPA range of A- - A+ and B- - B+, with only 19 (11%) out of 170 scoring within C- C+ range. In other words, participants who reported frequent use of Meta-SRL strategies, might be able to score good English language grades.

Based on the English language grades achieved by the participants, the participants are categorized into three levels of language proficiency: high, moderate and low ESL language learners. The level of proficiency is based on the CGPA grading system described in the previous section. Participants who are within the range of A-A+ are regarded as high proficient ESL learners; those who are within the range of B-B+ are considered as moderate ESL learners and the remaining, who obtained C-C+ are defined as Low Proficient ESL learners.

To further explore the relationship between the use of Meta-cognitive SRL strategies and the language performance of the participants in the current study, a correlation coefficient test is computed. The following Table 7.6 shows the result of the test.

Table 7.6

Pearson Correlation Test Results of the relationship between the use of Meta-cognitive SRL Strategies and Language Achievement

		Grade	Meta-SRL
Grade	Pearson Correlation	1	.610 ^{**}
	Sig. (2-tailed)		.000
	N	170	170
Meta-SRL	Pearson Correlation	.610 ^{**}	1
	Sig. (2-tailed)	.000	
	N	170	170

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

The analysis of the test shows a significant correlation between the use of Meta-cognitive Self Regulated Learning Strategies and the participants' language achievement. The correlation value of r is = .0610 and $p = 0.00$ sig, $< .05$. The findings provide further evidence that there is a positive relationship between these two variables and that learners with high language proficiency are more frequent users of meta-cognitive self regulated learning strategies.

7.4 The correlation between Meta-cognitive SRL strategies use and Language Proficiency (as measured by MUET Achievement and English Language Grades)

Table 7.7

Pearson Correlation Test Results of the relationship between the use of Meta-cognitive SRL Strategies and Language Achievement

		metasrl	grade	MUET
metasrl	Pearson Correlation	1	.610**	.161*
	Sig. (2-tailed)		.000	.036
	N	170	170	170
grade	Pearson Correlation	.610**	1	.337**
	Sig. (2-tailed)	.000		.000
	N	170	170	170
MUET	Pearson Correlation	.161*	.337**	1
	Sig. (2-tailed)	.036	.000	
	N	170	170	170

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

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

The correlation test results as indicated in Table 7.7 above, for both MUET scores and Language proficiency course assessment grades reveal that there is a relationship between strategy use and learners' levels of language proficiency. Research has shown that frequent strategy use is associated with more efficient higher learning in first, second and foreign language (Ardasheva & Tretter, 2013; Lan & Oxford, 2003; Rao, 2012). This is particularly manifested in most studies examining the link between strategy use and language proficiency in the ESL and EFL learning setting. For example, Oxford and Nyikos (1989)

explored the relationship between language learners' proficiency and their use of learning strategies; they found that learners' self-rating levels of language proficiency were closely linked to their use of strategies.

Likewise, Liu (2013) reports that university students who perceived themselves as more proficient in English tend to apply learning strategies more frequently during the language acquisition process. Although there is no consensus among various studies regarding the order of strategy preference, they almost unanimously conclude that university students of the high level of language proficiency utilize a larger number of learning strategies, in greater frequency, and in different order of preference than the low level students (Chen, 2007; OK, 2003; Gavriilidou & Papanis, 2010; Psaltou-Joycey & Kantaridou, 2009a; Sheu, 2009; see Vrettou, 2014 for an extended review).

Consequently, many studies have also pointed out a strong positive relationship between language proficiency level and the use of appropriate language learning strategies (Khalil, 2005; Shmais, 2003). Numerous research employed different aspects of language proficiency level to examine their role in applying language learning strategies. Such variables included the duration of study for the learners (Khalil, 2005), their scores in TOEFL test (Nisbet, Tindall & Arroyo, 2005), their self-rating in language proficiency (Oxford & Nvikos, 1989), judgments of teachers about their students (Magogwe & Oliver, 2007) and students' GPAs in English language courses (Shmais, 2003).

Of course, there are many studies which have resulted in different findings and these differences might be related to many affecting factors. One possible explanation might be linked to the context of learning situation, which have a strong influence on learners' choice of language learning strategies (Cohen, 2014; Zhang, 2008; Chamot, 2005). Some studies argue that the strategies frequently used by proficient language learners in an Asian FL (foreign language) context differ drastically from those in the North American SL (second language) context (Gu, 1996; LoCastro, 1994; Takeuchi et al., 1999; Takeuchi & Wakamoto, 2001). The use of different types and numbers of strategies may also depend on the learner and the setting in which learning occurs and the language task to be completed, suggesting a need for more studies on different learners in different settings.

It is also interesting to note that, the relationship between strategy usage and level of language proficiency is not only as a one-way direction leading from cause to such effect, but rather as ascending spiral relationship in which active application of strategies help learners obtain higher level of proficiency. The current study reported a strong link between proficiency level of the participants and their Meta-cognitive Self regulated learning strategies preferences. As such, the relationship between meta-cognitive strategies and good language learner is established. The findings reveal that good ESL learners demonstrate more consistency in using effective strategies as seen in Figure 6.2, in the previous chapter 6. Results of the current study also indicate that good learners employed a great range of strategies, and used such strategies more frequently according to their levels of proficiency as depicted above in Table 7.5. This is in line with Chamot and Kupper (1989, p.250) who state that “major differences between effective and ineffective students

in the longitudinal study were found in the range of strategies use and the way in which individual strategies were applied, the results showed that there is a significant relationship between good language learners and all components of meta-cognitive strategies.”

On the other hand, the low mean achievement scores obtained by low proficient learners in the current study might have resulted from their inability to use appropriate strategies in learning. The ‘inappropriate strategies’ as highlighted by some researchers lead learners to handle tasks erroneously and block the acquisition of proper linguistics knowledge for the development of language skills and these findings are consistent with those of the studies conducted by Cohen and Shively (2007), Woodrow (2006) and Vandergrift (2003).

In conclusion, the results indicate that proficiency level plays a vital role in determining the language learning strategy used by the participants. The findings of the current research portray a clear distinction between the good and weak student based on how frequently they utilize the various Meta-cognitive Self regulated learning strategies in their language learning.

CHAPTER 8

OVERALL DISCUSSION & CONCLUSION

“Being able to learn in both ways is important for success. It is true that learning involves a relaxing environment without worrying about detailed aspects of the language, but it is also true that there are moments in which the learners need to examine the language they are using and apply strategies to improve their output’.

(Brown, p.12).

8.0 Overview of the Chapter

This chapter presents a summary of the study and conclusions drawn from the findings. It consists of six sections. The first section provides a summary of the study including an overview of the research problem, the significant of the study, the problem statement, research questions, theoretical framework, and the methodology. The second section includes a summary of the findings. The third section involves a discussion of the research findings and several pedagogical and research implications. The fourth section discusses the limitations and the fifth section provides recommendations for future research. Finally, the last section includes the concluding statement of the research.

8.1 Summary of the study

Empirical research has proven that meta-cognitive strategies are closely linked to the development of self regulated learning and students who use self regulated strategies are

intrinsically self motivated and prove to be autonomous learners (Zimmerman and Martínez Pons, 1988; Maxim, 2009). Learners who are equipped with meta-cognitive strategies, are more aware of their learning and they know ‘how’ and ‘when’ to employ the most relevant strategies to accomplish a given task. They even know how to accomplish a particular task in the most effective way. They plan their learning in advance, monitor their learning during the task performance, and evaluate their learning after task accomplishment (Zhang & Goh, 2006). Numerous studies have demonstrated that the instruction of meta-cognitive strategies helps learners to become more self-regulated, self-directed and successful in their learning (Goh, 1997; O’Malley & Chamot, 1990; Vandergrift, 2002, 2003; Chanuwong, 2006; M. Zahidi, 2012; Sadati & Simin, 2015).

However, despite all the positive effects meta-cognition and self regulated learning strategies may offer towards L2 learning, very little studies have been done on this research area. To be very specific, in Malaysia, several studies which have been done on second language and learning strategies (Kashefian, et. al, 2011; Razak, et. al. 2012; Shafie, 2013; Raoofi, et.al. 2014; Subramaniam & Palanisamy, 2014; Kiram, et.al, 2014; Chuin & Kaur, 2015), addressed on a general language learning, and only several others focused on the use of self regulated learning (Kosnin, 2007; Rahman, 2010; Zahidi, 2012; Maasum, et.al. 2012). Although these studies were generally related to the application of self regulation in learning, however, there has been very little research that examines the use of Meta-cognitive Self Regulated Learning Strategies among tertiary students, especially in the context of second language learning in Malaysia. To bridge this gap, it is therefore, essential for me to conduct a research which incorporates both elements of meta-cognition

and self regulated learning in a single study to obtain a deeper understanding of these two related areas and to extent an investigation on the relationship between Meta-Self Regulated Learning strategies and L2 learners' achievement.

The ultimate goals of this study are : (i) To develop a comprehensive meta-cognitive self-regulated learning strategies framework that may be used to assess students' use of these strategies and support teachers in incorporating the strategies in their teaching; (ii) To explore learners' use of Meta-cognitive Self Regulated Learning strategies (Meta-SRLS) in English Language learning; (iii) To determine the relationship between the use of Meta-cognitive Self Regulated Learning strategies (Meta-SRLS) and learners' language achievement.; and finally, (iv) To conduct an expert validation and review of the proposed Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) strategies framework as a framework for the teaching of Meta-Self Regulated Learning strategies. Thus, in accordance with these purposes, the following research questions guided this study:

1. What constructs will make up a Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) framework that may be used to assess students use of strategies and support teachers in incorporating the strategies into their teaching?
2. What Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) do ESL learners employ in English language learning?
3. What are the correlations between Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) employed by L2 learners and their achievement in English language as measured by:

- a. Malaysian University English Test (MUET) Results.
 - b. Language Proficiency Course Assessment Grades.
4. Are learners' self- perceptions of their L2 language ability influenced the use of Meta-cognitive Self Regulated Learning Strategies?
5. How do experts in the field of ESL education review and validate the Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) framework as instructional framework for the teaching of Meta-Self Regulated Learning Strategies?

To find answers for the five research questions stated above, this study, employed a multi-phase, mixed methods research design, allowing for qualitative and quantitative data to explore the context and inform the research over five phases of investigation. Data collection involved the Meta-SRLQ survey, interviews and also expert reviews. Survey was done using a Meta-SRLQ survey, a newly adapted inventory to measure the use of Meta-SRL strategies among the participants.

The constructs of Meta-cognitive Self Regulated Learning Strategy (Meta-SRLS) Framework was developed through a systematic review of literature. A narrative review of selected literature was undertaken to identify key theories, models and frameworks used within the subject being study. As a result, the Theory of Cognitive Meta-cognition by Flavell (1979), Brown's Theory of Meta-cognition (1987), and Zimmerman's Model of Self Regulated Learning (2000) were used to guide the study.

Inspired by the socio- cognitive view of self regulated learning model suggested by Zimmerman (2000), the framework proposed four cyclical meta-cognitive processes: planning, monitoring, adjustment and evaluation, which I strongly believe to have a significant influence in enhancing language achievement among ESL learners especially in the context of L2 teaching and learning in Malaysia (*refer to Figure 3.3 in Chapter 3 for Proposed Conceptual framework for Meta-cognitive Self Regulated Language Learning Processes*).

To validate the proposed framework, a panel of experts in the field of L2 teaching and research contexts were chosen and interviewed. The ‘expert interview’ technique in the study was regarded as important, as it enhances the reliability and validity of the proposed framework and instrument being used in the current study. Moreover, opinions and feedbacks gathered from the expertise in the field helped to cross check how well the framework meets the objectives of the study. In fact, the validation process and the framework itself contributed towards a better understanding of Meta-cognitive Self Regulated Learning processes in a Second Language Learning.

Findings gathered from the interviews revealed some interesting insights for this study. According to the experts, the proposed Meta-Cognitive Self Regulated Learning Strategy (Meta-SRLS) framework was persuasive and its application could explain a broad range of Meta-cognitive SRL phenomena. Experts claimed that the framework provides a relatively systematic structure of knowledge and constructs of meta-cognitive self regulated learning that can be applied into the L2 classrooms.

Apart from that, the framework has also contributed to a development of a survey instrument to examine the use of Meta-SRLS strategies among participants. A pool of 40 questionnaire survey items was constructed based on the four meta-cognitive processes (planning, monitoring, problem solving and evaluating) emerged from the framework. These 40 items were adapted from a list of meta-cognitive strategies suggested by Danuwong (2006), and re-designed to fit the ESL learning context in Malaysia. Learners' were required to give opinions on the Meta-cognitive Self Regulated Learning Strategies they used in the ESL classroom by using a five-point *Likert* frequency rating such as 'always use it', often use it', rarely use it', and never use it" (*see appendix for list of strategies/sub-categories*). Each category contains 10 items and participants were asked to indicate their level of agreement on the use of the strategies in completing their language tasks. Follow up interviews were also employed to delve deeper into the phenomenon. The use of multiple data collection approaches such as questionnaire survey, and semi-structured interviews and experts review was seen as the most appropriate methods for gaining an in-depth understanding of the learners' meta-cognitive behaviors and self-regulation in the context of this study and provided more insights into the construction of the Meta-Cognitive Self Regulated Learning Strategies framework.

8.2 Summary of Findings

Data gathered from a narrative review of the literature provided a ground work for a development of a comprehensive Meta-cognitive Self Regulated Learning Strategies (Meta-

SRLS) framework that may be used to assess students' use of Meta-SRL strategies and support teachers in incorporating the strategies in their teaching. Literature reviews revealed that Meta-cognition and Self Regulated Learning are the two key elements contributed for success in higher learning education as it allows students to be more proactive by controlling their own learning.

To date, there has been no comprehensive framework that can be used by both teachers and learners towards developing asystematic learning strategies in second language teaching and learning especially in Malaysia. Hence, the Meta-Cognitive Self Regulated Learning Strategies (Meta-SRLS) Framework proposed in the study, provided a new insight into the literature by contributing to a more coherent picture of Meta-cognitive Self Regulated Learning constructs in second language learning. Moreover, reviews from the experts in the related field also revealed that the framework is important and useful because it allows teachers to develop *“personalized systematic learning strategies needed by the students by developing a different set of learning activities to support learners acquiring the full range of strategies in the framework.*

Meta-Cognitive Self Regulated Learning Strategies (Meta-SRLS) framework is a learner-focused framework that draws attention to explicit integration of strategies in the second language classrooms. This framework gives emphasis on the importance of both meta-cognition knowledge and regulation of cognition in enhancing second language learners' performances. The principal of the framework is that learners should be given the opportunity to understand not only what they have learnt in the classroom, but also to know

how to use the language they are studying more effectively and efficiently. The underlying principle of the framework is that, learners should have the self knowledge (declarative), the task knowledge (procedural) and the strategy knowledge (conditional). This meta-cognitive knowledge helps learners become more aware about themselves as learners, about the task demands, and strategies available for them to complete the tasks. Moreover, these three types of knowledge facilitate learners understanding on how to control and use strategies systematically and effectively.

Findings gathered from the interviews with the experts in this study revealed several positive insights. The first key consensus finding of the experts interviews was that the constructs and knowledge presented in the framework are relevant for developing self directed learning in the ESL context. Experts concluded that the proposed framework is valid and can be used to explain a broad range of Meta-cognitive SRL phenomena. The framework provides a relatively systematic structure of knowledge and constructs of meta-cognitive self regulated learning that can be applied into the L2 classroom. It allows an individual (teachers or learners) to integrate diverse aspects of meta-cognition and self regulated learning within a single framework.

According to the experts, the constructs and strategies within the framework are found to be effective and relevant in developing personalized systematic learning strategies needed by students with different language abilities. The framework provides a clear guideline for learners on how to self regulate their learning. Explicit instructions on meta-cognitive strategies included in the framework may develop a sense of autonomy among learners.

Teaching meta-cognitive strategies scaffolds instruction for students will enable them to self-monitor their own learning and to know how to navigate successfully through difficult learning situations. The cyclical learning phases further help learners to gradually master the learning stages and processes as they are taught before, during and after strategies accordingly.

Another important finding revealed from this study is a list of strategies that may be useful in enhancing second language performances. The framework has further contributed to the composition of Meta-cognitive Self Regulated Learning Strategy Questionnaire (Meta-SRLSQ), which comprises of four major strategy components namely planning, monitoring, adjusting, and evaluating. Although research in Self Regulated learning field seems to suggest that there are a wide variety of strategies that learners can use to meet their language learning and using needs, but, there is no specific instrument available to examine learners' use of strategies in the second language learning, especially in the context of second language education in Malaysia. Thus, this study is beneficial as it suggests a new instrument that can be used to measure self regulated learning strategies in L2 learning classrooms.

Data findings from the Meta-SRLSQ presented a detailed description of the Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) employed by one hundred and seventy (170) undergraduate students majoring in different Engineering courses at one of a public university in the northern part of Malaysia. The Meta-SRLQ survey revealed the use of a wide range of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) by ESL

learners in their language learning. Out of 40 strategy items listed in the questionnaire, twenty-eight (28) strategy items were rated as high-frequently used strategies and the other twelve (12) strategy items were rated as moderately used strategies by ESL learners in the study. Overall, the findings of this study showed that Meta-cognitive Self Regulated Learning Strategies employed by ESL learners in their learning helped promote self regulatory abilities among them and enhanced their language performance. At a more applied level, recognizing patterns and types of Meta-cognitive Self Regulated Learning strategies used by learners, allows for the proposed framework to be used as a basis for a development of assessment instruments and teaching curricula that measure and develop a systematic Meta-cognitive Self Regulated Learning abilities among ESL learners.

The findings also identified several Meta-cognitive Self Regulated Learning Strategies which seemed to be effective in promoting self-regulated learning among ESL learners in the study. Regardless of their proficiency levels, all participants in the study employed different patterns of Meta-cognitive SRL strategies in their learning. The high proficient participants, monitored their learning by checking their attention towards the task given, and check the information needed for them to complete the task; while the moderate and low participants made adjustment to their learning by linking their prior knowledge and either seeking help or trying alternate strategies. It is also clear that participants in the study utilized more strategies during the performance phase than the forethought and self reflection phases. Even though planning is regarded as the most crucial component of SRL (Zimmerman, 2008), the findings revealed a limited application of planning and evaluating strategies amongst the participants in the study. It is suggested that during the forethought

and planning phase, learners examine the learning tasks and set detailed objectives toward finishing the tasks. However, the findings of the current study revealed different results. The participants might have overlooked the importance of planning strategies throughout their learning. It is believed that the lack of awareness to plan their learning tasks could be one of the contributing factors affecting the application of the next cycle of their learning phase. Therefore, this could be one of the reasons why self reflection became the least employed strategies by the participants in the study.

On the other hand, the findings also revealed a statistically significant positive relationship between the use of Meta-cognitive Self Regulated Learning strategies by the learners in the study and their English language performances. The findings corroborates with the previous findings in the literature (e.g. Chamot, O'Malley, Küpper, & Impink-Hernandez, 1989; Halbach, 2000; Oxford & Nyikos, 1989). Findings of the aforementioned studies indicate that advanced language learners utilized more learning strategies than the less advanced learners. In the current study, the learners' level of English language proficiency was determined by the Malaysian University English Test (MUET) results and also the final English grades they obtained in the language proficiency course. Results of the study also revealed that different learners have different level of strategy usage. High proficient ESL learners in the study appear to use more Meta-Cognitive SRL strategies than moderate and low proficient learners. These differences also affirmed the results of the previous studies in the literature that, low and high proficient learners can be distinguished from their different use of learning strategies and that, high performing learners were better users

of Meta-cognitive self regulated learning strategies (see Kosnin, 2007; Mezei, 2008; Turan et al, 2010; Sardareh et al, 2012).

Self efficacy was also found to have a positive relationship with learners' use of Meta-SRL strategies. The study indicated a statistically significant positive relationship between strategy use and self-efficacy among the 170 participants. According to Zimmerman (2000), self efficacy, being the most important personal factor, plays a central role in controlling the behavioral and environmental aspects of learners' self. In the current study, learners who reported frequent use of Meta-cognitive Self Regulated Learning Strategies were also revealed to be good language performers. The positive relationship between self-efficacy and the use of meta-cognitive strategies self regulated learning strategies provided an inclusive explanation of students' self regulation behaviors in learning in relation to social cognitive learning theory introduced by Albert Bandura (1986) and the theory of Meta-cognition proposed by Flavell (1979, & Veenman, Van Hout, & Afflerbach, 2006).

As a whole, four conclusions can be drawn from the findings of this study. First, the study provided a framework that offers a comprehensive Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) framework that might be used to assess students' use of Meta-SRL strategies and support teachers in incorporating the strategies into their teaching. Evaluation by the experts also revealed that the Meta-SRLS framework proposed in the study might be beneficial in promoting self autonomous learning in the L2 classrooms as it provides a fundamental guideline for self regulated learning processes. Moreover, a list of Meta-SRL strategies suggested in each learning phases in the framework might be useful for ESL

learners in enhancing their language competencies. Secondly, this study found a statistically significant positive relationship between Meta-cognitive Self Regulated language learning strategy use and language proficiency among the study participants. Thirdly, the study also found a statistically significant positive relationship between strategy use and self-efficacy among the 170 participants and finally, a statistically significant positive relationship was also found between Meta-cognitive Self Regulated Learning strategies and language achievement for the 170 study participants.

To sum up, the main contribution of this study is a comprehensive framework for integrating Meta-cognitive Self Regulated Learning Strategies into ESL learning environments. The framework aims to support learners to develop meta-cognitive SRL competencies which help them to further enhance their second language performances.

Significantly, the Meta-SRLS framework developed in the study has contributed to a development of a new instrument to measure the use of Meta- cognitive SRL strategies in the context of L2 learning in Malaysia. This study points to a lack of reliable framework and instrument for use in the identification or promotion of Meta-cognitive Self Regulated Learning Strategies in the context of L2 learning especially in the context of tertiary education in Malaysia. Findings of both qualitative and quantitative results suggests that the framework might be of value to language instructors assessing learners' engagement in meta-cognitive self regulated learning strategies or setting up self regulated learning experiences for their ESL learners. In addition, the framework can also be used

diagnostically to orient the instructors' approach in support of the language learning processes.

8.3 Implications of the findings

8.3.1 Changing the way of teaching and learning English as a Second language.

This study also offers significant implications towards the teaching and learning of English as a second language. The discussion on this issue will cover the following areas:

- i. Curriculum development
- ii. Pedagogical
- iii. Learning Assessments & Materials development
- iv. Self-directed learning

8.3.1.1 Curriculum Development

The findings of the current study suggest that there should be an urgent need to reconsider the role of Meta-Cognitive Self Regulated Learning Strategy instructions in the curricula of English language programs at tertiary education level in Malaysia. Schunk (1989) states that strategy instruction is considered as an effective means of promoting self-regulated learning. Given the importance of Meta-cognitive Self Regulated Learning Strategies for L2 success, integrating the Self Regulated Learning Strategy instructions into the English language curriculum will facilitate and promote a development of Self Regulatory skills (Montalvo & Torres, 2004; Paris & Paris, 2001; Graham, 1997; Lindner & Harris, 1993),

and further improve language performances among learners (Sardareh et al, 2012; Turan et al, 2010; Mezei, 2008; Kosnin, 2007; Wolters et al., 2003; Dckeyrel, et.al 2000).

Researchers claim that the use of appropriate learning strategies improves proficiency and achievement, and enables learners to take ownership of their own learning by enhancing learner autonomy, independence and self-direction (Zimmerman, 2012; Wong, 2011). In the context of L2 learning at tertiary level in Malaysia, learners are found to acquire insufficient Self Regulated Learning skills. As university students, they are required to put in an extra effort towards their learning, however, majority of them are not well prepared to face the academic demands in the university system (Allgood et. Al. 2000). Tuckman (2003), correspondingly, pointed out that this lack of self regulation awareness is the leading factor for lower academic achievement amongst university students.

Hence, to help learners learn better, teaching agendas should focus systematically on raising learners' awareness of self regulated learning strategies and to methodically increase learners' existing repertoire of language learning strategies. The language curricula should focus more on effective strategy instructions where learners receive explicit training on different kinds of meta-cognitive self regulated learning strategies which enable them to direct their language learning.

To a great extent, the findings of this study provide an extensive list of Meta-cognitive Self Regulated Learning Strategies that may be essential for successful language learning as shown in Figure 8.0 below. The exploration of strategies used by successful language

learners in this study provides a research incentive for language learning strategy instruction to improve learners' language proficiency (Wenden, 1991, 1998). As many researchers (for example, Zimmerman, 2012; 2000: Zimmerman and Martinez Pons, 1986; 1992; Pintrich and De Groot, 1990,) have proved that 'a common set of self-regulatory skills does exist, and that these skills are highly predictive of students' academic success and that these skills can be taught' (Zimmerman and Paulsen, 1995).

Figure 8.0: Effective Meta-Cognitive Self Regulated Learning Strategies that can enhance L2 Learning

LEARNING PHASE	META-SRLS STRATEGY	SUB- STRATEGIES
FORETHOUGHT PHASE	Planning	Directing attention selectively Linking with prior knowledge Expecting the encountered problem Intending to ignore distractions/inappropriate thoughts Preparing to confront obstacles Predicting outcomes/answers Prediction the incoming information Choosing strategies for the task
PERFORMANCE PHASE	Monitoring	Comprehension check Checking progress Detecting weaknesses/obstacles Seeking related prior knowledge Checking the retrieval of required information Checking the attention Checking appropriateness of the strategy being used Checking importance of the information Checking linkage to other subjects Checking the predictions/answers
	Adjusting	Accessing various resources Asking for clarification Linking with prior knowledge Seeking peer support Trying alternatives Making new guesses Logic reasoning Self-encouragement

SELF – REFLECTION PHASE	Evaluating	Judging that the goal has been met Strategy suitability & effectiveness Seeking other suitable strategy Judging how much has been learnt Comparing new knowledge with known knowledge Judging worthiness of learning
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From a learning perspective, direct instruction in how, when and why to use language learning strategies can help learners in the systematic use of various strategies as they learn a second or foreign language (Cohen, 1998, p. 96). In addition, by integrating strategy use and instruction into regular language classes, learners are provided with hands-on practice and reinforcement of strategy use (Cohen, 1998, p. 91). Direct scaffoldings and explicit instructions of Meta-SRL strategies in the ESL classrooms, therefore, can assist teachers' implementation of language tasks that offer control and autonomy and aid learners to become more self-regulated.

Teachers or language instructors should explicitly integrate the use of these strategies into their teaching activities. Explicit teaching of Meta-cognitive Self Regulated Learning strategies within the cyclic Meta-SRL learning processes provides not only knowledge of strategy use but capacity to self-assess, and to select and implement appropriate learning strategies. Within teachers' scaffolding instruction, students may repeatedly practice Meta-SRL strategies outside of the class, and gradually reach the level of using those strategies in a strategic and independent way.

The Meta-Cognitive Self Regulated Learning Strategy (Meta-SRLS) framework proposed in the study represents the feature of effective strategy instructions that might be useful in language teaching and learning. This framework argues that the teaching of personalized language teaching strategies will be empowered when learners are engaging in strategic and self regulated learning processes (Ping, 2012). Moreover, the framework may contribute towards an understanding of the importance of meta-cognitive knowledge and self regulated learning skills in enhancing language performance. In relation to strategy use, the findings of the current study provide significant implications towards reforming the way of teaching and learning English as Second Language especially in the context of tertiary education in Malaysia.

8.3.1.2 Pedagogical

In light of the present development and needs in language education, one of the pedagogical implications that can be drawn from the findings of the present study is that language teachers play a vital role in exposing students to various Meta-cognitive Self Regulated Learning strategies thereby allowing students to decide on strategies that are appropriately aligned with their learning purposes and task requirements. Teachers can integrate the use of suggested Meta-SRL Strategies in classroom materials and activities. They can train learners to use appropriate meta-cognitive strategies which will enable them to learn English language more efficiently. This corroborates Parilah M. Shah et al.'s assertion that educators play an important role in employing appropriate pedagogical techniques that can help learners enhance their second language proficiency. To ensure

learners' comprehension and understanding, teachers or language instructors should re-evaluate their teaching approach and take into account learners' difficulties in learning.

Research has shown that efficient learners exhibit the ability to use more learning strategies before, during and after the learning task (Kitsantas, 2002). In order to strengthen learners' use of self regulated learning strategies, teachers or language instructors should give more attention to what distinguishes skillful learners from those who are less skilled. Being that self-regulation is so important for learning, it would be beneficial to help students at all ability levels improve this skill.

Pedagogically, this study extends the existing literature by providing a comprehensive Meta-cognitive Self Regulated Learning strategy framework that can be used effectively by both learners and teachers in L2 learning context. As the language teaching domain has changed towards more learner-centered and interactive approach, there has also been a great emphasis on helping students to become actively responsible for their own learning. This demands the students to self direct the language learning process and become less dependent on the teachers. However, what may well stand in the way of learners' success at language learning is the lack of awareness of how various strategies may help them learn and use a second language more effectively. Given that language learning and the use of what is learned inevitably involve considerable memory work, as well as ongoing and meaningful practice, a systematic and purposeful approach to learning can help to ease the burden.

The framework offers a systematic cyclical Meta-cognitive Self Regulated Learning Strategy approach that can be used in language classrooms to enhance learning. Teachers can use the framework as their pedagogical approach in designing classroom activities. They can also use Meta-SRLS framework to train students in strategy use, to give them opportunities to practice strategy use, and to encourage them to personalize these strategies for themselves. By providing a clearer guidance, Meta-SRLS framework might enable learners become more aware of what kinds of strategies are available to them, how they can organize and use the strategies systematically and effectively within three cyclical learning phases.

8.3.1.3 Learning Assessment & Materials development

Research found that learners can be directed toward self-regulated learning through the materials. In fact, properly developed, textbooks and other teaching resources seem to be potentiality capable of promoting learning through interaction. By involving the learners in a reciprocal mode, materials can direct learners towards self regulation. Once involved in the contents of the materials, learners have the opportunity to draw upon their own internal resources to do the activities and accomplish different tasks; hence moving towards independence.

This study provides a significant implication for materials designs in L2 learning contexts. Findings of the study suggest the need for self access learning materials that can be used in the classroom to facilitate self regulated learning. According to Tomlinson (2010), many learners doing language courses spend much of their time focusing on examples of the

language and have insufficient time experiencing language in use. In self regulated learning context, the learning materials should be developed based on varied and comprehensible input that provide more opportunities for learners to employ appropriate meta-cognitive self regulated learning strategies in enhancing their language learning.

Furthermore, when developing learning assessments and materials in the L2 classrooms, teachers or language instructors should consider the humanistic approach to self access activities which aims at developing both declarative and procedural knowledge of the learners whilst at the same time making a positive contribution towards learners' personal linguistic development (Tomlinson, 2003c).

The Meta-SRLS framework proposed in the current study can be used as a guide for teachers to develop self access materials that facilitate independent learning in the L2 learning environments. Moreover, the framework also highlighted the important role of meta-cognitive knowledge in enhancing self regulation. With appropriate instructions, meta-cognitive knowledge improves learners' abilities to self regulate their own learning. Learners can be taught to reflect on their own thinking by monitoring their own cognitions and planning activities. By making the discussion of meta-cognitive knowledge as part of everyday learning discourse, and strategy training exercises in the course books, teachers or language instructors can encourage learners to talk about their own cognition and learning.

Apart from that, feedback should also be made available on all language activities. Teachers or language instructors should also acknowledge learners achievement or progress by providing information, references, suggestions and further activities which will help

them to improve even more. Continuation tasks linked to self evaluation of performance on a task should also be considered into the materials development. Feedback can encourage learners self motivation to monitor their own progress and gain a sense of achievement. This will go a long way to encourage learners to have a desire for effective strategies on their second language learning that will in turn, enable the learner to bear the responsibility of their learning process (Stern, 1974).

8.3.1.4 Self-directed learning

The present study also pays attention to the role of Self Directed Learning in Second Language learning process. Self directed learning has been described as a process in which individuals take the initiative, with or without the help of others, in diagnosing their own learning needs, setting personal goals, making decisions on resources and learning strategies and assessing the value of the learning outcomes (Knowles, 1975). Costa and Kallick (2003) described self-directed learners as being self-managing, self-monitoring and self-modifying. The Meta-cognitive Self Regulated Learning Strategy Framework used in the present study emphasizes on the importance of self directed learning in prompting learners' language strategy awareness. According to the results of the present study, some implications for ESL teaching and learning through employing Self Directed Learning can be suggested.

Self directed learning plays effective role in preparing students to take more control over their learning process. As Matsuda and Silva (2014) present that self directed learning can

pave the ground for understanding and facilitating adult learning. They also stress that language skills could be developed better in case the learner tries to comprehensively analyze his/her ways of learning and come to know about the principles and effective practices as well as strategies s/he is more successful in. Moreover, developing second language competencies through self directed learning framework is an experiential learning (Rafiee, et al., 2014), which could be energized through learner autonomy (Benson, 2013) and is bound to the ever emerging experiences (Conner, 2004).

Consequently, this study has significantly contributed to the body of knowledge about effective Meta-cognitive Self Regulated Learning Strategies that can be used autonomously by L2 learners in their language learning. These strategies will equip learners with Meta-cognitive Self Regulated Learning and will empower them to learn effectively. Oxford (1999) defines learner autonomy as the ability and willingness to perform a language task without assistance, with adaptability related to the situational demands, with transferability to other relevant contexts, and with reflection, accompanied by using appropriate learning strategies. Oxford (1999) further adds that, learner autonomy leads to self directed learning which offers greater achievement or proficiency.

In addition, the findings also suggest that Meta-SRLS Framework may help language learners develop learner autonomy and self directed learning. The framework offers a wide range of Meta-SRL strategies that can be used by ESL learners in their language learning. Additionally, the Meta-SRLS framework may also be beneficial not only in promoting self directed learning among students, but also to educational practitioners in that it helps

explain achievement differences among students and teaches them how to improve their achievement (Schunk & Zimmerman, 2008). According to Zimmerman (2011), the development of learner autonomy encompassing self directed learning and self-regulated learning is dependent on teacher autonomy , to the extent that teachers can monitor learners' readiness (motivational/cognitive), the obstacles to their self-regulated learning in light of cyclical phases of self-regulation . Hence, the notion of self-regulation included in the framework may help us to enhance our understanding of how teachers can support their learners' development of autonomy, and contribute to the appropriate conditions necessary for self directed learning development.

This implies that understanding the mechanism of self-regulated language learning helps both researchers and teachers to delve deeper into what is exactly impeding and promoting learners' self directed learning. In particular, the framework offers a better understanding of the important roles of Zimmerman's cyclical phases of self-regulation (Zimmerman, 2011) and the associated self-regulatory sub-processes to play for both naïve and skillful self-regulated learners (Zimmerman, 1998). For teachers and instructors who are wishing to promote self directed learning in their learners (particularly in the EFL school context), understanding cycles of self-regulation (including what is promoting and impeding learning) is crucial. With the help of the theory of self-regulation, teachers can have a clearer image of what kind of autonomy their students should achieve and of how they can better help learners self-regulate their language learning with the aim of developing self directed learning. It is through the monitoring of these areas that teachers can come to be able to successfully narrow that gap and to offer their learners the right kind of scaffolding.

This kind of scaffolding helps promote learners' cycles of self-regulation, and, as a result, can help learners themselves to develop a sense of agency towards the achievement of their own autonomy as learners.

8.3.1.5 Creating Self-regulated learner

To most teachers, creating autonomous and self regulated learning environments to diverse learners poses challenges. However, through direct instruction and modeling it can be achieved. A great deal of literature showcases a variety of effective instructional strategies for encouraging self-regulation in the classroom (Andreassen & Braten, 2011; Boekaerts & Corno, 2005; Cleary & Zimmerman, 2004; Dignath & Buettner, 2008; Graham, Harris & Mason, 2004; Stoeger & Ziegler, 2011; Tonks & Taboada, 2011). The Meta-cognitive Self regulated learning strategies proposed in the framework can be used by teachers to develop effective instructional strategies. Through direct instruction, modeling and demonstration, teachers can explain their own thought processes necessary for completing activities and assignments and students will have better understanding on how to independently use those same processes on their own. To become self regulated learners, they must first evaluate their own knowledge and skills and identify their own strengths and weaknesses. They also need to learn and engage in a variety of learning processes which demand them to monitor and control their learning. Teachers can create this environment by providing students frequent opportunities to practice self-regulation to maintain skills over time through class activities and tasks.

8.3.2 Increasing learners' confidence and self-efficacy

The findings of this research also indicated that self-efficacy plays a facilitative role in relation to cognitive engagement as suggested by Schunk (1985). The findings reveal that self efficacy has a positive relationship with language achievement of the participants. According to Zimmerman (2000), self efficacy, being the most important personal factor, plays a central role in controlling the behavioral and environmental aspects of learners' self regulation. In the current study, ESL learners who perceived themselves as more confident in their language learning abilities are better language learning strategy users as their beliefs about their abilities influence "the choices they make, the effort they put forth, their inclinations to persist at certain tasks, and their resiliency in the face of failure." (Zeldin & Pajares, 2000: 215). Taking into consideration on the impact of self efficacy towards learners' use of language learning strategies, it is important to raise ESL learners' self efficacy level in language learning.

It is noteworthy that the findings of the current study provide information for language learners by indicating that self-beliefs of language ability can affect their language achievement depending on the strength of their efficacy beliefs. The positive impact of self efficacy towards the participants' use of meta-cognitive self regulated strategies, reveal that learner's beliefs may be a strong mediating factor in their experience in the classroom. This implies that teaching students about different meta-cognitive and self-regulatory strategies may be more important for improving actual performance on classroom academic tasks, but that improving students' self-efficacy beliefs may lead to more use of these meta-cognitive

self regulated learning strategies (Borkowski, Weyhing, & Carr, 1988; Garner & Alexander, 1989; Schunk, 1985).

8.3.3 The establishment of a Meta-cognitive SRLS Constructs for use in future research

More importantly, the proposed Meta-Cognitive Self Regulated Learning Strategy (Meta-SRLS) framework also represents a blueprint for the development of a new instrument for measuring meta-cognitive self regulated learning strategies in L2 learning contexts. One of the central aspects of the control and regulation of cognition is the actual selection and use of various strategies for planning, monitoring, adjusting and evaluating. In most research on self regulated learning, there are a larger number of cognitive and learning strategies that individuals use to help them understand the task and learn the course materials. For example, many researchers have investigated the various rehearsal, elaboration, and organizational strategies that learners can use to control their cognition and learning (Pintrinch & De Groot, 1990; Zimmerman & Martinez-Pons, 1986). In my work, the Meta-SRLQ survey measures the use of Meta-cognitive Self Regulated Learning Strategies in the L2 learning context especially in Malaysia. This provides a significant contribution to the field of Meta-cognition, Self Regulated Learning and English language learning specifically. As to my knowledge, not that many scales or inventories that particularly measure the use of Meta-cognitive Self Regulated Learning Strategies in Second Language learning context that emphasizing on the three cyclical phases of learning as outlined in the Meta-cognitive Self Regulated Learning strategy framework presented in the current study.

The Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich et al. (1991) for instance, is an extensively used instrument in self regulated learning research on students at college and university level. By drawing its basis from the social cognitive view of motivation and learning, the MSLQ was developed as a result of a number of correlational studies on the students' motivation and self regulated learning at the National Centre for Research for improving Postsecondary Teaching and Learning, funded by the Office of Educational Research and Improvement, USA. (Duncan & McKeachie, 2005; Pintrich, et.al.,1993). The MSLQ is the most widely used questionnaire in SRL research (Duncan & McKeachie 2005), covers a range of scales from the performance phase, but does not measure self-regulatory behavior in the preparatory and appraisal phases. These scales, in addition, provide some measures of the monitoring and control activities for cognition, but the scales do not provide any measures of the specific forethought, performance and reflection activities that learners may use in the classroom.

The newly adapted Meta-cognitive Self Regulated Learning Questionnaire (Meta-SRLQ) used in the current study, however, assesses the extent to which learners apply their critical thinking into three learning phases namely forethought, performance and self reflection phase. This newly adapted scale also measures the extent to which learners employ their prior knowledge to new situations, analyze and even evaluate information in a more thoughtful manner. Moreover, the Meta-SRLS framework proposes a larger and more details number of potential strategies for controlling and regulating cognition that tertiary learners could use in their language courses (Pintrich, 2006). Hence, a practical use of this Meta-SRLS framework in a more applied setting of any language classroom may be

essential and helpful in assisting students developing their meta-cognitive self regulated learning skills. Thus, the instructional implication of building this framework is that by understanding the process of self-regulated learning for L2 learners, language educators will be more familiar with the factors that influence a learner's self-regulation and the strategies.

8.4 Suggestions for future research

Issues related to the difference in strategy use by different level of language proficiency is not adequate in the existing literature. The difference in strategy use by successful and unsuccessful language learners need to be addressed in a more unified manner (Griffiths, 2003) and further research is needed to understand the difficulties faced by the learners while learning. Observations on the unsuccessful language learner strategy use are required to understand the reasons behind the low performance of these students, and perhaps to identify what strategies they avoided. Lecturers or language instructors should adopt more student-centered classroom environment by encouraging learners to participate actively in classroom activities. This, at the same time will reduce learners' anxiety as they regularly engaging in highly demanding language tasks, they will develop and improve their self efficacy beliefs.

Interestingly, the findings from this study may also lead to several educational implications for students and teachers as well as teaching practices at tertiary education level. The findings revealed that low-achieving learners in the present study, exert less meta-cognitive self regulated learning strategies than high-achieving learners. The fact that low achieving

learners reported less use of these strategies indicates that interventions or teaching approaches that can encourage these students to use these strategies may lead to improved academic achievement. Promoting meta-cognitive self regulated learning strategies during teaching practices represent important element in enhancing academic achievement. Therefore, instructional practices that promote and integrate the teaching of these strategies into the classroom are recommended to encourage students to be self-regulated learners. Tertiary language teachers or instructors should discuss the importance of meta-cognitive knowledge with the students including the unique role it plays in activating self regulated learning. Moreover, it is imperative for them to assess the strategy usage of their students on a regular basis in order to gain a better understanding of students' strategy preferences so that they could individualize the learning content.

To a greater extent, the Meta-cognitive Self Regulated Learning Strategy framework (Meta-SRLS) proposed in the study can be utilized by both learners and instructors in the ESL context. This framework can guide language learners towards self regulated routines, intending to foster language skills (Graham & Harris, 2003). Considering the problems L2 university students have in their second language learning, the results of this study can be of paramount importance for those who are looking for an alternative to traditional methods in teaching or learning language courses in which L2 students are exposed to learning strategies that include higher order thinking skills and self regulation.

The results demonstrate that L2 learners in the study employ multiple learning strategies and adjust those strategies as needed, self-monitor their progress, seek help from others as

needed, and self-evaluate their learning goals and progress based upon their learning outcomes. It is understood that by identifying L2 learners' use of strategies, teachers/instructors can use the aforementioned strategies to promote self regulation in their classrooms. It is also explained that the use of meta-cognitive self-regulation strategies can lead to increases in self-efficacy beliefs and academic achievement (Schunk, 2001; Zimmerman, 2000). When students are motivated to learn, they are more likely to invest the necessary time and energy needed to learn and apply appropriate Meta-cognitive Self Regulated Learning skills, and when they are able to successfully employ self regulation strategies, they are often more motivated to complete learning tasks (Zimmerman, 2000).

Additionally, this research also makes a practical contribution toward designing effective self regulated learning instruction in the second language classrooms. The findings of the current study indicate a significant relationship between strategy use and learners' language achievement. In this study, learners who reported frequent use of Meta-cognitive Self Regulated Learning Strategies were also good language performers. The fact that self regulated learning has positive impact on learners' language performances, curriculum planners should design a curriculum that will encourage learners' autonomy in learning. Lecturers/language instructors should adopt a learner-centered classroom environment by encouraging learners to actively participate in the classroom. This research also recommends that language lecturers/instructors should design their instruction for the enhancement of learners' self regulated learning skills. Task-based classroom activities, flipped classroom activities and many more can be examples of curriculum designs that

can be integrated into the ESL classroom. These types of classroom activities will enable learners to take charge of their own learning.

The findings also suggest that explicit teaching of metacognitive strategies should be incorporated into the classroom practice of lecturers and particularly of those teaching English as a second language. By using the Meta-SRLS framework as a guideline, lecturers or instructors can promote metacognitive awareness amongst their learners. For instance, the introduction of useful metacognitive self regulated learning strategies in the classroom can equip learners with the appropriate skills. Learners should utilize the various types of learning strategies available to them and be flexible in their use of strategies as this may lead them to become self regulative in their learning processes and further improve their learning. By promoting autonomous learning, it will shift the role of most lecturers/instructors as the sole providers of information to learners. Besides, this move will also reduce learners anxiety by giving them more opportunities to control their own learning.

Apart from that, this study also emphasizes on the importance of social support in learning environment. In the current study, the findings demonstrate that teachers and peers also contribute in supporting self regulation amongst participants. The results showed that most of the participants seek help from either their teachers or their peers in learning. These findings call attention to the significance of positive student-teacher interactions in learning. This implies a need for language instructors to design and systematize learning opportunities for learners to construct knowledge and facilitate their meta-cognitive self

regulation. By doing so, teachers or language instructors can help learners to monitor and evaluate their own learning experience.

The above discussions, hence, entail two main implications. First, it is important to note that the thinking process at a higher order should be interwoven, articulated and taught in the classroom. While language task-based activities are assigned to students, they need also to be informed of the aim of instilling higher order thinking capabilities in the completion of their work. The teachers do need to monitor and facilitate the students with appropriate meta-cognitive thinking skills so that they will directly or indirectly incorporate the higher order thinking skills in their work. It is notable that, the findings from this study present only a smaller part of a larger component of integrating higher order thinking skills in English language courses. Thus, it offers a generic interpretation from the selected samples. Nevertheless, it provides a platform for further investigations on the specific meta-cognitive self regulated learning strategies that help to enhance the students' ability to facilitate a more higher order thinking skills into language learning. In the context of this study, the limitations were the small samples group and they were not taught the methods of incorporating higher order thinking skills in accomplishing their language tasks. A bigger sample size and a detailed qualitative analysis will provide more comprehensive analysis of the investigation.

8.5 Limitations of the study

Some limitations should be acknowledged when interpreting the results of this study. As in most studies on student learning, generalization of the findings to other contexts is limited

by educational and cultural differences. The findings in this study can only be generalized to ESL learners at tertiary level in Malaysia. ESL learners in other part of the world may differ with respect to their educational background and diversity. The strategies identified here are specifically on students' learning of English in a specific English proficiency course and therefore cannot be generalized to students' learning of other subjects such as engineering courses, mathematics and etc. As Boekaerts (1995) have stressed that self regulated learning is domain specific and likely to be influenced by subject-matter knowledge and interest, the strategies identified in the study may not be relevant for other subjects than English. Taking into consideration that this study provides an investigation on ESL learners' perspective of their meta-cognitive self regulation in completing tasks in a specific foundation english course at only one public university in Malaysia, this research cannot be generalised to a larger population of undergraduates in Malaysia. However, the findings may be applicable to other ESL learners taking similar language courses. Therefore, generalisation of these findings should be made with caution.

8.6 Concluding statements

Indeed, meta-cognition and self-regulation is essential to the learning process (Jarvela & Jarvenoja, 2011; Zimmerman, 2008), as both of these elements help learners create better learning habits and strengthen their study skills (Wolters, 2011), apply learning strategies to enhance academic outcomes (Harris, Friedlander, Sadler, Frizzelle, & Graham, 2005), monitor their performance (Harris et al., 2005), and evaluate their academic progress (De Bruin, Thiede & Camp, 2011).

This study has provided new insights into the field of metacognition and self regulated learning in second language learning context. The findings of this study primarily provide evidence of the ways in which learning becomes more effective when learners are actively involved in the learning process. This research also concurs with Zimmerman's (2000) theory of self regulated learning and Bandura's (1986) triadic perspective of self regulation which view learning processes as interdependent process of personal, behavioral and enviromental events. The data collected in this study, provides evidence that self regulation in language learning involves interaction between individual learner and his or her social contexts. The high frequent use of help seeking strategy by learners in the study is linked to their social relationships with teachers and also peers. This suggests that learners' development to regulate their language learning may be mediated through the process of social support and social regulation. Moreover, learning environment also plays esential role for effective use of metacognitive self regulated learning strategies in second language learning. Self regulation may also occur within collaborative learning activities as these activities provide more opportunities for learners to explicitly use the strategies.

Language teachers/ instructors should foster positive motivational beliefs in their students by creating a stimulating and positive language learning environment that can facilitate self regulation among the learners. The findings also show that all learners use metacognitive self regulated learning strategies in some ways, but there are differences in terms of usage between them. These differences may be influenced by several factors such as level of proficiency, learning experience and also the self efficacy beliefs among learners.

Therefore, future research should give more attention into these factors and how these factors affect learners' self regulation. Taken together the importance of metacognitive self regulated learning strategies in enhancing language learning, Moreover, language teachers/ instructors should play a significant role in teaching students self-regulatory skills in the classroom. This study contributes in the existing literature by providing a new approach to ESL learning context. With the current changes in knowledge, learning and general demands of contemporary society, a new approach to learning a second language which is suitable to the needs of today's world must be considered. This study, hence, suggests a Meta-cognitive self regulated learning strategy (Meta-SRLS) framework as an alternative option to the existing methodologies in ESL learning through the cyclical processes of planning, monitoring, adjusting and evaluating.

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Appendix I

TITLE: The Relationship between the Use of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) and Achievement in English Language Learning

PURPOSE OF THE STUDY

In this study, my ultimate goals are to achieve the following objectives:

- To explore learners' use of Meta-cognitive SRL strategies in English Language learning;
- To determine the relationship between the use of Meta-cognitive strategies and learners' language achievement.
- To develop a meta-SRL strategies framework that can be used to enhance language competence.

In accordance with these purposes, three research questions arise.

RESEARCH QUESTIONS

1. What meta-cognitive SRL strategies do ESL learners employ in completing English language tasks?
2. Is there any significant correlation between meta-cognitive SRL strategies used by learners and their achievement in English?
3. What meta-cognitive SRL strategies model/framework can be used to enhance English language learners' competence?

1. RESEARCH AIMS & PROPOSED METHODS OF DATA GENERATION

The main objective of the current study is to investigate learners' use of meta-cognitive self regulated learning strategies in English language course at tertiary level. Other than that, this study also aims to explore the relationship between meta-cognitive SRL strategies used by the learners and the learners' performances in English language course, and to suggest a list of meta-cognitive self-regulated learning (SRL) strategies that can be used in ESL classroom to enhance language performance of ESL learners

at tertiary level. In so doing, merely to rely on a quantitative approach is not sufficient to reveal all of the desired variables.

Hence, to explore ESL learners' use of meta-cognitive SRL strategies, the current study applies the sequential mixed-method explanatory design(*see figure 5*), which implies collecting and analyzing quantitative data and then continue with qualitative data collection in two consecutive phases within one study. In the first phase, quantitative data collection involving survey questionnaire will be used to obtain information on a repertoire of meta-cognitive SRL strategies used by the participants. Next, in the second phase, qualitative data collection method will be used to further explain the nature of Meta-SRL experienced by the participants in their learning processes. Semi- structured interviews will be implemented to selected participants to gain in depth information of the strategies used by the participants when fulfilling the language tasks.

The Meta-SRLQ was designed to address the first research question: What meta-cognitive SRL strategies do ESL learners employ in completing English language tasks? The semi-structured interview will then be conducted individually to obtain more in-depth data concerning the meta-cognitive SRL strategy use in their language learning process. These interviews in turn, provide an opportunity for me to ask further questions to gain clarification of what was reported in the questionnaire survey. The interviews will be tape-recorded, transcribed and translated into English for further analysis. In order to address the second research question concerning the relationship between students' strategy use and their English language achievement, the previous English language exam results will be collected as the indicator of their current English

proficiency level. Correlation coefficients will be calculated to determine the relationship between Meta-SRLQ subscales scores and the language performance of the participants. In order to address the third research questions, both data collected from the survey and interviews will be used as a guideline to provide a list of Meta-SRL strategies that can be used in enhancing language performance.

2. GAINING ACCESS TO PROSPECTIVE PARTICIPANTS

The obligation to respect research ethics is part of responsibility for research in general. The ethical responsibilities inherent in this research are partly associated with standards related to the research process, including relationships between researchers, and partly with respect for the individuals and institutions being studied, including responsibility for the use and dissemination of the research. Hence, ethical approval will be sought from the Research Ethics Coordinator in the School of Education for both the pilot study and the main study before they are being formally conducted.

As a researcher, I am fully aware of the ethical behavior that I have to adhere when conducting this research. Therefore, data gathering activities in the current study will only be carried out with the agreement of the Head of Centre for International Languages in Universiti Malaysia Perlis. All potential participants will be asked to give their explicit, normally written consent to participating in the research, and, where consent is given, separate copies of this will be retained by both researcher and participant. Participants will be made aware that they may freely withdraw from the project at any time without risk or prejudice.

Research will be carried out with regard for mutually convenient times and negotiated in a way that seeks to minimize disruption to schedules and burdens on participants. At all times during the conduct of the research I will behave in an appropriate, professional manner and take steps to ensure that neither myself nor research participants are placed at risk. The dignity and interests of research participants will be respected at all times, and steps will be taken to ensure that no harm will result from participating in the research. The views of all participants in the research

will be respected and special efforts will be made to be sensitive to differences relating to age, culture, disability, race, sex, religion and sexual orientation, amongst research participants, when planning, conducting and reporting on the research.

Data generated by the research will be kept in a safe and secure location and will be used purely for the purposes of the project (including dissemination of findings). No-one other than markers and examiners will have access to any of the data collected. . Additional feedback will be given to participants as and when required or requested by the participants. The study will not involve participants aged less than 18 years or vulnerable adults. Ethical procedures will need to be continually reviewed and revised accordingly throughout the duration of the study.

Appendix : Research information sheets and consent form

ROZILAWATI MAHADI

PhD candidate

School of Education

Faculty of Arts & Social Sciences

The University of Nottingham (Malaysia)

Date

Title of project: The Relationship between the Use of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) and Achievement in English Language Learning

Researcher: Rozilawati Mahadi, School of Education, Faculty of Social Sciences, The University of Nottingham (Malaysia)

RESEARCH INFORMATION SHEET: STUDENTS

I am a PhD student at the School of Education, Faculty of Arts & Social Sciences, The University of Nottingham, Malaysia. I am undertaking research on *The Relationship between the Use of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) and Achievement in English Language Learning* for my PhD dissertation. This research is supervised by Asse. Prof. Dr. Ganakumaran Subramaniam.

I would like to invite you to participate in my research. Your participation is voluntary and you will not be identified in the research report or in any other presentation or publication. Your participation in this research will not affect your English language course grade. The knowledge of meta-cognitive self-regulation among English language learners from this research aims to contribute to the development of future language learning programs.

What happens if you agree to participate?

If you agree to participate in this research, you are invited to complete a self-assessment survey. This is not a test. This activity aims to raise your awareness about yourself as English language learners and your use of strategies while learning English language. As to further deepen your understanding on the strategies use, six (6) participants will be chosen to participate in the follow up interview sessions. This understanding will help you reflect on what helps and hinders you in becoming a good English learners. The length of the interview will be 30 - 40 minutes for each participant. These interviews will be taped to provide a record of what was said for later analysis.

How will I ensure that your privacy, rights and confidentiality are protected?

All participants involved in this research have the right to decline participation and withdraw themselves (or any information provided) from the research at any time before data collection and analysis is complete. The participants can ask questions about the study at any time throughout their participation and have the questions answered to their satisfaction. They can also refuse to answer any particular questions. Participants will receive feedback or a summary of the research findings when it is concluded. The names of student-participants and language

classes will remain confidential to the researcher and her supervisors. Participants will be allowed to choose their own pseudonyms. Language classes will also be given a pseudonym in this research project or in any other presentation or publication. All audio and transcript files will be kept on password protected systems. All hardcopy written materials will be kept in a locked filing cabinet and will be destroyed five years after the research is completed. All interviews which are audio-taped will be transcribed by the researcher herself and codes will be used for participants. Transcription of data from interviews will be given to participants for checking before it is being used in the analysis.

What happens to the information provided by participants?

- ☐ Initially your coded data will be used in writing my doctoral dissertation. The PhD dissertation will be submitted to the university and deposited in the university library (student research).
- ☐ Papers will be written to be presented at conferences and articles submitted to academic journals.
- ☐ Copies of the final PhD thesis will also be submitted to the Malaysian Ministry of Higher Education, and National University of Malaysia library.

This research has been reviewed and approved by The Nottingham University School of Education Ethics Committee. The university requires that ethics approval be obtained for research involving human participants. If you require any further information or clarifications about this research, please do not hesitate to contact me or my supervisors at The University of Nottingham, Malaysia. (details below).

Supervisors contact details:

Assc. Prof. Dr Ganakumaran Subramaniam
Head of School
School Of Education
Faculty of Arts & Social Sciences
The University of Nottingham
Jalan Broga, 43500, Semenyih
Selangor Darul Ehsan, Malaysia
Email: Ganakumaran.Subra@nottingham.edu.my
Contact number: +6 (03) 89248691

GENERIC PARTICIPANT CONSENT FORM

Project title : The Relationship between the Use of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) and Achievement in English Language Learning

Researcher's name: Rozilawati Mahadi

Supervisor's name : Assc. Prof. Dr Ganakumaran Subramaniam

I have read the Participant Information Sheet and the nature and purpose of the research project has been explained to me. I understand and agree to take part.

- I understand the purpose of the research project and my involvement in it.
- I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future.
- I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential. *{If other arrangements have been agreed in relation to identification of research participants this point will require amendment to accurately reflect those arrangements}*
- I understand that I will be audio-taped / videotaped during the interview. *{Omit this point if the interview will not be taped}*
- I understand that data will be stored ... *{insert details of how and where data – including hard and electronic copies of transcripts, or any video or audiotapes used – will be stored, who will have access to it and what limits will be placed on that access}*
- I understand that I may contact the researcher or supervisor if I require further information about the research, and that I may contact the Research Ethics Coordinator of the School of Education, University of Nottingham, if I wish to make a complaint relating to my involvement in the research.

Signed (research participant)

Print name **Date**

SCHOOL OF EDUCATION – PGR STATEMENT OF RESEARCH ETHICS

(This form should be used by all students studying for a PhD, EdD, Prof Doc, or MPhil)

Name (Student): **ROZILAWATI MAHADI** Supervisor: **DR. GANAKUMARAN SUBRAMANIAM**



The University of
Nottingham

Research Topic:

The Relationship between the Use of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) and Achievement in English Language Learning

	Tick where appropriate
1. I have read and discussed with my supervisor(s) the British Educational Research Association's Revised Ethical Guidelines for Educational Research (BERA, 2011).	/
2. I have read and discussed with my supervisor(s) the Code of Research Conduct and Research Ethics of the University of Nottingham. For a copy of this document please click here: http://www.nottingham.ac.uk/educationstudentintranet/researchethics/index.aspx	/
3. I am aware of and have discussed with my supervisor(s) the sections of the Data Protection Act (1998) that are relevant to my research study: http://www.legislation.gov.uk/ukpga/1998/29/contents .	/
4. Data gathering activities involving schools and other organizations will be carried out only with the agreement of the head of school/organization, or an authorised representative, and after adequate notice has been given.	/
5. The purpose and procedures of the research, and the potential benefits and costs of participating (e.g. the amount of their time involved), will be fully explained to prospective research participants at the outset.	/
6. My full identity will be revealed to potential participants.	/
7. Prospective participants will be informed that data collected will be treated in the strictest confidence and will only be reported in anonymised form, but that I will be forced to consider disclosure of certain information where there are strong grounds for believing that not doing so will result in harm to research participants or others, or (the continuation of) illegal activity.	/
8. All potential participants will be asked to give their explicit, normally written consent to participating in the research, and, where consent is given, separate copies of this will be retained by both researcher and participant.	/
9. In addition to the consent of the individuals concerned, the signed consent of a parent, guardian or 'responsible other' will be required to sanction the participation of minors (i.e. persons under 16 years of age) or those whose 'intellectual capability or other vulnerable circumstance may limit the extent to which they can be expected to understand or agree voluntarily to undertake their role'.	/
10. Undue pressure will not be placed on individuals or institutions to participate in research activities.	/
11. The treatment of potential research participants will in no way be prejudiced if they choose not to participate in the project.	/
12. I will provide participants with my contact details (and those of my supervisor), in order that they are able to make contact in relation to any aspect of the research, should they wish to do so.	/
13. Participants will be made aware that they may freely withdraw from the project at any time without risk or prejudice.	/
14. Research will be carried out with regard for mutually convenient times and negotiated in a way that seeks to minimise disruption to schedules and burdens on participants. (see BERA, 2011)	/

15. I have considered carefully to what extent, if any, my research might expose me to any kind of risk to my personal safety. I have also discussed this with my supervisor and have taken appropriate steps to respond to any risks identified. Where such a strategy has been agreed a record of it is attached to this submission.	/
16. At all times during the conduct of the research I will behave in an appropriate, professional manner and take steps to ensure that neither myself nor research participants are placed at risk.	/
17. The dignity and interests of research participants will be respected at all times, and steps will be taken to ensure that no harm will result from participating in the research.	/
18. The views of all participants in the research will be respected.	/
19. Special efforts will be made to be sensitive to differences relating to age, culture, disability, race, sex, religion and sexual orientation, amongst research participants, when planning, conducting and reporting on the research.	/
20. Data generated by the research (e.g. transcripts of research interviews) will be kept in a safe and secure location and will be used purely for the purposes of the research project (including dissemination of findings). No-one other than research colleagues, supervisors or examiners will have access to any of the data collected.	/
21. Research participants will have the right of access to any data kept on them.	/
22. All necessary steps will be taken to protect the privacy and ensure the anonymity and non-traceability of participants – e.g. by the use of pseudonyms, for both individual and institutional participants, in any written reports of the research and other forms of dissemination.	/
23. Where possible, research participants will be provided with a summary of research findings and an opportunity for debriefing after taking part in the research.	/
24. Does your research involve (please tick ALL that apply):	
Schools? ☐ Vulnerable Adults? ☐ Children? ☐ None of these groups ☐	
25. a) Will your research be conducted in (please tick ONE BOX only):	
UK only? ☐ Outside the UK only? ☐ UK & outside the UK? ☐	
b) If outside the UK, please name the country(ies) involved:	
MALAYSIA	
26. FOR ALL STUDENTS UNDERTAKING RESEARCH INVOLVING SCHOOLS, CHILDREN (UNDER 18) AND/OR VULNERABLE ADULTS I have received Disclosure and Barring Service (DBS) clearance through the University of Nottingham and the School of Education Research Office has the reference number <i>This applies even when data are collected outside of the UK.</i> NB: All students <u>must</u> remember to apply for their University of Nottingham DBS disclosure when they are visiting the UK.	

PLEASE SEND AN ELECTRONIC COPY OF THIS FORM, COPYING IN YOUR SUPERVISOR, WITH SUPPORTING DOCUMENTATION TO EDUCATIONRESEARCHETHICS@NOTTINGHAM.AC.UK . IF YOUR SUPERVISOR IS COPIED IN WE WILL TAKE THIS AS PROOF THAT THEY HAVE SEEN AND APPROVED YOUR APPLICATION (THEREFORE A SIGNATURE ON THIS FORM IS NOT NECESSARY)

NB Please do NOT include copies of research instruments (e.g. questionnaires).

Signed (student)		Print Name (Student)	<u>RQZILAWATI MAHADI</u>	Date: 5 MARCH 2014
Signed (supervisor 1)		Print Name (supervisor 1)	<u>DR. GANAKUMARAN SUBRAMANIAM</u>	Date : 5 MARCH 2014
Signed (supervisor 2, where appropriate)		Print Name (supervisor 2, where appropriate)	_____	Date _____

PLEASE SEND AN ELECTRONIC COPY OF THIS FORM, COPIED IN YOUR SUPERVISOR, WITH SUPPORTING DOCUMENTATION TO
EDUCATIONRESEARCHETHICS@NOTTINGHAM.AC.UK . IF YOUR SUPERVISOR IS COPIED IN WE WILL TAKE THIS AS PROOF THAT THEY
HAVE SEEN AND APPROVED YOUR APPLICATION (THEREFORE A SIGNATURE ON THIS FORM IS NOT NECESSARY)

Appendix V

A Survey on Meta-Cognitive Self Regulated Learning (Meta-SRL) Strategies Used By Learners in English Language Learning

Kajian Penggunaan Strategi Pembelajaran Meta-kognitif Kendiri Pelajar Dalam Pembelajaran Bahasa Inggeris

Instructions: In this questionnaire you are asked to respond to statements concerning learning strategies used in learning English by indicating how regularly you engage in each of them. There is no right way of studying. It is important that you answer each question as honestly as you can. Cross (X) one of the following choices under each scale.

Arahan: Anda diminta memberi respon kepada pernyataan-pernyataan berikut yang merujuk kepada penggunaan strategi dalam pembelajaran Bahasa Inggeris dengan menggambarkan sejauh manakah anda menggunakan strategi -strategi berikut. Sila jawab dengan sejujur yang mungkin dan tandakan pangkah (x) untuk jawapan pilihan anda pada skala yang disediakan.

LEARNING STRATEGIES <i>Strategi pembelajaran</i>	FREQUENCY OF USE IN ENGLISH LANGUAGE LEARNING <i>Tahap kekerapan penggunaan dalam pembelajaran Bahasa Inggeris</i>				
	5 always use it <i>Selalu menggunakan-kannya</i>	4 often use it <i>Sering menggunakan-kannya</i>	3 some times use it <i>kadang-kadang menggunakan-kannya</i>	2 rarely use it <i>Jarang-jarang menggunakan-kannya</i>	1 never use it <i>Tidak pernah menggunakan-kannya</i>
1. I set my own learning objectives before completing a task. <i>Saya menetapkan objektif pembelajaran saya sendiri sebelum menyiapkan sesuatu tugas.</i>					
2. I identify in advance the aspects of information to look for, and focus on that particular information before completing a task. <i>Saya mengenalpasti terlebih dahulu maklumat yang perlu dicari dan member tumpuan kepada maklumat tersebut sebelum menyiapkan tugas.</i>					
3. I decide what is already known about the subject, topic, or issue that will be helpful before completing a task. <i>Saya membuat keputusan berkenaan apa yang sudah diketahui mengenai subjek, topik atau isu yang boleh membantu sebelum menyiapkan tugas.</i>					
4. I identify problems that might be encountered in the tasks. <i>Saya mengenalpasti permasalahan yang mungkin saya hadapi dalam menyelesaikan tugas.</i>					
5. I decide in advance to ignore mental, physical and environmental distractions before completing a task. <i>Saya memutuskan untuk mengabaikan halangan-halangan mental, fizikal dan juga persekitaran yang bakal dihadapi sebelum menyiapkan tugas.</i>					

6. I check in advance personal comprehension of the instruction, lecture, and materials before completing a task and ask for further information if necessary. <i>Saya memastikan arahan yang diberikan, syarahan dan juga material pembelajaran difahami sebelum menyiapkan tugas dan bertanya soalan sekiranya perlu.</i>					
7. I make predictions of what to get out or answers of the questions before completing a task. <i>Saya membuat ramalan apa yang bakal disoal serta jawapan bagi setiap soalan sebelum menyiapkan tugas.</i>					
8. I anticipate what information or event will occur next before completing a task. <i>Saya membuat jangkaan akan maklumat/ peristiwa yang bakal berlaku seterusnya sebelum menyiapkan tugas.</i>					
9. I think in advance about strategies and tactics that I can use to understand the subject, topic or issue before completing a task. <i>Saya berfikir terlebih dahulu mengenai strategi dan teknik yang boleh saya gunakan untuk memahami sesuatu subjek, topik atau isu sebelum menyiapkan tugas.</i>					
10. I try to find out what can be done in sequence to make lectures or texts understandable before completing a task. <i>Saya cuba untuk mengetahui apa yang boleh dilakukan secara kronologi/turutan agar kuliah atau teks difahami sebelum menyiapkan tugas.</i>					
11. While completing a task, I check periodically whether the material is making sense to me. <i>Sewaktu menyiapkan tugas, saya memeriksa secara berkala sama ada material pembelajaran/pengajaran tersebut memberi kefahaman atau tidak kepada saya.</i>					
12. While completing a task, I ask myself how well I am doing and whether I am working at an appropriate rate. <i>Sewaktu menyiapkan tugas, saya bertanya kepada diri sendiri sejauh manakah saya telah berusaha dan juga sama ada saya berada di tahap yang betul.</i>					
13. While completing a task, I ask myself whether I am on the right track and any weaknesses have shown up. <i>Sewaktu menyiapkan tugas, saya bertanya kepada diri sendiri sama ada saya berada di landasan yang betul dan apakah kelemahan yang telah dikenalpasti.</i>					
14. While completing a task, I compare what I am hearing, reading and seeing with what I know. <i>Sewaktu menyiapkan tugas, saya membuat perbandingan akan apa yang saya dengar, baca dan lihat dengan apa yang saya ketahui.</i>					
15. While completing a task, I ask myself whether I know what I need to know. <i>Sewaktu menyiapkan tugas, saya bertanya kepada diri sendiri sama ada saya tahu apa yang perlu diketahui.</i>					
16. While completing a task, I ask myself whether what is paid attention to is important for learning the subject, topic or issue.					

<i>Sewaktu menyiapkan tugas, Saya bertanya kepada diri sendiri sama ada apa yang diberi perhatian adalah penting bagi subjek, topik atau isu tersebut.</i>					
17. While completing a task, I ask myself whether the appropriate techniques are being used. <i>Sewaktu menyiapkan tugas, saya bertanya kepada diri sendiri sama ada teknik-teknik yang saya gunakan bersesuaian.</i>					
18. While completing a task, I ask myself what important information should be remembered. <i>Sewaktu menyiapkan tugas, saya bertanya kepada diri sendiri apakah maklumat penting yang perlu diingati.</i>					
19. While completing a task, I ask myself whether the on-going information relates to other subjects. <i>Sewaktu menyiapkan tugas, saya bertanya kepada diri sendiri sama ada maklumat tersebut berkaitan dengan matapelajaran lain.</i>					
20. While completing a task, I use the information gain to decide whether the predictions or answers are correct. <i>Sewaktu menyiapkan tugas, saya menggunakan maklumat yang diperolehi untuk memastikan sama ada ramalan atau jawapan yang diberikan adalah tepat.</i>					
21. When I face with a difficulty in completing a task, I revise my plan, if it is not working to my expectation / satisfaction. <i>Apabila saya berhadapan dengan kesukaran dalam menyelesaikan tugas, saya mengkaji semula perancangan saya, jika ia tidak menepati jangkaan /memuaskan hati.</i>					
22. When I face with a difficulty in completing a task, I use various kinds of resources to make my understanding clear e.g. graphs, charts, key concepts, reference materials such as dictionaries, textbooks, handouts, glossary, computer programs, or databases, the CD ROMs, the Internet. <i>Apabila saya berhadapan dengan kesukaran dalam menyelesaikan tugas, saya menggunakan pelbagai jenis sumber untuk membuat pemahaman saya lebih jelas . i.e. graf, carta, kata kunci, bahan-bahan rujukan seperti kamus, buku teks, nota, glossari, perisian komputer, database, CD ROMs dan juga internet.</i>					
23. When I face with a difficulty in completing a task, I ignore the problems that occur. <i>Apabila saya berhadapan dengan kesukaran dalam menyelesaikan tugas, saya mengabaikan masalah-masalah yang timbul.</i>					
24. When I face with a difficulty in completing a task, I make sure that the content is understood clearly by asking for explanation, confirmation or examples. <i>Apabila saya berhadapan dengan kesukaran dalam menyelesaikan tugas, saya memastikan bahawa kandungan pembelajaran difahami dengan meminta penjelasan, pengesahan atau contoh.</i>					
25. When I face with a difficulty in completing a task, I try to overcome comprehension problems by linking what I hear, read and see to what I know or have learnt.					

<i>Apabila saya berhadapan dengan kesukaran dalam menyelesaikan tugas, saya cuba untuk mengatasi masalah pemahaman dengan menghubungkait apa yang saya dengar, baca dan lihat dengan apa yang saya tahu atau pelajari.</i>					
26. When I face with a difficulty in completing a task, I seek help from peers. <i>Apabila saya berhadapan dengan kesukaran dalam menyelesaikan tugas, saya mendapatkan bantuan daripada rakan-rakan.</i>					
27. When I face with a difficulty in completing a task, I try different alternatives to solve a problem / find out the solution. <i>Apabila saya berhadapan dengan kesukaran dalam menyelesaikan tugas, saya cuba mencari alternatif bagi menyelesaikan sesuatu masalah.</i>					
28. When I face with a difficulty in completing a task, I make new guesses based on what I know about world, subject, topic, issue and language when the previous one is not correct. <i>Apabila saya berhadapan dengan kesukaran dalam menyelesaikan tugas, saya membuat tekaan baru berdasarkan apa yang saya tahu tentang dunia, subjek, topik, isu dan juga bahasa apabila tekaan sebelumnya adalah tidak tepat.</i>					
29. When I face with a difficulty in completing a task, I use background knowledge, experiences and earlier information to learn, (e.g. considering consequence of the problem/information/ event). <i>Apabila saya berhadapan dengan kesukaran dalam menyelesaikan tugas, saya menggunakan pengetahuan latar belakang, pengalaman dan juga maklumat yang telah diketahui untuk belajar, (contohnya sebab-akibat sesuatu masalah / maklumat mahupun sesuatu kejadian itu).</i>					
30. When I face with a difficulty in completing a task, I encourage myself to keep on trying until the suitable way(s) to solve a problem can be found or the task is accomplished. <i>Apabila saya berhadapan dengan kesukaran dalam menyelesaikan tugas, saya sentiasa mencuba kaedah yang sesuai sehingga sesuatu tugas/masalah itu berjaya dilaksanakan/diselesaikan.</i>					
31. After completing a task, I judge whether my goals were met. <i>Setelah menyiapkan tugas, saya menilai sama ada matlamat saya telah tercapai mahupun tidak.</i>					
32. After completing a task, I decide whether the strategies used are suitable and helpful for achieving the objectives. <i>Setelah menyiapkan tugas, saya menentukan sama ada strategi yang digunakan bersesuaian dan membantu saya untuk mencapai sesuatu objektif.</i>					
33. After completing a task, I consider whether / how the knowledge/strategies can be applicable to other situations in the same subject. <i>Setelah menyiapkan tugas, saya mengambil kira sama ada sesuatu pengetahuan / strategi itu boleh diaplikasikan dalam situasi yang lain bagi mata pelajaran yang sama.</i>					
34. After completing a task, I consider whether / how the knowledge/strategies can be applied to similar situations in other areas.					

Setelah menyiapkan tugas, saya mengambilkira sama ada sesuatu pengetahuan / strategi itu boleh diaplikasikan dalam situasi yang sama dalam bidang yang lain.					
35. After completing a task, I think about other strategies that may help in this circumstance. Setelah menyiapkan tugas, saya berfikir tentang strategi lain yang boleh membantu dalam situasi tersebut.					
36. After completing a task, I make an oral or written summary of ideas/ lessons. Setelah menyiapkan tugas, saya membuat rumusan/ringkasan secara lisan atau bertulis tentang sesuatu idea / pembelajaran.					
37. After completing a task, I judge how much I learnt. Setelah menyiapkan tugas, saya menilai sebanyak mana yang telah saya pelajari.					
38. After completing a task, I judge whether predictions/answers are correct. Setelah menyiapkan tugas, saya menilai sama ada jangkaan / jawapan yang diramalkan adalah tepat.					
39. After completing a task, I decide whether the newly acquired information supports / contradicts that already known. Setelah menyiapkan tugas, saya membuat keputusan sama ada maklumat baru yang diperolehi menyokong / bercanggah dengan apa yang telah diketahui.					
40. After completing a task, I judge whether the newly acquired information is worth learning / useful for future learning. Setelah menyiapkan tugas, saya menilai sama ada maklumat baru yang diperolehi bermanfaat/ berguna untuk pembelajaran di masa hadapan.					

Personal Information

1. Name _____
2. Area of Study: ____ Business ____ Engineering
3. Age _____
4. No. of Year Studying English _____
5. Sex: ____ F ____ M
6. How well do you think you are in learning English?
____ excellent ____ good ____ fair ____ poor ____ very poor
7. Previous English Grade (**MUET / IELTS/ TOEFL/ UNIVERSITY COURSE**) _____

-THANK YOU-

Appendix VI - Interview Protocol

Participant code: _____

Location: _____

Date: _____

Time in: _____

Time Out: _____

Questions	Remarks
Initial Interviews 1. Questions on background information (age, faculty, year of study, past language learning experiences, and opinion of language learning experiences at the university for the previous and current semester)? Possible probe questions for past language learning experiences: - When you were in secondary school, how were you taught the English language? - Explain some of the methods that your teachers used to teach you? - How did you like the manner in which English was taught to you when you were in secondary school? - What did you like? What did you not like?	
2. Why is learning English important to you? Probe: current studies? Future workplace, entertainment? - How much do you like using English? - Explain how do you feel about using English in your everyday conversation? -	
3. Tell me about your strengths and weaknesses in learning and using English language. 4. How do you view your responsibilities in the learning process? 5. Indicate what you like to be able to do when you complete your language course this semester and how long you think it will take you to reach these goals. Probe: What is/are your goal/s in language learning? Why did you set this /these goal/s? Do you believe that you will be able to learn the materials in the course? Specific steps that you will take to accomplish this goals/possible blocks, both external and personal, to accomplishing this goal? How will you overcome them? Do you expect to do well in this language course?	

Follow- up Interview

6. Questions on SRL

What initiatives do you take to help yourself in your language learning?

Goal setting and Planning

- Do you clearly determine how you are going to organize your studying?
- Do you learn best when you have control of your learning, such as determining what, when, and how you will learn? Do you monitor your progress?
- Do you set specific goals for yourself each time you sit down to study? How confident are you that you will accomplish the goal?
- How do you prepare for the course assessments?

Monitoring

- When someone corrects you (such as your pronunciations, grammar, sentence structure, vocabulary usage), do you attempt to understand why you made a mistake?
- Do you keep track of errors that you usually make, look for a pattern, and decide how to correct the ones that form a pattern?
- In learning English language, do you note when something is unclear, ambiguous, or not known to you, and then do you formulate a plan for resolving these problems?

Problem Solving (adjustment)

- When you encountered problem with your study or learning, what did you do?
- Do you think of any alternatives/ strategies?
- Do you ask your teacher, more advanced students or others for help when you do not understand?

Evaluating

- Do you think it is important to evaluate your own progress in learning English? How do you evaluate your progress?
- Do you keep track of the way you have learned something and whether it is helpful? If you find it is not, do you look for other ways to learn the material?

Appendix VII

Interview survey on Meta-cognitive Self Regulated Learning (Meta-SRL) Strategies used by Learners in English Language Learning.

[Kajian Penggunaan Strategi Pembelajaran Kognitif Kendiri Pelajar Dalam Pembelajaran Bahasa Inggeris.]

Instruction: In this interview session, you are asked to give your responds concerning learning strategies you used while learning English. There is no right or wrong answer as the main objectives of this interview is to gain more information on how and what kind of strategies being used by learners in their learning.

[Arahan: Anda diminta memberi respon berkaitan penggunaan strategi dalam pembelajaran Bahasa Inggeris. Matlamat utama sesi soal selidik ini adalah bertujuan untuk mendapatkan maklumat berkaitan strategi pembelajaran yang diaplikasi oleh pelajar dalam pembelajaran mereka.]

Interview questions

1. Describe what do you do when you learn or engage yourself with a language task.
 - a. **BEFORE** - you start doing the task.
 - b. **DURING**- your engagement with the task.
 - c. **AFTER** - you have completed the task.
2. What kind of techniques do you use when you learn English? Is there any particular strategy/technique do you use to help you completing language tasks in the classroom?
3. Do you think that the techniques/ strategies that you used help you to learn English better? If yes, how or in what way? If no, why?

-Thank You-

Note: Guided stimulus (can be used by interviewer)

Do you do any of the followings:-

- i. Set any objectives/ goals in your learning.
- ii. Identify advance information to look for before completing a task.
- iii. Decide what is already known about the subject.
- iv. Identify problems that might be encountered in a given task.
- v. Check in advance your comprehension of the instruction, lecture and materials before completing a task.
- vi. Make prediction of answers for the questions before completing a task.

2. Do you frequently monitor your learning progress?

- i. Do you check periodically whether the material is making sense to you? Explain how?
- ii. Do you regularly ask yourself whether you are on the right track/ whether what is paid attention to is important for learning the subject/topic/issue?
- iii. Do you normally ask yourself whether you are using the appropriate techniques/strategies to accomplish the tasks?
- iv.

3. There may be situations that you feel you may have not understood the task or materials. How do you tackle/ solve this kind of problems?

- i. Do you use various kind of resources to make your understanding clear? If yes, what kind of resources that you normally use? eg. Dictionaries/ internets/ etc.
- ii. Do you seek for assistance? If yes, how? Do you seek help from your peers or your teacher/instructor?
- iii. When you are not clear about the content, do you ask for explanation or examples?

- iv. Do you use your background knowledge, experiences, or earlier information to make your understanding clear?

4. After completing the tasks, do you evaluate your learning?

- i. Have you ever judge whether you have met the goals?
- ii. Have you ever decide whether the the strategies used are suitable and helpful for achieving the objectives?
- iii. Have you ever consider whether / how the knowledge/strategies can be applicable to other situations/ subjects?
- iv. Have you ever evaluate whether the newly acquired information is worth learning/ useful for future learning?

Appendix VIII

Research title: The Relationship between the Use of Meta-cognitive Self Regulated Learning Strategies (Meta-SRLS) and Achievement in English Language Learning

The ultimate goal of this study is:

- To develop a comprehensive meta-cognitive self-regulated learning strategy (Meta-SRLS) framework that may be used to assess students' use of these strategies and support teachers in incorporating the strategies in their teaching.

Introduction

(Meta-SRLS) are “strategies that learners use to exercise executive control, planning, arranging, focusing, and evaluation of their own learning process” (Wong, 2005). Adapted from Zimmerman’s (2008) model of Self Regulated learning, the proposed Meta-SRLS theoretical framework suggests that students’ comprehension of their academic learning requirements emerge from their prior knowledge and social interaction with the learning environments. The framework also suggests that meta-cognitive self regulated learning involves the interaction between learners’ meta-cognitive knowledge and self regulation. Meta-cognitive knowledge involves the interaction between the three elements: learner’s knowledge of himself/ herself as a learner, i.e. self-efficacy, motivation or interest; learner’s knowledge of the tasks context such as the task demands or the information available during this task. ; and learner’s knowledge of general strategies that might be used to achieve one’s cognitive goals .Grounded in the three cyclic Self Regulated Learning phases:- *forethought*, *performance* and *self-reflection* phases, the current study provides an organizing framework for meta-cognitive Self Regulated Learning principles that can be integrated into language learning context.

In the first phase- the forethought phase, the student “sets the stage” for the upcoming learning task. It involves planning and goal setting strategies as well as activation of prior knowledge of the task and context. Whereas phase 2 concerns various monitoring and adjustment processes that represent meta-cognitive awareness of the learners in completing task. At this stage, learners will ask several self monitoring -type questions such as: “Am I following my plan correctly?”, “Am I being distracted?”, and “What strategies can I use to help me keep working?, At the adjustment stage, learners mentally review their performances and determine whether changes in behaviors or strategies are needed. Finally, Phase 3, represents various kind of learners’ self reflections and evaluation of the self, task or context.

In summary, the theoretical framework proposes that there are numbers of related meta-cognitive SRL strategies that ESL learners may use to regulate their cognition and enhance

their language performance. The listed strategies were adapted from Danuwong (2006). These strategies are assumed to be potentially under the control of the learners although it is clear that some of these strategies may be used more implicitly without much thought or control. Hence, due to its vital role in enhancing successful learning, it is important to study meta-cognitive activities and self regulated learning development so that learners can be taught to better apply their cognitive resources through meta-cognitive control.

Please provide your feedback on the following questions below. The questions are divided into THREE different parts. Please answer ALL questions.

PART 1

1. In your professional opinion, what are **some knowledge** that university students should possess about themselves that will help them become better learners?

2. In your professional opinion, what are **some qualities** that university students should possess about themselves that will help them become better learners?

3. In your professional opinion, what are **some strategies** that university students should possess to help them become better learners?

4. Are the following aspects important for one to be a better learner? State reasons why;
- a. The knowledge about oneself as a learner and about the factors that can influence their performance
 - b. The knowledge about how things can be done successfully
 - c. The knowledge of knowing when and why to use (a) and (b)

5. Order the following stages of learning into a sequence. State why you have chosen to sequence them in this way.
- a. Monitoring
 - b. Planning
 - c. Evaluating
 - d. Adjusting

PART 2

Review the **Meta-SRLS Framework** in *Figure 1* and answer the questions that follow.

1. Relevance:

- a. How relevant is the framework to help teachers develop systematic learning strategies in their students?

- b. Can the framework be used by students to self-develop systematic learning strategies?

- c. Do you see a relevance for this framework in the context of teaching and learning?

2. Effectiveness

- a. How closely is the framework related to effective teaching and learning strategies?

- b. Do you think the framework can improve effectiveness of teachers' and students' developing systematic learning strategies? Why?

- c. How well has the framework integrated the various stages (planning, monitoring, etc) of learning?

3. Efficiency

- a. How useful is the framework in developing systematic learning strategies?

- b. Does the framework provide clear guidelines and pathways for learning strategy development?

- c. Can the framework be used as a self-help tool?

4. Impact

- a. In your professional opinion will the framework have a significant impact on developing systematic learning strategies in students?

- b. Is the framework generic enough to be used within and across the learning of different disciplines and subject areas?

c. Is the framework useful for personal learning as much as for academic purposes?

d. What are the limitations (if any) of the framework as a tool for teaching and developing strategies for systemic learning?

e. What do you consider as the main strengths of the framework?

f. What suggestions can you offer to improve the framework?

PART 3

1. Do you think that the questions effectively capture the topic under investigation?

2. Are the choices of words accurate/ appropriate?

3. How do you think I could make this question better/ what words should I use to make it easier for people to understand the questions?

4. Is there anything else that you think is important/ relevant to the topic under investigation, that I haven't included in the questions?

THANK YOU