CHAPTER ONE

INTRODUCTION

1.1   Overview

Stepping into the millennium has brought forth a multitude of teaching and learning strategies most of which place great emphasis on the use of higher-order thinking skills. The teaching of higher-order thinking skills (HOT skills) is gaining a firm foothold in the school curriculum, especially in the teaching of Mathematics and Science, but its presence remains elusive in the language classrooms (Rajendran, 1998; Ali & Gill, 2003). The revamp of the Malaysian primary and secondary school curriculum was put into motion with the objective of preparing the younger generation to meet the demands of globalization (Rosnani, 1999). Of particular relevance to this study were comments by Habsah & Aminuddin (2009) that the emphasis of the integration of teaching and learning strategies in the Integrated School Curriculum is on the "development of higher-order thinking aimed at developing the cognitive aspect of the individual learner" (p. 234).

The groundwork was laid to ensure curriculum guidelines, textbooks and resource materials were prepared and teachers were trained to meet existing curriculum before its implementation in the classrooms (Rafiei, 1998; Selva, 2009). It was also stressed that by the year 2000, 60% of public examination questions would be higher-order thinking (HOT) questions (Rosnani, 1999). A decade has passed, yet to date, examination requirements are more towards regurgitation of facts and figures. The extent of classroom teaching of HOT skills remains debatable in spite of the valiant efforts of the Ministry of Education to engage and educate learners in HOT (Rajendran, 1998). The effects have been costly as Malaysia is losing out to her neighbours to compete in the process of globalization. If Malaysia is to be a significant player in world economy and achieve the status of a

developed nation by the year 2020, it is vital that her workforce be trained to compete in world markets.

This notion is supported by Duffy (2005) who notes that educators no longer believe that a knowledge of the basics is sufficient in our ever changing world. Furthermore, progress in education is too important for society to permit it being obstructed by mechanical teaching and learning (Lawrence, 2007). Therefore, this study has been undertaken to look into the impact of explicit teaching of reading strategies on the HOT skills of a primary year 4 English as a Second Language (ESL) classroom. The focus would be on the use of HOT questions based on Nuttall's (1996) reading questioning strategies namely, predicting, inferencing and personal response. The current study is hoped to bring insights as to whether explicit instruction of reading strategies during reading comprehension lessons can improve the HOT skills of ten-year olds.

1.2   Reading Comprehension

As this study looked into building of HOT skills through reading comprehension, a discussion of the reading comprehension process followed by what HOT involves is in order. "Reading is a thinking process" (Stauffer, 1969, p. 3). This cognitive view of reading proposes that readers are active processors of information with the ability to use reading strategies appropriately to accomplish the reading purpose. Learners construct knowledge rather than passively ingest information. They need to use their own cognitive abilities and knowledge along with information from the text to draw their own conclusion (Mayfield, 2007). Tomblinson (2004) posits that reading comprehension is the thinking process used to make meaning of what a person reads and involves making predictions about upcoming events by comparing predictions made to the actual outcome of the text.

Nuttall (1996) reiterated that this would mean learners apply and integrate their background knowledge to understand relations between parts of a text to make predictions and to verify expectations. Thus, the reading process is not solely about learning just one single skill but a synchronisation of skills. These said skills work together and build on each other to improve comprehension as well as increase awareness of the different reading purposes and motivation (Nor Azmi, 2004). Strain (1976) states that, "a mature individual, capable of and skillful in performance of higher levels of thinking can be assumed to be capable of acquiring reading comprehension commensurate with his thinking powers" (p. 207). As such, not only is comprehension an integral part of reading but the ability to comprehend what is read will ultimately develop thinking individuals. This engagement in reading and thinking can be viewed as a source of learning; a goal in its own right and a way of reaching other goals (Saidi, 2005). A knowledge of reading strategies such as activating and supporting learners' prior knowledge to make text connections in predicting and inferencing will further facilitate greater and deeper comprehension. This in turn will enable learners to become successful and motivated independent meaning-makers (Silvaroli & Wheelock, 2001; Duke & Pearson, 2002).

McKown & Barnett (2007) believe that explicit teaching of reading strategies through questions play a crucial role in developing learners' HOT skills during reading comprehension. It is through learners' response to questions that the teacher can get feedback regarding learners' thought processes as well as the extent of their reading comprehension. Strain (1976) suggests that for instructional purposes, reading comprehension can be measured based on a learner's specific behavioural change as a result of instruction. Clearly making choices about which questions to ask, and which level of learning outcomes is to be achieved makes a great deal of difference towards engaging learners in the reading process. From a learning and teaching point of view, planned

questioning instruction can enable the teacher to focus on the learning aspects that are appropriate to the level and ability of learners.

1.3   Higher-order Thinking in Relation to Reading Comprehension

Essentially, HOT means thinking that takes place in the higher-levels of the hierarchy of cognitive processing involving active learning (Rajendran, 2001). HOT skills, thus are cognitive skills that allow learners to function at the analysis, synthesis and evaluation levels of Nuttall's Reading Taxonomy (Nuttall, 1996). Explicit teaching of "higher-order" questions promote learning because these types of questions require learners to apply, analyze, synthesize and evaluate information instead of simply recalling facts. In Bloom's Taxonomy, "the analysis, synthesis and evaluation levels are said to involve higher mental processes where learners are in conscious control as to how to obtain information, what to use, what to believe, plans to make and actions to take" (De La Rosa, 2008, p. 3). As such, a repertoire of HOT skills would orientate learners to make choices, to evaluate and to make judgments resulting in multiple and conflicting solutions to reflect real life choices.

Currently, one of the major focus areas in educational reform is research related to the brain and brain-compatible learning in the field of teaching and learning (Fisher, 2006). It has become a standard in educational methodology to view thinking as having a hierarchy from simple to complex, from lower to higher order (Rosnani, 1999). Cardellichio & Field (1997) attached the label 'neural pruning' to our brain's natural inclination to develop mental routines and patterns in response to critical stimuli. Both researchers suggested that teachers can extend learners' ability to attend to many stimuli through the process of "neural branching". Purportedly, the use of a variety of higher-order questions in an open-ended and nurturing educational environment strengthens the brain by creating more synapses between nerve cells similar to how exercise builds muscle tissue. Research has

proven that it is certainly a case of "use it or lose it" (Stein, 2007, p. 33) and it is through training and constant practice that HOT skills can be developed.

Fundamentally, the basis for building learners' HOT skills through reading comprehension counters the view that teaching of reading in the language classroom is a routine task where students are passively sponged answers or are drilled to answer comprehension questions. Fatimah & Safiah (1987) firmly believe that the nature of reading is such that it involves higher level linguistic and cognitive processes and thus if one reads, then this is one of the best ways in which to learn. Consequently, HOT skills' training should be an integral part and a vital component in reading comprehension lessons. It acts as a catalyst to improve not only reading ability but also cognition and comprehension abilities (Stauffer, 1969). Learning the routine of engaging in HOT after reading ignites active thinking before, during and after a reading session (Fisher, 2006). HOT skills, thus allow students to function at the analysis, synthesis and evaluation levels of Nuttall's Reading Taxonomy (Nuttall, 1996).

1.4   Explicit Strategy-Instruction Involving Higher-Order Thinking Skills In Real Reading

In typical terms, being literate basically means having the ability to decode words and understand their meanings individually and collectively but this alone is insufficient. Rather, real reading involves reading the lines, reading between the lines and reading beyond the lines (Shahizah, 2004). HOT or "thoughtful literacy" (Applegate, Quinn & Applegate, 2008, p.3) is the next crucial step, often not even thought of in the reading process. It is in reading beyond the lines that reading the lines and reading between the lines have their real value involving highly challenging, constructive and critical-creative responses (Tomblinson, 2004). Through thought-provoking experiences, readers are

challenged to explore deeper possibilities underlying the particular part read as they analyse author's purpose and explore personal feelings about the written material.

Pressley & Allington (1999) and Hartman (2001) strongly advocate explicit strategy-instruction towards building HOT skills in reading even at elementary level. Explicit strategy-instruction refers in this case to the purposive activities of a teacher to make children fully aware of the active character of the reading process and of the importance of comprehension-fostering and monitoring activities in divergent thinking (Flavell, 1985, p.63). This implies that children can be instructed in strategies which support comprehension: in why, where, and when to use them, as well as in how to adapt them to various situations in order to achieve a more global understanding of the text (Paris, Lipson & Wixson, 1983; Pressley, 2000; Hartman, 2001). Engagement in real reading involves higher level linguistic and cognitive processes that range from the developmental namely language, cognition and decoding to the complexities of critical and creative reading (Scarcella, 2003).

Fisher (2006), a proponent of explicit teaching of thinking skills stated that the ultimate goal is for learners to gain automaticity to enable learners to mature into more active and constructive participants in the learning process. Readers would need to constantly apply, cross-connect and infer as they interact with the text. This would mean that real reading denotes a higher level of response to reading materials. Griffith & Ruan (2005) claimed that even though higher level cognitive operations and processes are generally found in more mature and older students, there is evidence that young children can benefit greatly if given HOT training and will develop into "problem solvers and independent readers" (p.10). In comparison to traditional literacy with its over emphasis in pronunciation skills and literal text comprehension; real reading transcends conventional notions of reading comprehension per se. In order to unmask meaning of what is read, readers have to delve

deeper to identify with and to challenge the contents of text read. This can only be achieved through explicit teaching of reading strategies. As such, a knowledge of reading strategies is a necessary prerequisite to achieve the objectives of higher levels of thinking (Scarcella, 2003).

1.5   Background to the Study

The widespread focus on HOT skills in teaching and learning especially to organize and control knowledge is ever-increasing (Philip & Tan, 2006; Rajendran, 2001). Rosnani (1999) states that the advent of the Information Age has made crucial the development of HOT skills as future workforce will be required to synthesize large volumes of information into meaningful knowledge structures without becoming lost in a quagmire of data and information. In the same vein, the World Wide Web has raised special interest in the means of learning where learners of today and tomorrow views the internet as their most significant source of information not only for academic purposes but also in their daily life (Brown, Marsh, Craven & Cassar, 2005, p.2). This fast-changing pace of information transfer has aligned Malaysia with other developing countries. In the pursuit to compete globally, Malaysia's ultimate resource is to develop the talents, skills, creativity and will of the people so as to produce a nation of forward thinkers (Rosnani, 1999).

On the other hand, it is also a known fact that Malaysia's education outcomes have fallen behind countries like Singapore, Hong Kong and Korea. Various national reports have criticized the education system for failing to prepare students for the world in which they will spend their adult lives (Ministry of Education, 2006). The gap is ever widening amongst the performance of learners at university level and the success rates of graduates to secure jobs they have been trained for (Rosnani, 1999). Indeed there is a necessity for learners to be independent thinkers as an increasingly wide range of jobs in the future

require a workforce with multiple skills. In view of this, one of the challenges of Vision 2020 is to create a society of knowledgeable and informed citizens with goals oriented towards pursuing excellence and world class education (Siti Aishah, 2003). In writing about a Malaysian experience, Abdullah (2005) reiterated that 'teaching higher-order cognition help learners to become independent learners and "developing thinking abilities in learners are more and more becoming commonly stated educational aims" (p.2).

A reading culture is without a doubt, the pillar for moulding excellent thinkers and intellectuals. Indeed, the engagement in deep reading can ultimately be a source of enjoyment and a way of gaining knowledge of the world. Bakar (2006) implicitly states that the love for books and reading should be fostered and nurtured right from young. According to Fatimah & Safiah (1987), the non-reader today is a severely handicapped person and should be regarded as being among the disadvantaged who must be helped if he/she is to play an effective role in society. Henceforth, even though we have managed to achieve an adult literacy rate of 92%; a study carried out by Pandian (2001) found that adults in today's age can read but choose not to read. Prior to this study, a survey on the reading profile of Malaysians in 1996, commissioned by the National Library of Malaysia revealed that the average Malaysian read an average of 2 books a year (Bakar, 2006). By and large, South East Asians read for utilitarian reasons only and even amongst the educated classes, reading for pleasure is a rare occurrence (Dicker, 2004).

A reading survey (Raj & Hunt, 1990) carried out by several local universities disclosed that out of the 15,054 sample population, the average Malaysian spent RM10 on reading material. To address this problem, the Ministry of Education (MOE) thus, embarked on a drive to develop the reading habit in schools. Amongst projects undertaken are the Malaysian Class Reader Programme, the English Hour and the Extensive Reading programme (*Nadi Ilmu Amalan Membaca*-NILAM). Methods advocated by Fatimah &

Safiah (1987) towards fostering favourable attitudes towards reading include reading games, leisure reading programmes, and sustained silent reading/study as part of classroom activities. There has been some measure of success but much still remains to be done. This could be due to the home environment where the English language is hardly or never used and students only had contact with it at school. Irrespective of socio-economic status, reading whether in English or Bahasa Malaysia was not the norm.

In most English language classrooms, students prefer to speak in Bahasa Malaysia and the main grouse of teachers is that students have to be constantly encouraged and reminded to converse in English. Even then, normally the first few words would be spoken in English but the rest would end in Bahasa Malaysia. Saidi's study (2005) on the relationship between English proficiency and HOT skills, found that 90.7% of his respondents did not use English to communicate and 67.1 % did not read in English except for academic purposes. Low proficiency in English was correlated to respondents' inability to understand HOT questions. The quest to complete the syllabus and to prepare learners to excel academically have also shortchanged the development of HOT in the classroom and this constitutes the major problem in the creation of effective thinkers (Saidi, 2005).

1.6   Statement of the Problem

It has always been a matter of great concern for the researcher to see her students experiencing difficulties especially in answering HOT questions during reading comprehension lessons. Through the researcher's observations and grading her students' written responses on comprehension tasks, it was found that students struggled to derive meaning from the text they have read. It was a bane for the teacher- researcher to get any response from her students. The common practice was more time was spent teaching students to complete worksheets and training students to achieve success in final

examinations than to focus on preparing students to be real readers (Nurliza, 2002; Lee, 2004; Van Keer, 2004). Undoubtedly, the "prevailing round-robin practices dominates most classrooms" (Lawrence, 2007) and these practices do no more than develop "non-thinking fact parrots" (Stauffer, 1969, p.37). Admittedly, the researcher too did carry out reading comprehension lessons in the same said way. Therefore, it was of no surprise that her students would scramble to answer the literal questions but when it came to the 'why' and 'how' questions, silence would ensue. The "primary concern of the teacher is to complete the syllabus before the end of the year" (Habsah & Aminuddin, 2009, p.235).

Taking this view further, it has been reported that students in the language classroom were not taught HOT skills resulting in a sizeable proportion of "practically false beginners even at tertiary level" (Wong, 1998 as cited in Philip & Tan, 2006, p.3). This is also supported by Neff, Showers & Vaughan (1995) who found that young learners' reading problems during reading comprehension lessons was as a result of ineffective methods. The same mundane spoon-feeding and restrictive classroom methodology is still very much practiced. Indeed, this is alarming as it is essential that young people learn not only to read but also to cultivate the reading behavior for lifelong enrichment. The task is indeed challenging and going against the tide in this information rich world where everything seems to happen with just a mouse-click. Taking into consideration the factors discussed, this then paved the way for the basis for this study.

1.7   Research Objective

To describe the impact of explicit strategy-instruction to develop higher-order thinking skills through reading comprehension in a primary year-four ESL classroom.

1.8   Research Questions

This study comprised of the following research questions:

1.   How does explicit reading strategy-instruction affect the reading performance of a class of primary year 4 ESL students?

2.   How does explicit reading strategy-instruction develop the higher-order thinking skills of a class of primary year 4 ESL students?

1.9   Purpose of the Study

The purpose of this study was to look into how explicit strategy-instruction would affect the reading performance of a class of primary year- 4 students and its impact on the HOT skills of the students during teaching of reading comprehension lessons. As compared to traditional reading comprehension instruction, the major substantial change in this study was explicit reading strategies instruction related to the content of teaching and learning. More specifically, evaluation was carried out to look into the efficacy of explicit reading comprehension instructional innovations in real reading classrooms. The aim of the teacher-researcher was to add to the body of information towards the differential effects of explicit reading strategy instructions. Intervention by the teacher-researcher was in the form of planned activities through whole-class activities to concurrently determine the impact of explicit reading strategy-instruction during reading comprehension lessons.

1.10 Significance of the Study

The need to prepare students to better cope with the advent of globalisation is a recurring theme throughout the Government Transformation Programme (GTP) which was spearheaded by our Malaysian Prime Minister Dato' Sri Najib Tun Razak in April 2009 (PEMANDU, 2011). Six National Key Result Areas have been identified to ensure that

Malaysia achieved the status of a fully developed nation by the year 2020 and remain competitive in the forefront of change and development. Amongst these is to improve student outcomes in line with the objectives of the Philosophy of Education which is to produce a society of thinking individuals and a young generation of forward thinkers (Rosnani, 1999).

Rajendran (1998) suggests that to be productive citizens in a rapidly changing technological society, students will need to have strong critical thinking and problem-solving skills. Hence, classroom experiences that engage students at higher levels of thinking should become common practice. By linking explicit reading strategies instruction with HOT skills, the present study builds on former research, focusing on higher order questioning techniques during reading comprehension (Palincsar & Brown, 1984; Gagne, Yekovich & Yekovich, 1993). Thus, this study is an attempt to take reading comprehension to the next level and the findings is hoped to add to the limited research on the teaching of HOT skills to enhance and improve reading performance in the language classroom. It would ultimately provide data that may be used to create a new paradigm for classroom organization and structure. The results would also be useful for educators who are formulating long-range plans.

1.11   Limitations of the Study

The scope of this study was limited to the characteristics of the small population chosen. It should not be used to generalize all primary year four English as a Second Language learners. The profile of the sample is not comparable to that of the state or country, and therefore, generalizations would definitely require additional research. A second concern is the inability to control the impact of the home environment and support such as parental guidance, private tuition and on-going classroom teaching. In addition, the reading

strategies identified for the purpose of this study are namely predicting, inferencing and critical thinking. Comprehension questions were constructed solely by the researcher based on her readings of reading inventories.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1   Introduction

De Bono (1992) maintains that the "simple bicycle is one of mankind's greatest inventions as this simple machine maximises man's own abilities to recover energy" (p. 56). Similar to the bicycle, thinking abilities can be recovered. Teachers can purposefully gear up learners' natural intelligence through practice to enter into the realm of HOT. Children are capable of making decisions and problem solving at all ages and thus, teachers should rethink the way reading comprehension is taught in the language classroom (Strother, 1989). Indeed, much literature has documented research on reading and higher level thinking in countries such as America (Pressley & Allington, 1999; McKown & Barnett, 2007) Holland (Van Keer, 2004); and Australia (Melville Jones, 1999) but in Malaysia, very few studies have examined carefully the impact of HOT skills in students' reading comprehension performance or developed meaningful analyses of them (Rosnani, 1999; Rajendran, 2001; Saidi, 2005; Randi, Grigorenko & Sternberg, 2005).

This chapter sets out to discuss the theoretical and conceptual underpinnings of the study. This study is conducted to investigate the development of HOT skills in reading comprehension of a class of primary school children following explicit reading strategy-instruction. The review would begin with a discussion of reading comprehension and HOT skills followed by a discussion on the pedagogical aspects of HOT in the language classroom and the role of teachers and educators in implementing the change.

2.2   Cognitive Learning

Research on cognitive learning has shown that there is growing interest across the world to develop young learners' thinking skills (Pressley, 2000; Gagne *et al.*, 1993). Even though language learning is viewed as a complex task that requires the use of cognitive resources to process information but through cognitive awareness and practice, learners can be trained to gain automaticity (Lightbrown & Spada, 2006; Lawrence, 2007). To achieve this, Fisher (2006) states that learning tasks should be incorporated in meaningful contexts and promote problem-solving in order that learners can actively construct their own knowledge. This activation of the learners' schemata would then provide a context for interpretation to facilitate comprehension. As schemata are formed from prior experiences and knowledge of the world, they represent a dynamic system which is constantly changing and expanding (Andre, 1986). This implies that the learner is actively and constructively drawing upon background knowledge; relating new information to what is known in order to reason and make sense of present situation in the pursuit of autonomy.

Proponents of cognitive learning advocate active, not passive learning. Jenkinson (1973) states that "reading is a form of thinking, problem-solving or reasoning and founded on past experiences" (p.45). Brown (2000) defines "problem solving as a divergent thinking process that requires the learner to sift and weigh existing information, previously acquired concepts, principles and knowledge to react and respond appropriately to a learning situation" (p.92). Essentially, there is greater learner involvement and control over their own learning as learners embark on a process of complex problem solving towards the development of HOT skills. Ali & Gill (2003) from the Curriculum Development Centre (CDC), Ministry of Education (MOE), Malaysia, acknowledged that it is through reading comprehension that learners' cognitive skills can be developed. This is supported by Pressley & Allington (1999) who believed that the teaching of thinking skills in the reading

classroom would heighten consciousness to assist learners to become more active and skilful in monitoring their own learning.

2.3   Past Studies

As the current study looks into HOT skills training in reading comprehension, it is necessary to review other studies on this phenomenon. Numerous studies on HOT in reading comprehension have indeed provided literacy educators with a greater understanding of the reading comprehension process. The compensatory strategies that successful readers employ have resulted in a plethora of ideas for effective comprehension instruction.   Amongst the studies that show a positive relationship between strategy instruction and reading performance are studies by Muniz-Swicegood (1994); Neff *et al.*, (1994), Jimenez (1997); Philip & Tan (2006).

Muniz-Swicegood (1994) conducted a study on the need for strategy instruction to promote HOT among bilingual Spanish dominant third-grade students. The study was replicated in support of positive and encouraging results from past studies done on monolingual English speaking children. Participants were explicitly taught the use of Spanish reading strategies during reading comprehension lessons. Post intervention data obtained revealed improvement in reading performance in both Spanish and English. The conclusion drawn from Muniz-Swicegood's study (1994) is that irrespective of whether strategies were taught in the first or second language, the transference process across languages did take place. The results obtained thereby added value and support for the basis for this study as the participants for this study were not only second language learners but also came from similar age group.

The study by Neff *et al.* (1994), found that the overall decline in reading scores of students throughout the United States could be due to the fact that children were not taught higher-

level thinking skills in reading comprehension. Neff *et al.* (1994) carried out explicit teaching of strategies to increase pupils' reading comprehension. Open-ended questions were used as a tool to promote greater pupil awareness to develop HOT skills. The findings unveiled that meaning constructed from the same text varied greatly among children because of differences in the knowledge and lack of life experiences or schemata knowledge. According to Neff *et al.* (1994), prior knowledge activation is the framework that helps learners to assimilate new information to effect the desired change in the comprehension process. Instead of reading a piece of text literally, meaning construction goes beyond the word level and requires the reader to recognize implied and inferred meanings (Jenkinson, 1973, p. 46).

Neff *et al.* (1994), imply that learners need direction and specific strategy instruction to enable them to apply their comprehension skills to a reading situation. This insight led the researchers to conclude that to stimulate understanding, prior knowledge is important. This is clearly espoused by Lawrence (2009) in her discussion on the use of reading strategies among bilingual students and the importance of "activation of prior knowledge or schema as necessary ingredients to become successful readers" (p. 55). Specifically, young learners can be taught HOT skills through reading strategy instruction. It would be indeed a futile effort to supply a library of the best and most interesting story books for children when all they do is to flip through the pages of the book instead of getting them to be engaged to read beyond the lines.

In another study, Jimenez (1997) demonstrated that strategy instruction had a positive impact on the reading performance of bilinguals. Jimenez believed that strategies used by successful bilingual readers can be taught to improve the reading performance of low proficiency students. He posits that bilinguals had the capability of transferring or applying their literacy knowledge and abilities from one language to the other. Strategies such as

inferencing, drawing conclusions and integrating prior knowledge and experience in meaning construction during reading comprehension lessons can and should be taught to students irrespective of their language proficiency. As argued by Tomblinson (2004), this is not necessarily because of "greater intelligence, but because of more experience and more practice in the business of literacy" (p. 15).

In the quest for efficient ways to assist struggling tertiary students to master the English language, Philip & Tan (2006) carried out explicit teaching of reading strategies. Metacognitive Strategy Instruction (MSI) was correlated with increased reading performance amongst low and high proficient learners. The statement of the problem was that even students at tertiary level had little or no knowledge of strategic processes when confronting texts that are challenging to comprehend. The efficacy of MSI was found to enable learners to successfully know the 'how', 'when' and 'where' to apply strategies and to construct meanings from the reading text. Knowledge of strategies was deemed a flexible tool that readers used to update their understanding of a text. Furthermore, regulation of one's cognition through generating questions activated prior knowledge and facilitated learners to discover hidden meaning in text. This cognitive use of learners' mental faculties was not mechanistic at all but highly metacognitive by nature. Philip & Tan (2006) suggested that learners be given conscious instruction in digesting academic texts through teaching of reading strategies and skills to enable learners to achieve a critical level of autonomy.

Similar studies by Johnson (2000); Nurliza (2002); Lee (2004) and Van Keer (2004) also supported the phenomenon that teaching of HOT skills via reading strategies for developing comprehension is the exception rather than the rule in the language classroom. Purportedly, the instructional practice of teaching reading in primary schools is still very traditional,

characterized by a great deal of comprehension 'testing' (questioning students about the content of a text after reading it). There is hardly any explicit and continuous instruction that aim at making students astute in strategy selection, use and evaluation (Alderson & Lukmani, 1989; Rajendran, 2001; Sharmini, Ng & Ng, 2003; Samuel, 2005). Notwithstanding the importance of cognitive and metacognitive strategies as tools for enhancing reading comprehension, there is no reason to assume that all primary students can spontaneously use them. Clearly, "strategy instruction with bilingual students at an early age is necessary before students begin to develop negative reading habits" (Lawrence, 2007, p. 56).

2.4   Use of Questioning Strategies in Reading Comprehension

Questioning is a process readers use before, during and after reading. The questioning process requires readers to ask questions of themselves to construct meaning, enhance understanding, find answers, solve problems, find information and discover new information (Duke & Pearson, 2002). Teachers need to ask students questions during and after reading a passage. Students are asked to return to the text to find answers to questions. The importance of getting students to answer HOT questions motivates them to think deeper, elicit deeper processing of information and stimulate more advanced learning to occur in the learning process (Ng & Chan, 1999). Ultimately, a teacher who can embed practices and effective questioning in the reading classroom will stimulate more advanced learning and assists in bringing substance to the language classroom (Strother, 1989).

Questions direct students' thinking process as they search the text for meaning; combining information, connecting parts of the text, evaluating the message towards better comprehension and meaning construction (Philip & Tan, 2006). The involvement of readers in meaning construction is a dynamic process where readers formulate

interpretations by inferring, connecting and synthesising details. This mental map is "alive and is subjected to change as textual information continually unfolds before the readers" (Thomson, 1988, p. 38). Hence, readers need to justify their interpretations by analysing and synthesising textual support; drawing on their own personal experience and other stories to confirm or disconfirm message. By clearly linking questions with answers using texts, a small body of research has provided some insights for how students might approach the task of answering questions (McKown & Barnett, 1999; Rajendran, 2002; Supramani, 2006).

McKown & Barnett (1999) conducted a study which examined HOT questioning on a group of young learners in a language classroom in America. The objective of the study was to improve reading comprehension through the teaching of HOT skills. McKown & Barnett (1999) claim that "without a solid foundation of reading skills, children will struggle throughout their schooling and adult life" (p.7). The study looked into how HOT affect participants' reading performance, their use of reading strategies and their language proficiency. The results indicated that compensation and metacognitive strategies were the most used whereas affective and memory strategies were the least used. Cognitive and compensation strategies showed significant positive variations in relation to the proficiency level. Participants with a higher level of proficiency reported more frequent use of these strategies. The results of the study identified that HOT questions did facilitate and improve reading comprehension performance especially amongst low proficiency learners.

In a local study conducted by Rajendran (2002), it was found that during Bahasa Malaysia literature lessons, question-answering instruction impacted positively and significantly on reading comprehension. His findings affirmed the potential of using the language classroom as a platform to teach and promote HOT to connect the learner with the world beyond. This is very much supported by Rafiei (1998); Ng & Chan (1999); Selva (2009). As English is

taught as a second language in Malaysia, Beck (1989, pp. 680-682) as cited in Rajendran (2002) opined that "language arts is the perfect vehicle for developing HOT skills where readers engage in effective and ineffective attempts to explore, to reason and to problem solve". Rajendran (2002) further concludes that teachers and students would benefit from research that identifies factors of HOT implementation that could contribute to increase academic achievement.

Supramani's study (2006) was carried out to find out the incorporation of HOT skills in verbal questioning in a Bahasa Malaysia classroom. Findings revealed that the ratio of lower order with higher order questions asked in the language classroom was 1:4 and there was a lack of activities in Bahasa Malaysia textbooks that engaged learners in HOT. Learners were drilled to scan for keywords to answer test questions. On the contrary, HOT questions were found in public examinations such as the Year 6 *Ujian Penilaian Sekolah Rendah* (UPSR), Form 3 *Peperiksaan Menengah Rendah* (PMR) and Form 5 *Sijil Pelajaran Malaysia* (SPM) (Supramani, 2006). De Bono (1992) strongly believes that there is "a need to develop the skill of thinking" (p. 8) and the teacher's effective use of a variety of higher-order questions in the classroom is one sure way of training learners' cognition to become more open to new ideas.

Clearly, classroom practice has fallen short of planned objectives as what was tested did not reflect curriculum design nor what was taught in classrooms. This was in contradiction to the objectives of the thinking skills programme which was officially implemented in schools throughout the country by MOE since 1994 (Rafie, 1998). Supramani's study (2006) also revealed inadequate teacher knowledge and inconsistency in higher-order teaching methodology in the classroom. Learners encountered difficulties in reading between the lines and had limited ability to answer lower- order questions only.

2.5   Teachers' Knowledge of Higher-Order Thinking Skills

Engaging learners in HOT requires shifting of focus from teaching to learning, with more and more of the learning coming under the control of the learner. Past research done has shown that teachers spend very little time teaching comprehension strategies (Strother, 1989; Rafiei, 1998; Melville Jones, 1999; Block, Gambrell & Pressley, 2002; Nation, 2005). Further analysis of the literature lends support to the current perceived need for improved instruction and student achievement through the teaching and training of HOT skills in classrooms. This has certainly challenged educational administrators to find optimal ways of integrating HOT skills across the curriculum to fulfill the aspiration of Vision 2020 (Abdullah, 2005; Noor Rohana, 2005).

Pedagogically, it would seem that teachers have been provided with suggestions for general methods for teaching comprehension but to date there is still a lack of a clearly defined instructional programme together with appropriate classroom materials for the teaching of specific reading comprehension skills. In addition, knowledge of reading strategies is insufficient as educators need to be convinced of the importance of learning how to teach reading strategies so that they can in turn provide opportunities for students to develop a more meaningful reading experience in the language classroom.

The study by McKown & Barnett (1999) revealed that teachers were talking most of the time during classroom interaction depriving the opportunities for students especially low English proficient learners to develop original and higher-level cognitive processes. This is confirmed by Abdullah's study (2005) where it was found that the most popular teaching approach to teach English as a Second Language in South East Asia is still the traditional deductive approach. Inevitably, this seemed to have become the be-all and end-all of

language teaching which in fact had limited the opportunities for learners to express their views to engage in higher-level thinking.

Rafiei (1998) from the Board of Inspectors MOE, Malaysia conducted a study to find out the extent of the teaching of critical and creative thinking skills in the national language classroom. Data was collected from a total of 657 respondents comprising of teachers throughout 185 secondary schools in Malaysia. A fact that warranted attention was that the majority of the respondents seriously had no idea as to what thinking skills were. 66% of the teachers studied had no lesson plan whatsoever when carrying out classroom teaching of HOT skills even though most of them had received some form of training in teaching of HOT skills. Of the total number of questions directed at students, only about half were HOT questions with 46% of questions in written exercises being knowledge-based.

Subsequently, Nurliza (2002) from the International Languages Teacher Training College (*Institut Perguruan Bahasa Antarabangsa* - IPBA) in Kuala Lumpur, carried out 4 case studies to investigate teachers' knowledge of thinking skills and its effect of thinking skills in teaching and learning. According to Nurliza (2002), teachers must first be convinced of the importance of cultivating the habit of encouraging their learners to think out of the box in order that the younger generation can indeed think. Henceforth, the ability to think is not just a simple thought process. It encompasses problem-solving skills, reasoning skills and the ability to think critically and creatively. Real thinking goes beyond comprehension to empower an individual to embark on a journey to interpret, apply, analyze, synthesize, evaluate and respond to a particular situation.

Nurliza's study (2002) yields findings that teachers were struggling with what exactly teaching of thinking skills involved in the language classroom. She stressed the need to expose all teachers to thinking skills and also to equip them with the know-how as to how

to cultivate this cognitive skill in the language classroom. Teachers should also be cognizant to learners' metacognitive awareness of themselves as learners: how one learn, think, react, reflect and what to read, which strategies to use and why a particular strategy is used instead of another. Only then can the potential of each learner be maximized to expedite the learning process.

In a related study, Sharmini *et al.* (2003), looked at in-service teachers' perception on reading in a primary school. The study disclosed the narrow and traditional teaching of reading in the English language classroom where the stress was on reading aloud and answering lower-order questions. The yardstick to measure comprehension skills was ironically through gauging of reading accuracy in mouthing words rather than on reading for meaning. A child's reading ability was based on how well he/she reads aloud. This would then be followed by exercise after exercise of answering literal comprehension questions. The respondents agreed that a lack of prior knowledge can impede comprehension of text so the general practice in the language classroom was that the teacher would explain meanings of difficult words and then write them down. Despite the fact that this was deemed "the worst technique" by the teacher herself, the focus in this particular language classroom was solely on word level decoding and literal comprehension. Learners were drilled to answer comprehension questions through key-word identification to prepare for examinations.

Teachers as movers are a powerful force to expedite the change but they must first be convinced and be trained towards the importance of cultivating learners to acquire the habit of thinking out of the box. This goes beyond mere comprehension and will engage learners to read cogently and empower learners to interpret, apply, analyse, synthesize, evaluate and balance their opinion based on their prior knowledge and the relevancy of the text (Scarcella, 2003). Clearly, "serious questions abound about teachers' knowledge of how to

teach HOT skills to young readers. These concerns are as current in 2000 as they were twenty years before" (Block *et al.*, 2002, p. 328) bringing home the message that there should be re-training of teachers and incorporation of HOT instructional programmes into teachers' training colleges (Rajendran, 2001).

Reformers from MOE has been mandating the teaching of HOT skills in schools but this has not got off the ground as attempts to incorporate 60% of HOT questions in national examinations by the year 2000 has still not achieved desired results (Sharmini *et al.*, 2003; Lee, 2004). Teachers are seen as agents of change in line with Malaysia's Vision 2020 to nurture the younger generation to grow into a thinking and innovative society (Rosnani, 1999) but to date teachers are still not given proper training to teach HOT skills. Realistically, they are faced with the dilemma of inadequacy to integrate HOT skills in content instruction in language classrooms (Rajendran, 2001). Implications from past studies have not been able to delineate the relationship between implementation characteristics and increased academic achievement (Wong & Chang, 2001; Rogers, 2005). Teaching of HOT skills is crucial and teachers can definitely help improve student comprehension through instruction of reading strategies. Comprehension strategies such as predicting, inferring, making connections and questioning should be implemented as early as kindergarten (Neff *et al.,* 1995; Pressley & McCormick, 1995; McKown & Barnett, 2007).

Fatimah & Safiah (1987) stated that to facilitate the unfolding of individual potential and talents to the utmost possible, teachers must contrive to provide opportunities, incentives, and a conducive environment towards the development of deep reading. Undeniably, a considerable amount of teacher preparation would be needed to effectively teach HOT skills through reading comprehension. Skill development is a gradual process that takes time and involves changes to efficient strategies (McEwan, 2004, p.7). Therefore, as early as the pre-service level, teacher education should provide extensive instruction on how to

teach comprehension strategies in the language classroom (Rajendran, 1998; Sharmini *et al.*, 2003).

All said and done but constraints exist where even training teachers to meet the demands to teach Mathematics and Science in English has met with a host of problems (Noraini, Loh, Norjoharuddeen, Ahmad & Rahini, 2006). Directives can be issued but if implementation does not follow, training of teachers specifically to teach HOT skills in the language classroom may just remain on the drawing board. In order for schools to address the economic and societal demands on education, it is apparent that a new paradigm is needed (Rosnani, 1999; Supramani, 2006; Selva, 2009). Learners will need a radically different array of skills to negotiate this new information landscape without which educational goals will never be achieved (McKenzie, 2004).

Johnson (2000, p.14) stressed the pivotal role of teachers in helping learners gain efficacy and confidence in HOT skills. Teachers, on the other hand, are guided in their teaching by textbooks in accordance with the syllabus as mapped out by CDC under the jurisdiction of MOE. Teachers should be trained to discriminate between high and low-order questions. They need to be equipped with the know-how to teach HOT skills explicitly in the language classroom. This is hoped to give learners the competitive edge to propel themselves forward into the next century. The ultimate goal is to ensure the fulfillment of the aspiration of Vision 2020.

2.6   Classroom Practice in Building Higher-Order Thinking Skills

Melville Jones (1999) noted that the potential for significant curriculum and instruction reform in the classroom is becoming more a reality through HOT skills in the language classroom. The emphasis should be on the use of appropriate material already in the curriculum and this is very much supported by De Bono (1998) who strongly believed that

any "operating concept should be accompanied by practical steps which can easily be executed and implemented failing which it would be left in theoretical space" (p. 302). In his book "Simplicity", De Bono (1998), states that accessibility holds the key towards successful teaching of HOT skills.

Readers who are engaged in real reading would be required to not only digest a piece of text but also automatically react to it. The "use of quality children's literature is one of the many elements to hook the students' interest" (Tomblinson, 2004, p 16). This is especially true in incidents where the reader can relate to characters in text dealing with difficult moral choices in life. In the words of Bruner (2002), "by going beyond into the realm of the possible, the might-be, could have been, perhaps will be" (p. 13), readers can live out their fantasies and hopes, make sense of the world and practice reflective thinking. Insights of characters in stories will engage readers in HOT to shape their views on how they perceive themselves and others around them. The utilization of higher-order questioning would challenge readers to explore and develop a new or different perspective on how they view themselves, others and the world they live in (Bruner, 2002).

Reutens (2004) advocates engagement of the readers' thinking process and sees the potential of stories "to shape the readers' moral consciousness towards the development of a cognitive framework" (p. 331). Henceforth, this would in turn encourage learners to assimilate views other than one's own in text interpretation leading to personal growth and change. As such, the process of comprehension is not only cognitively demanding but is also a problem-solving activity. In sum, proficient readers are typified by the mastery and use of metacognitive and cognitive strategies that facilitate text comprehension (Wong & Chang, 2001). Both are higher-order skills that require judgement on the cognitive demands of a task and engagement to comprehend what is read. According to Tomblinson (2004), it is this higher level of interaction with text that is the "ideal for learning to propel learners to

think beyond their capabilities" (p. 17). Inherently, readers who are able to orchestrate a combination of HOT skills to interact with a piece of text will eventually gain responsibility and automaticity to achieve the real reading purpose.

In discussing shortcomings of recent research, Supramani (2006) noted that previous studies have suggested the need for more research which demonstrates the effectiveness of relatively small-scale but easy to implement projects similar to action research which are guided by theoretical ideas about teaching and learning. What is needed is to move classroom activities that involve HOT into the core of language lessons. The emphasis should be on developing higher-level thinking as well as a multitude of instruments to measure this change in student performance. In short, on-going evaluation systems should be designed to measure HOT skills rather than simple recall of facts (Duke & Pearson, 2002; Lawrence, 2007).

Bearing in mind that higher mental processes is the creation or generation of ideas, processes or experiences involving divergent thinking, learners need to be trained to make value judgement (De La Rosa, 2008). As such, teachers need to plan and scaffold thinking activities in order that learners are explicitly aware that they are thinking (meta-cognition) and that they are utilizing different thinking strategies for different problems. This is hoped to lead to the emergence of HOT skills as learners analyse, hypothesise and evaluate the elements of the text in reading comprehension.

2.7   Conclusion

The ability to think critically is essential if individuals are to live, work and function effectively in our current and changing society. Information sources are no longer static and fixed. They are constantly dynamic, open and available (McKenzie, 2004). Learners must

make choices, evaluation and judgment in their daily living regarding information to obtain, use and believe; plans to make and actions to take. Thus, this chapter has looked into the theoretical underpinnings that frame this study, that is, the development of HOT skills in reading comprehension. The literature examined and reviewed provides an overview on the processes involved in reading and developing HOT responses to texts used to execute the study. The following chapter will discuss the methodology used to gather and analyse the data for the study.

CHAPTER 3

METHODOLOGY

3.1 Introduction

The ability to engage learners in the thinking process will empower learners to learn more effectively and ensure lifelong learning. Likewise, with all the attention paid to thinking and thinking skills, it makes sense to consider how questions and thinking act as generative elements in the language classroom. The aim of this study is to examine the reading performance of a class of year-four primary school children in an ESL classroom after explicit instruction of reading strategies to develop HOT skills. The sequence for this chapter begins with the research approach adopted by the researcher, a description of the research setting, the participants, the instruments used to collect the data and an explanation of both the Critical Reading Inventory (Applegate *et al.*, 2008, pp. 16-17) and Nuttall's Reading Taxonomy (Nuttall, 1996, pp.186-189). This would then be followed by a summary of the stories used during explicit strategy-instruction, the reading tests administered pre intervention and post intervention and finally the procedures used to collect and analyse data to maintain the justification for this study. The results obtained would then be used to address two research questions. The first being whether explicit reading strategy-instruction would affect the reading performance of a class of primary year-four ESL students and the second, to answer whether explicit reading strategy-instruction would be able to develop the HOT skills of a class of primary year-four ESL students. Figure 3.1 presents an overview of the framework in the execution of this study.
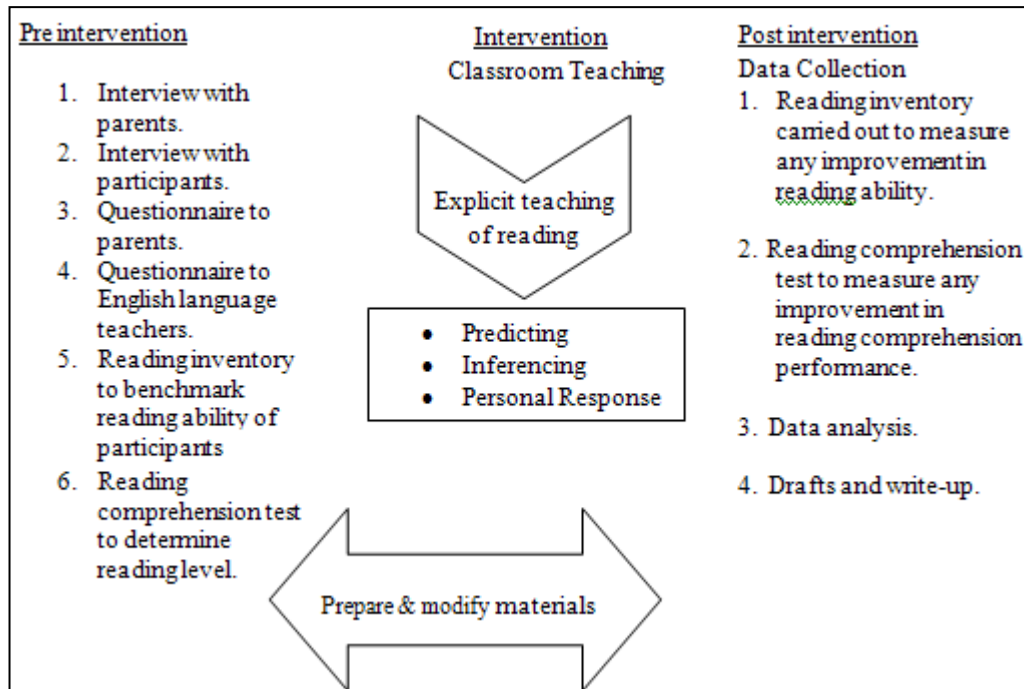
Figure 3.1 Framework to Study the Impact of Explicit Strategy-Instruction During Reading Comprehension Lessons

3.2 The Research Approach

Both qualitative and quantitative methods of research were employed for this study. To define both approaches, Cresswell (2008) states that qualitative method offers a more holistic analysis in research. A qualitative approach would involve the gathering of first hand data in a naturalistic setting to describe the occurrence being studied whereas in the quantitative method, emphasis is on quantifying relationships between variables. The complement of one to the other was essential to enable the researcher to have a clearer view of the phenomenon being investigated. The researcher was able to maximize the advantages of both approaches and overcome possible limitations. Henceforth, this study was an attempt to look into the relationship of development of HOT skills and the reading

performance of ten-year olds following explicit strategy-instruction during reading comprehension lessons. The results obtained from pre and post intervention reading test scores were compared and analysed to formulate rational and sound conclusion to add to the growing body of resource on thinking protocols.

3.3   The Research Setting

The school chosen for this study is one of the eleven primary schools in Putrajaya. Putrajaya is the administrative capital of Malaysia. Most of the 75,000 population are in the civil service. The Putrajaya School Complex houses a primary and secondary school, a multipurpose hall, a mosque (*surau*), a pavilion and a huge playing field. The school complex being part of this green city is surrounded by well-kept gardens and lush greenery creating a very conducive environment for teaching and learning.

3.4   The Participants

The study cohort of thirty pupils were ten-year olds selected through "convenience sampling" (Johnson & Christensen, 2000, p. 174). First, the researcher defined the population by listing down all the members of the population and then selected a total of thirty participants to make up the sampling. Various factors supported this choice of convenient sampling. The main reason was that the researcher was the class as well as English language teacher. The researcher was allocated 210 minutes per week teaching English and reading comprehension lessons were also part and parcel of the learning specifications as mapped out in the English Primary Year Four Scheme of Work. Being the class teacher, the researcher had regular contact with the participants as well as convenient access to details regarding participants' background, parents' occupation, income as well as

participants' academic performance from the Student Information System 2009 (*Sistem Maklumat Murid* 2009).

Twenty-eight out of the thirty participants' parents were either civil servants or ex civil servants with a per capita income ranging from RM1250 to RM2300 (Student Information System, 2009) with the remaining two participants' parents involved in the private sector. The school-based English oral assessment conducted by the researcher revealed that only five out of the thirty participants use English in some of their daily activities, leaving the majority of the participants not using the language at all outside the boundaries of the school. The average mid-year results for English was 55.8%. The scoring criteria used in the evaluation adhered to the test descriptors as mapped out in the Year Six Public Examination (*UPSR*).

3.5   Ethical Considerations

Prior to the commencement of the study, the researcher had a meeting with the headmistress of the said school to discuss the objective for this study. Consent was granted as the researcher explained the non-intrusive nature of the research as data collection would be collected at the source which was during English lessons. Conflating the role of teacher and researcher gave the added advantage for the researcher to have access to the whole teaching and learning process where "behaviour is best understood without constraints and control" to ultimately add support to the study (McMillan, 2000, p. 253).

3.6   Critical Reading Inventory

After careful study and consideration of some of the reading inventories currently available such as Ekwall Reading Inventory (Ekwall, 1986), Classroom Reading Inventory (Silvaroli & Wheelock, 2001), the Critical Reading Inventory (Applegate *et al.*, 2008) was chosen

because of its orientation towards critical readers and its "greater sensitivity to the notion of reading as thinking" (Applegate *et al.*, 2008, p.5). The reading inventory was used to benchmark the critical reading ability of the participants pre intervention of explicit strategy-instruction as well as to measure any improvement in critical reading ability post intervention of explicit strategy-instruction.

The basis for using the Critical Reading Inventory (CRI) was its fundamental objective in distinguishing literal from critical readers. It was not the researcher's intention to reinvent the wheel as the inventory has been designed specifically to present a more realistic and in-depth evaluation of an individual's ability to think about what they have read. Not only was the diagnostic data obtained able to inform the researcher regarding an individual's critical reading skills but was used as a prescriptive tool to allow the researcher to prepare meaningful, independent and instructional reading materials. Subsequently, these materials were then used in reading lessons to carry out explicit strategy-instruction to cultivate HOT skills in the English language classroom. Figure 3.2 is a diagrammatic representation to illustrate that questions constructed in all the reading evaluation tasks adhered to measures and scoring as clearly identified in the CRI (Applegate *et al.*, 2008) and Nuttall's Reading Taxonomy (1996).
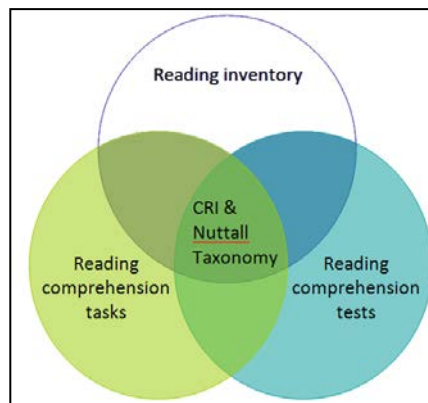
Figure 3.2 Use of CRI and Nuttall's Reading Taxonomy
in the Preparation of Tests and Tasks

Table 3.1 Question Types in Critical Reading Inventory

Types of question	Text-based	Inference	Critical response
Question number	1, 2, 6	3, 5, 7	4, 8
Total	3	3	2

3.7   Measures Used in Critical Reading Inventory

 The CRI uses three critical item types in the evaluation of reading comprehension
consisting of text-based items, inference items and critical response items (Table 3.1). Text-
based items require readers to recall information from the text and make connections to link
ideas within the text. These would be factual information, basic concepts and knowledge-
based items. Inference and critical response items were used to measure higher-level
thinking. Inference items require readers to draw conclusions by merging information
found in the text to what they already know as in predicting events, looking at alternatives
and coming up with suggestions or plans. Critical response items would require readers to
look at the big picture before drawing implications to justify choices and defend judgement.
It provided the necessary training grounds for readers to utilise their prior knowledge to
infer, form opinions and make critical responses (Applegate *et al.*, 2008, p.6). Simply put,

the CRI can effectively assess a child's ability to think critically about what had been read before making responses.

3.8   Scoring in Critical Reading Inventory

3.8.1 Text-based Items

The CRI recommends scoring comprehension questions beginning from simple to complex, depending on the nature of participant's responses. Most scoring of text-based items was quite straightforward; either the participant could or could not find the details. In other words, answers could be literally lifted from the text. These would be items belonging to the higher levels of Nuttall's Reading Taxonomy (1996).

3.8.2 Inference Items

Scoring response to inference items involved two elements. First, readers must draw upon information included or implied in the story and then only make logical or valid conclusions. Any logical conclusion based solely upon experience was deemed not to have met the criteria for a scoreable response. Logical inferences that included both correct information and inaccuracies were generally scored as half credit. Instances where participants rephrased the question into a statement as answers were also not accepted. Basically, during the scoring, the value of any logical interpretation of both the question and the response put forward by participants were weighed and taken into consideration.

3.8.3 Critical Response Items

Scoring critical response questions was more challenging than scoring literal and inferential types. Critical response items required the participants to take a stand and state an opinion. The support given was crucial to score a credit as participants must draw valid conclusions that were supported from inferences extracted from the story. Hedging and vague support

for opinion were unacceptable. Thus, a good answer to a critical response item was one that could provide solid and logical support for ideas given. In scoring critical response items, justification was crucial as just by stating an opinion was insufficient and of no consequence to answer a critical response item.

3.9   Follow-up Questions

In summary, follow-up questions in search of more complete or precise responses were asked when necessary. Participants were not penalized when they arrived at a correct response as a result of a follow-up. Partial credit was also assigned to responses that were found to be logical but incomplete. The objective was to gain insights into the thinking process as to how a participant thinks than in the 'fairness' of the scoring. Applegate *et al.* (2008, p.37) asserted that this individual variation in scoring was the most often cited weakness of any informal reading inventory, but it was also its most valuable strength bearing in mind that the ultimate objective in using the CRI was to gather diagnostic information regarding the critical reading ability of participants.

3.10   Pre Intervention Stage - Reading Tests

All the reading tests adhered to the guidelines in the CRI. Two reading comprehension tests were meted out at the pre intervention stage (Figure 3.3). The first reading comprehension test was the CRI (Applegate *et al.*, 2008, p.101) which was used to benchmark the critical reading ability of the participants. The second reading test was the reading comprehension test to determine participants' reading level prior to explicit strategy-instruction. The administering of the graded word list was to identify the corresponding reading text to be used to administer the CRI. Results of the reading tests enabled the researcher to prepare appropriate reading tasks to be used for the study and also as comparative data post intervention of explicit strategy- instruction.
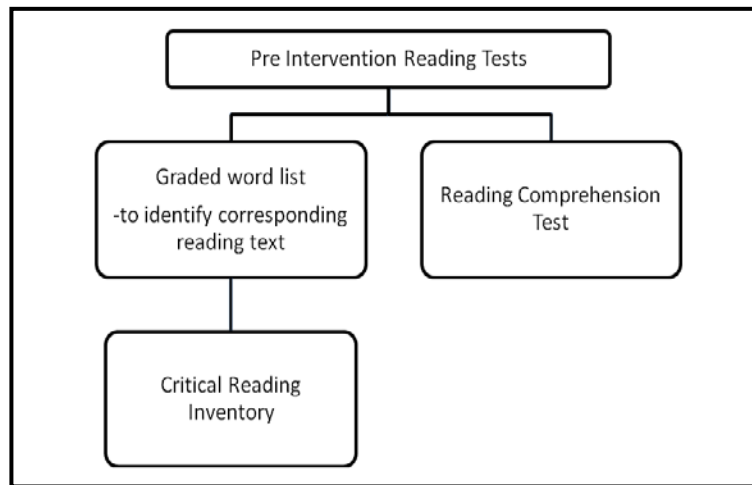
Figure 3.3 Reading Tests at Pre Intervention Stage

3.10.1 Administering the Critical Reading Inventory

The first step in administering the pre intervention reading inventory was the graded word list exercise followed by the CRI passage. The steps in administering the CRI are shown in Figure 3.4.

3.10.2 Graded Word List

Instructions and objective of the test were explained both in the participants' mother tongue and in English to ensure participants understood the requirements of the CRI as this was the first time they were undergoing the evaluation exercise. The realistic storyline of the test was chosen because of its "familiar theme to make sure readers would feel comfortable" (Raines & Isbell, 1994, p.27). The pre intervention CRI started with the assessment of participants' word recognition level in isolation (refer Appendix A). This was carried out with the objective of gauging the ability of the participants to read the words in the graded word list which was then used to identify the specific graded paragraph to anchor participants' instructional critical reading level. When the participants were able to read all the 20 words in accordance with the guidelines of the inventory, this then confirmed the

corresponding text for the reading test which was at pre primer level (Applegate *et al.*, 2008, p.101).
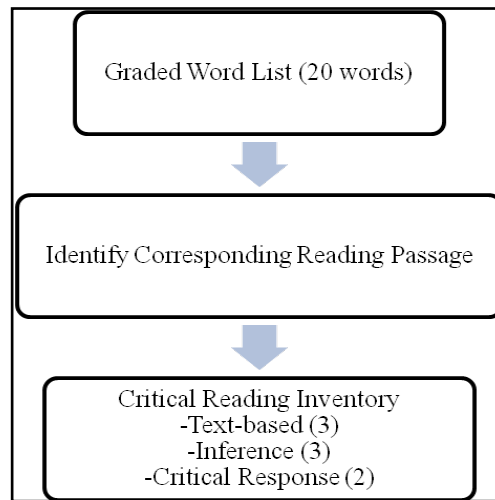

Figure 3.4 Pre Intervention Stage - Administering the CRI
One-to-one Session

3.10.3 Critical Reading Inventory Test

The pre intervention CRI was to establish participants' critical reading ability. It had the text, "The Baker" and was administered to participants as a written exercise under test conditions (refer Appendix B). A time frame of exactly 30 minutes was allocated and participants were seated individually. Instructions and objectives of the test were explained both in English and Bahasa Malaysia to ensure participants understood what was required of them. A total of seven questions measuring recall, inference and critical thinking were asked (refer Table 3.2). Questions one, two and six were text-based items where participants were required to answer verbatim from the passage or recall specific elements from the text. In contrast, questions three, five and seven were inferential items where participants had to link their own experiences with elements from the text and draw logical conclusions to come up with their answers. The remaining two critical response items required participants to justify responses clearly and coherently and to defend choices made.

Table 3.2 Types of Pre Intervention CRI Questions

Text	Text-based	Inference	Critical response
The Baker	1, 2, 6	3, 5, 7	4, 8

The mark scheme (refer Appendix C) was based on the scoring guide as provided in the CRI. The points scored by participants were based on the scoring rubric provided. Answers that were correct but not substantiated were not awarded any points. Results of individual participants were then recorded and tabulated to be used as pre intervention reading test data.

3.11 Nuttall's Reading Taxonomy (1996)

The first foray into investigating increasing thinking levels in participants' responses consisted of constructing questions with a heavier weightage towards HOT skills. The reading performance test and the reading comprehension tasks consisted of comprehension questions constructed by the researcher based on the reading framework as mapped out in the CRI (Applegate *et al.*, 2008, p.16-17) and Nuttall's Reading Taxonomy (Nuttall, 1996, pp. 186 - 189). The Nuttall questioning framework (refer Appendix D) has six levels of questioning skills namely literal comprehension, reorganization or reinterpretation, inference, evaluation, personal response and how writers say what they mean. The explicit strategy-instruction carried out during comprehension lessons was mainly based on the higher levels of Nuttall's Reading Taxonomy (1996, pp. 186-189) specifically predicting, inferencing, evaluation and appreciation.

The HOT questions required the participants to predict, infer, evaluate and respond to the text. In allocation and weightage of marks, the researcher referred to the scoring rubrics from the CRI to facilitate grading. Points were allocated for each correct answer. For example, if a question required the participant to deduce answers based on evidence from the text, this would be deemed answering the question based on textual evidence; but if it was reinforced by background knowledge and experience, the particular question would be considered to be at the inference level. If a participant gave an original example this would be deemed answering at the critical response level, and when a particular solution offered was supported and justified, this then would be placed at the personal response level of the framework. As the ratio of low level as opposed to high level questions was 3:5, therefore, the assumption made by the researcher was that a high score would indicate the ability to comprehend HOT questions.

3.12 The Reading Comprehension Test

The reading comprehension test was used to determine the reading level and type of comprehension tasks to be used for the study. Participants were given the cover to predict the story (refer Appendix E). It only had the picture of a boy and the words, "Yusuf" on it. Participants were encouraged to predict the storyline and to give reasons to support their answers. Five options with a gradation of marks starting from 1.5 for the option, "I look at the picture" to 0 for the last option which was, "I didn't know until I read the pages" were given and participants were required to choose one. If a participant chose E which was "I didn't know until I read the pages", no credit was given. On the other hand, if a participant chose, "I look at the cover" or "I read the title", 1.5 points were awarded. The researcher administered the pre intervention reading comprehension test to gauge participants' reading skills prior to intervention of explicit strategy-instruction. Responses were graded and participants' marks recorded.

3.13 The Process of Explicit Strategy-Instruction

Explicit strategy-instruction in reading comprehension was carried out through 7 stories and 10 written comprehension tasks (refer Appendix F) over a period of eight weeks during English lessons as well as when the researcher had to stand in for subject teachers who were unavailable to carry out teaching. Stories were sourced from existing English year-four textbook and storybooks recommended by the MOE, Malaysia. Total lesson time came to about three hours per week of explicit strategy-instruction of comprehension texts. Longer stories were divided into parts and each part was followed by a set of questions focusing on HOT skills. Table 3.3 is a summary of the texts and the rational for choosing the stories.

Table 3.3 Rationale and Summary of Texts Used in Explicit Strategy-Instruction

Text	Rationale	Summary
a. Yusuf	A story that reflect real life experiences.	A story about a boy who is lazy and loves to procrastinate.
b. Elves and the Shoemaker	A simple and classic tale to engage participants to enter the realm of fantasy.	A Grimms fairytale about how two elves come to the rescue of a cobbler and his wife by making beautiful shoes for the cobbler to sell.
c. Grasshopper in Trouble	A story with an interesting theme.	Schoolmates' quest to catch grasshoppers.
d. Devi and the stranger	The simplicity of the text reflects real world experiences.	Devi, a little girl, who is left home alone, cleverly foils an attempt by a stranger to rob her family.
e. The Perfect Present	The objective of this text was to educate the emotions and ultimately to educate the mind.	Story of a little boy, Sam, who is looking for the perfect present for his beloved father.
f. The Frog	A clear-cut story that provided a sense of ownership where participants made their own storybook.	A fairytale about a woman and her three sons who are farmers and how she assigns three tasks to the three sons' future wives to test their capabilities.

3.13.1 Explicit Strategy-Instruction in Reading Comprehension

A concise summary of a typical explicit strategy-instruction session is illustrated in Figure 3.5. Each reading session is comprised of three main parts which are pre, while and after reading.
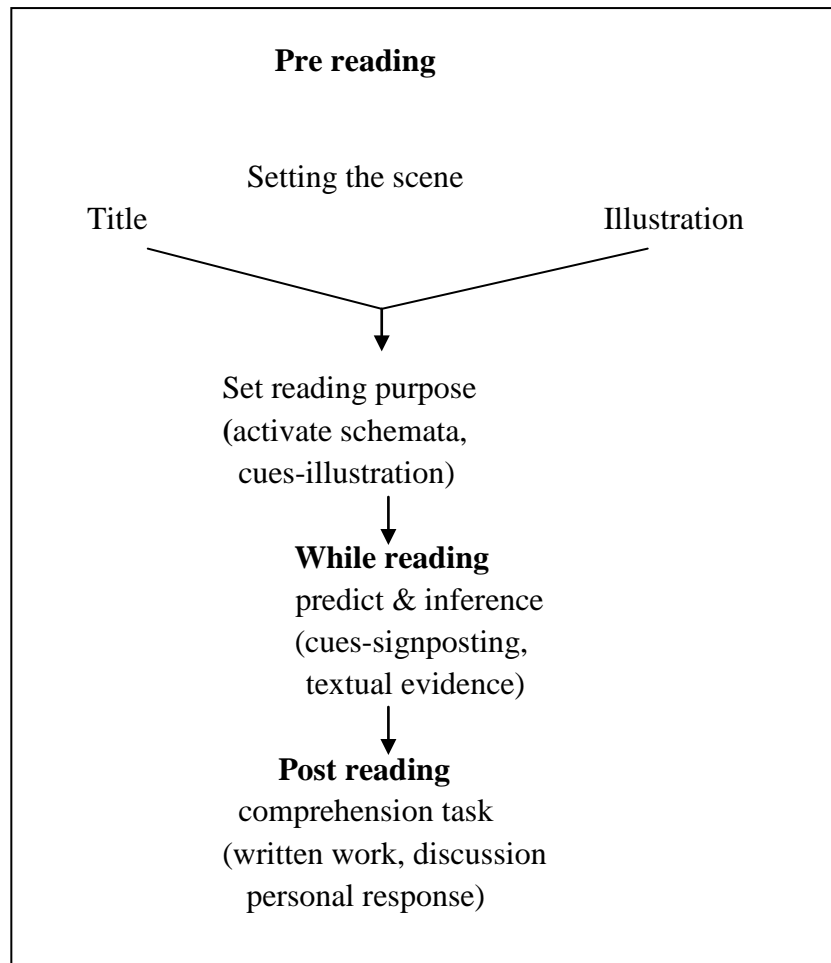
Pre reading

Setting the scene

Title   Illustration

Set reading purpose
(activate schemata,
cues-illustration)

While reading
predict & inference
(cues-signposting,
textual evidence)

Post reading
comprehension task
(written work, discussion
personal response)

Figure 3.5   Summary of Explicit Strategy-Instruction
During Reading Comprehension Lessons

3.13.2 Pre Reading

The researcher introduced the story by setting the scene (Figure 3.6). First, the participants read the title and looked at the cover. Then, participants had to predict the theme of the story. Participants' predictions were written on the board. The researcher engaged participants with the text by getting them to use their background knowledge to anticipate

their reading. Participants were guided to make informed predictions about the story based on the title, text features and illustration on the book cover. Then, the first page of the story was distributed so participants could confirm or change their predictions. The process of making predictions set the purpose to activate participants' thinking process to make inferences and also increased participants' interaction with the text (Duke & Pearson, 2002).
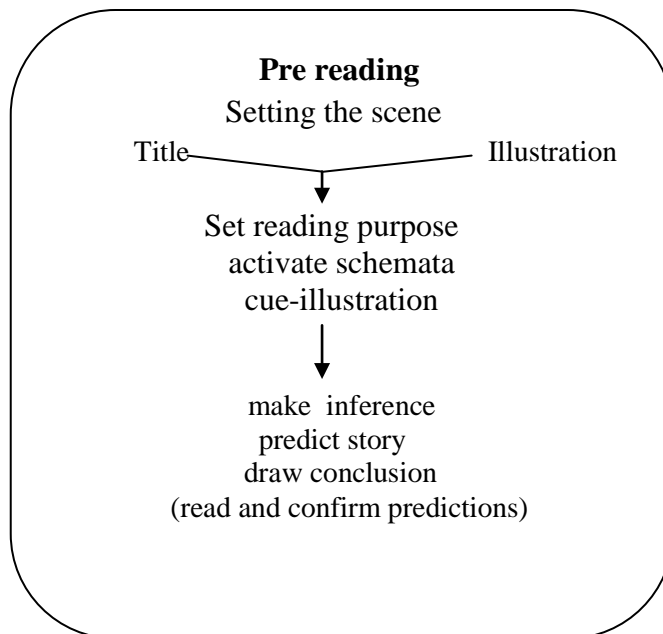
Pre reading
Setting the scene
Title   Illustration

Set reading purpose
activate schemata
cue-illustration

make inference
predict story
draw conclusion
(read and confirm predictions)

Figure 3.6 Steps in Explicit Strategy-Instruction During Pre Reading

3.13.3 While Reading

Participants were given time to do silent reading before the shared reading session. The researcher directed the participants' attention to the illustration on the cover and the researcher elicited predictions from the participants. The researcher proceeded with this interaction only pausing at predictable points of the story to direct participants' attention to words, cues and illustrations. This was carried out for participants to do self-monitoring; confirming, cross-checking one cue against another and searching for additional information to infer and make informed predictions.

Throughout the development of the story, the researcher explicitly stated the strategies of predicting and inferencing and validated participants' responses by encouraging and praising them when predictions were correct. If a participant gave an inaccurate guess, the researcher would write the correct response suggested by another participant and discuss how the answer came about. Participants were made aware of their thinking process when the researcher modelled through explicit strategy-instruction how to identify textual evidence to come up with logical deductions in answering the inferential questions.

3.13.4 Post Reading

Amongst some of the techniques used during explicit strategy-instruction sessions were sign-post questions where the researcher directed participants' attention to the central theme and main characters in the story. Then, participants engaged in silent reading before answering the comprehension questions. Participants were told that if they could not answer any questions, they had to write 'I don't know'. When grading the participants' answers, the researcher would compare the frequency of 'I don't know' statements in the initial comprehension tasks with subsequent comprehension exercises.

After each exercise, participants' written responses were graded and returned. Then, the researcher would run through all the questions especially HOT questions. The researcher drew participants' attention to how answers were identified in each of the predictive, inferential and critical-thinking questions. Through explicit strategy-instruction, the researcher demonstrated to the participants how to predict, make inferences based on textual evidence, used cues from pictures shown and finally getting the participants to personally respond to the story (Figure 3.5). The researcher pointed out how background knowledge or schemata could be activated in the process of meaning construction (Andre, 1986).

To answer the inference questions, participants were taught how to identify textual evidence by reading between the lines before drawing their conclusions. The use of "How do you know?" questions were purposeful to direct participants to delve deeper into the text to make inferences based on textual evidence and at the same time draw on whatever available resources and repertoire of skills that participants possess to arrive at answers. Step-by-step, the researcher modelled the use of reading strategies and value judgement to answer the comprehension questions. In subsequent lessons, participants were given the opportunity to work in pairs and in groups; with the researcher constantly giving guidance. The researcher explained questions that participants were unclear and encouraged them to find answers by applying strategies learned.

After every exercise, class discussions were conducted to give general feedback to clear doubts and iron out gray areas as well as to reinforce strategies taught. The most critical part was the class discussions where the researcher would maximise the opportunity to reinforce strategies taught. When researcher came across vague answers or responses that were totally off the mark, one-to-one sessions were also carried out between individual participant and the researcher. The researcher would ask the participants to explain and clarify their statements. Consequently, this enabled the researcher to have a better perspective of participants' cognitive process to ensure a much more substantive feedback on participants' performance.

3.14   Summary of Activities in Explicit Strategy-Instruction of the Stories

3.14.1 Text 1-Yusuf

After the reading comprehension test, the second part of the story, Yusuf from pages 5-12 was used to kick-start the explicit strategy-instruction lessons. The researcher activated participants' background knowledge and prior experiences by getting them to find

similarities between themselves and the character, Yusuf. For the inference questions participants were taught how to identify textual evidence by reading in between the lines to draw their conclusion. This was especially important for the "How do you know?" questions which required the participants to make inferences based on textual evidence and hidden meaning to justify their answers. For the third part of the story from pages 13-22, there were 25 questions. The participants were divided into groups to complete the exercise. The researcher directed participants' attention to particular sections of the text to conduct evaluative reading and personally respond to the text. Participants were encouraged to delve deeper into their cognitive structures to answer the 'how and why' questions.

3.14.2 Text 2 - Elves and the Shoemaker

A short text extracted from participants' textbook. The participants had to predict the contents of the storyline by reading the title and studying the illustrations. The researcher used questions to direct participants' attention to phrases from the text to make inferences. For example, the phrase 'worked very hard but still did not have money to buy food' required participants to infer that the shoemaker is hardworking but poor. Participants were asked to put themselves in the shoes of the shoemaker and his wife to express their thoughts and feelings in order to identify with the shoemaker when he said, "After I cut this leather, I will have no more leather, what will I do?" Participants used colour pencils to mark and write down additional information which were used as sign-post notes which would be used later to facilitate answering of comprehension questions. This was then followed by the discussion of the comprehension questions.

3.14.3 Text 3 -Grasshopper in Trouble

First, the researcher gave out the cover of the story to the participants. The illustration of a grasshopper trapped in a bottle got the participants fired up and excited to read the story. Then, participants had to study the illustrations and identify textual evidence to discuss the relationship of the characters in the story. The rising action leading to the climax of the story was how the little grasshopper was caught and finally rescued. For the personal response part, the researcher caught a grasshopper and put it in a bottle to give the participants a more surreal learning experience. Participants were told to put themselves in the shoes of the little grasshopper to express their feelings. To conclude the story, participants had to draw a grasshopper and give it a new colour. Then, they had to write a short explanation to justify their choice.

3.14.4 Text 4-Devi and the Stranger

A short text where participants were encouraged to do silent reading. At the end of the reading session, the comprehension exercise required the participants to choose pictures to represent characters in the story. Choice of pictures informed the researcher with regards to participants' meaning construction process.

3.14.5 Text 5-The Perfect Present

To introduce the story, the researcher took a big gift box to class. Then, the participants read the title and preview to give their opinion with regards to whether the colourful illustration on the cover matches the title. Participants studied the illustrations and identified key words to describe the protagonist's close relationship with his parents. The personal response had the participants expressing their opinion regarding characters in the story.

3.14.6 Text 6-The Frog

There were a total of 28 text boxes in this story. Initially, participants were given the text to read and comprehend. After that, the researcher guided the participants to identify and underline the keywords; also known as "content-critical words" (Kelley & Clausen-Grace, 2007, p.89) and these were then used to find the corresponding picture. Participants had to read, understand sentence structure and story sense in order to identify keywords. The participants labelled the pictures and then cut them out to make into a story book. The participants had to think of a title and decorate the cover to create a sense of ownership. Once the storybook was completed, the researcher held a reading aloud session with the participants. The responses and reactions of the participants were noted down to confirm their steady grasp of reading strategies. The exercise was preceded by shared reading and individual silent reading to make sure participants could 'see' and understand the whole text. Sign-posting and markers were used to aid comprehension.

3.14.7 Text 7- Raven Boy

A follow-up of the previous task. The researcher had the participants working in pairs to find the keywords to help them match pictures to text to sequence the story. The emphasis was to get participants to focus on how to fit all the pieces of information together based on their prior knowledge/experiences of the story and identification of keywords.

3.15 Post-intervention Stage-Reading Tests

Similar to the pre intervention stage, post reading tests also adhered to the same criteria. Post-intervention reading tests comprised of one CRI and one reading comprehension test. Both tests were meted post intervention of explicit strategy-instruction.

3.15.1 The Critical Reading Inventory

First was the administering of the graded word list to identify the specific text to gauge participants' post instructional critical reading level (refer Appendix G). The participants were able to read all the 20 words corresponding to the text for the CRI at primer level (Applegate *et al.*, 2008) which was one level higher than pre intervention stage (refer Appendix H).

3.15.2 Reading Comprehension Test

The second reading test was the reading comprehension test to determine participants' reading level post to explicit strategy-instruction. The post intervention reading comprehension test was carried out to measure any improvement in the reading performance of participants (refer Appendix I). The test was designed following the test format from the CRI and the questions were constructed based on Nuttall's Reading framework (1996). The same test conditions as the previous tests were adhered to.

3.16 Data Collection and Analysis Procedures

A variety of qualitative and quantitative techniques were undertaken to triangulate findings to ensure a more reliable set of data to achieve the purpose of this study. The methods employed were informal interviews, questionnaires, computation of pre and post intervention reading test scores and also analysis of participants' written work. Each instrument would be discussed in detail below.

3.17 Participant Observation

The researcher utilized the participant observation technique so as to "develop an insider's view" (Patton, 1980, p. 127) of the phenomenon being studied. Observation by the researcher was through notes that the researcher took during classroom activities. These

notes were crucial to record actual behaviour and to add on to the growing evidence in support of building HOT skills through explicit strategy-instruction in the language classroom. The researcher noted down participants' responses and reactions during explicit strategy-instruction of comprehension lessons and classroom activities. The researcher paid particular attention to group discussions and participants' responses and reactions when they encountered problems and difficulties. It was the firm belief of the researcher that these discussions would not only lead to "a complete understanding of the setting but also accurately reflect the complexity and multiple realities of human behavior" (McMillan, 2000, p. 254).

3.18   Interviews

Interviews were conducted to allow participants and parents of participants **to express their thoughts using their own words and organization. Input from these interviews were particularly valuable for gaining insights** to lend greater depth and richness of information in subsequent discussion of findings (McMillan, 2000).

3.18.1 Interview with Participants' Parents

Before the commencement of the study, the researcher had an informal conversational interview (refer Appendix J) with fifteen of the participants' parents who attended the 'Report Card Day' in July 2009. The researcher elicited the information through the course of her discussion regarding participants' academic performance. The objective of the interview was to have a better understanding of respondents' background, interests and reading preferences and perceptions regarding HOT skills.

3.18.2 Interview with Participants

The same group of fifteen participants whose parents were interviewed earlier were selected for the interview (refer Appendix K). The objective of the interview was to identify themes and patterns of reading habits. Prior to the interview, the researcher had explained to the participants the objective of the interview. The interview was conducted in Bahasa Malaysia during school hours.

3.19 Parents' Questionnaire

The versatility of the questionnaire was used to look into respondents' attitudes towards the concept of explicit strategy-instruction and reading. The questionnaires in Bahasa Malaysia were distributed to all the thirty participants to take home for their parents (respondents) to complete (refer Appendix L). The objective in using the questionnaire was to find out respondents' perception towards the importance of reading to promote HOT skills and the value of engaging students in HOT during reading comprehension in the English language classroom.

Part 1 of the questionnaire was to find out respondents' preference in reading in Bahasa Malaysia or English. Part 2 and Part 3 had seven and nine statements respectively; structured after the Likert format. A 5-point Likert-type scale ranging from 'agree' to 'totally disagree' was chosen as the response format for the questionnaires to affirm interview feedback as well as confirm perceptions regarding reading and HOT skills.

3.20 Teacher's Questionnaire

The second questionnaire in English (refer Appendix M) was given to six English language teachers in the researcher's school to gather insights pertaining to respondents' perception regarding classroom practice to engage students in HOT during reading comprehension

lessons. A 4-point Likert-type scale ranging from "isn't part of my daily teaching practice" to "integral to my daily teaching practice" response format was used to assess teacher's self concept and perception on explicit teaching of reading strategies to develop HOT skills during reading comprehension lessons.

3.21 Students' Work During Explicit Strategy-Instruction of Reading Comprehension Lessons

A compilation of students' work comprising of completed written responses and completed tasks from each reading comprehension lesson were undertaken. The students' work, together with the data collected from other avenues were the empirical evidence that the researcher relied on as direct data in validating and substantiating participants' performance to achieve the purpose of this study.

3.22 Data Analysis

The process of validating data was ongoing throughout the study. The researcher conducted a preliminary analysis of the data collected to look for significant themes and recurring patterns. Once, all the data had been collected, the process of synthesizing the data then began. Firstly, the researcher organized the scores by keying in participants' pre-intervention and post-intervention reading test scores. Then, the researcher read and analyse data derived from interviews, completed questionnaires, classroom observations and participants' written responses to look for themes, ideas and events. Subsequently, the data was then consolidated to be used as a basis to draw conclusions to answer the two research questions.

Central Tendency measures of mean and median were used to describe the set of pre-intervention and post-intervention reading tests scores. Each set of computed pre and post-

intervention reading test scores were then plotted on bar graphs to show how spread out the distribution of scores was from the mean. Two t-tests were calculated using the Statistical Package for the Social Sciences software (SPSS) to look into whether the test scores were statistically significant to rule out the probability of "chance factors or sampling error" (Muijs, 2004, p. 122). The first t–test used the pre and post test scores of the Critical Reading Inventory. The second t-test utilised the pre and post reading comprehension tests' scores to confirm that the increase in test scores was not as a result of chance. Finally, findings were further analysed and refined to convey a holistic understanding of the relationship between participants' critical reading ability and reading performance pre and post explicit strategy-instruction during reading comprehension lessons.

3.23 Summary

 Reading and digesting information lies in the heart of real reading and fuels higher-level thinking. The reading process involves the act of constructing meaning while interacting with the text. To extol the efficacy of the importance of explicit strategy-instruction in reading, throughout this chapter, the focus was on the methodology used in examining the effects of explicit strategy-instruction on the reading performance of a class of primary year-four students. This chapter presented the research approach, the research setting, the participants, the pre and post-intervention reading tests, the stories used during reading comprehension lessons, the data collection and data analysis processes employed in this study. The following chapter will focus on the findings and discussion of this study.

CHAPTER FOUR

FINDINGS

4.1 Introduction

McKenzie (2004) believed that there is plenty of thinking that never achieves lift-off and never contributes to understanding. Conversely, nurturing a dynamic relationship between questioning and thinking frees the young to engage in HOT skills. In deep reading, the mind reads through the data looking for patterns and connections, establishing relationships with prior knowledge and building bridges to new perceptions. It is a "dynamic, cognitive process" (Edwin & Maya, 2002, p. 26) that involves a complexity of HOT skills in order to organize and control knowledge in the process of maximizing human intelligence. To delve deeper into this phenomenon, this study was carried out to seek answers to two research questions namely to what extent will the reading performance of a class of primary year 4 ESL students be improved following explicit reading strategy-instruction training and to find out whether explicit reading strategy-instruction can develop the HOT skills of a class of primary year 4 ESL students. The successful completion of the study has yielded findings regarding the effect of explicit strategy-instruction during reading comprehension in the English language classroom. This chapter presents findings of data collected from interviews, questionnaires, observations and results of reading comprehension tests meted to participants before and after explicit strategy-instruction.

4.2   Findings from Interviews

This section presents findings from the interviews with the students and their parents. The purpose of the interviews was to have a better understanding of the participants background and reading habits. Both interviews were carried out during school hours in the school premise.

4.2.1   Interview with Participants' Parents

Fifteen parents underwent an informal interview with the researcher. Three questions were asked. The purpose of the interview was to gain insights regarding the participant's family background, leisure activities and the parents' perceptions of HOT skills.

4.2.1.1   Language of Communication
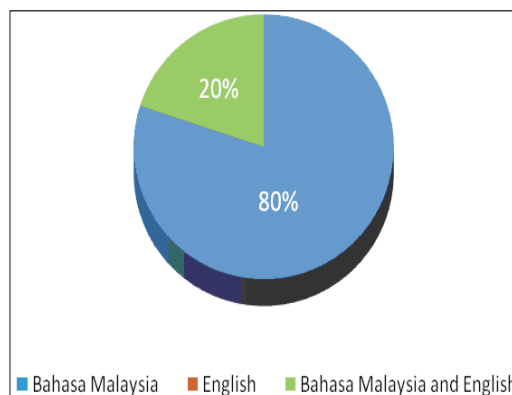
Diagram 4.1 Participants' Language of Communication At Home

The first question was to find out what was the language most commonly used by participants in their home environment. Referring to diagram 4.1, more than three quarters of the participants communicate solely in their mother tongue which incidentally was not only the national language but also taught as a subject in school. A few of the parents revealed that sometimes they do use Bahasa Malaysia and English at home but the language of choice was still Bahasa Malaysia. At best, possibly a sprinkling of English words would be uttered as in names of cartoon shows such as SpongeBob and SquarePants - a cartoon

series or names of fast-food chains as in Kentucky Fried Chicken (KFC) and Pizza Hut. Communicating in English seemed to be an uncommon practice in all the households interviewed.
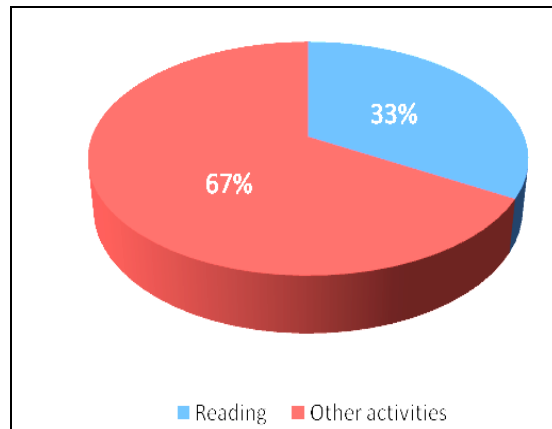
4.2.1.2 Participants' Leisure Activities

Diagram 4.2 Participants' Activities During Their Free Time

The second question was to find out how participants spend their leisure time. Clearly, reading did not occupy centre stage as illustrated in Diagram 4.2. Information drawn during the interview showed that participants spent a lot of time in front of the television, playing computer games or outdoors in the playground. Some examples of parents' comments about their children were, "My child likes watching television till he doesn't even want to eat (s*uka tengok tv dan tak makan pun boleh)*, loves to play *(sangat suka keluar main)*. On the whole, time allocated for reading was very much lacking.
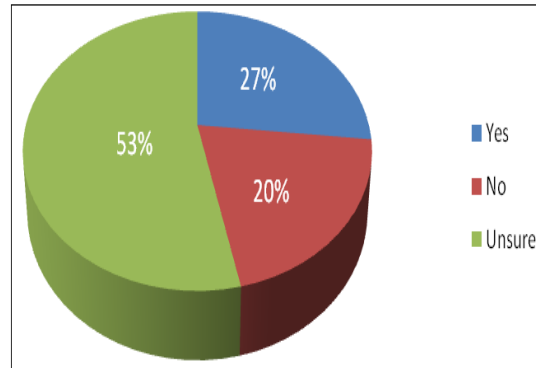
4.2.1.3 Participants' Inquisitiveness

Diagram 4.3 Parents' Responses as to whether their children
ask questions when in doubt

The third question was to identify participants' reaction when they encounter problems or when they are in doubt. The main aim of the question was to see how vocal and inquisitive the participants were. The researcher was curious to find out whether participants were likely to ask questions to seek answers to matters which they could not comprehend. As seen in Diagram 4.3, the researcher discovered that more than half of the parents interviewed were unsure as to whether their children like to ask questions. Their responses were vague – *tak ada tanya banyakpun* (would not ask questions), *tak tau, tak berapa perasan pun,* (don't know, didn't really notice), and *kadang-kadang* (sometimes). A few of the parents revealed that their children hardly asked questions as by nature they were rather passive and quiet at home. In a nutshell, putting forward questions to clarify unknown matters was generally not practiced by the participants in this study.

4.2.2 Interview with Participants

In the interview with the participants, a total of five questions were asked. The objective of the interview was to gain further insights regarding the reading habits of the participants and preferences as well as leisure activities. The researcher had also wanted to compare

answers obtained from the first interview with the participants' parents for a better understanding of participants' home environment.

4.2.2.1 Reading as a Pastime

The first question was to find out whether the participants were keen readers. All fifteen participants said that they liked to read. This was indeed very encouraging and an important piece of information for the researcher as ultimately, it is hoped that the participants can be trained to improve their reading skills. Even though all the participants said that they liked to read this seemed to contradict with information obtained earlier from the participants' parents where they reported that most of their children's leisure activities did not include reading.

4.2.2.2 Reading Preference

The second question was to look into the participants' reading preference. Only slightly above 10% of the participants read in English as illustrated in Diagram 4.4. Some of the participants' responses were *tak pandai baca B.I. (*not clever to read in English), *buku kat library yang ada banyak gambar 'tu senang, boleh baca* (books from the library with lots of pictures easy, so can read), *tak suka BI* (don't like English). Similar to earlier results regarding language of communication, the participants preferred to read books in the national language. This finding further supports the earlier findings that the participants have little encounter with the use of the English language in their daily activities.
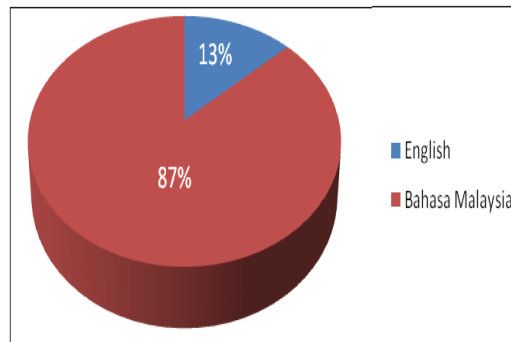
Diagram 4.4 Participants' Preference in Reading

4.2.2.3 Ability to Read Independently

The third question was to check whether the participants could read on their own without any instruction or guidance. As illustrated in Diagram 4.5, nearly three quarters answered affirmatively that they could read independently. Although this would mean that the ability to read independently would actually refer to reading in Bahasa Malaysia instead of English irrespective of the participants' reading preference, this is still deemed encouraging as the ability to read meant that the participants were familiar with or able to apply reading strategies in the process of digesting text.
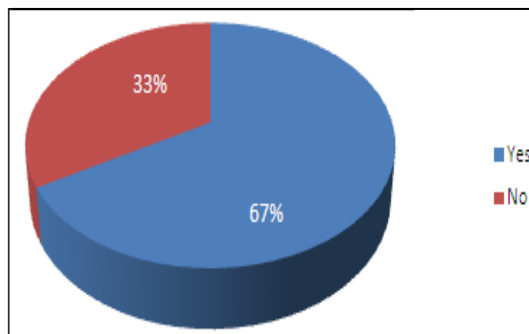

Diagram 4.5 Participants' Ability to Read Independently

4.2.2.4 Guidance in Reading

The fourth question was to find out how much the participants were encouraged and nurtured by their parents to read at home. As illustrated in Diagram 4.6, only a few of the participants said that their parents sometimes read with them. The participants voiced out that they were only able to read independently in Bahasa Malaysia - *baca buku Bahasa Malaysia boleh, BI tak boleh, susah* (can read in Bahasa Malaysia, English no, difficult) but reading in English was a different matter. They could only read English basal readers independently and seldom asked their parents for guidance or help.
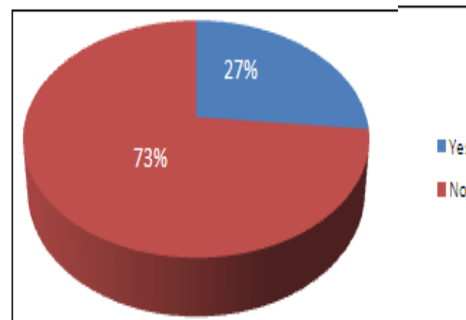

Diagram 4.6 Parental Guidance in Reading

4.2.2.5 Asking Questions as a Reading Strategy

The fifth question was to find out whether the participants liked to ask questions when they encounter things that they could not comprehend while reading. The participants elaborated that when they could not comprehend a story they read, they would just flip through to look at pictures – *tengok gambar, banyak gambar senang, tak tanya mak* (look at pictures, a lot of pictures easy, doesn't ask mum) and they seldom asked their parents when they encountered unfamiliar words that they could neither read nor understand. This finding is illustrated in Diagram 4.7.
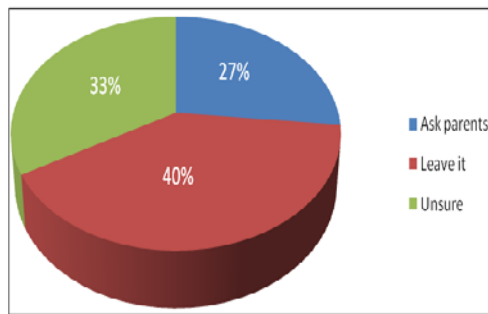
Diagram 4.7 Questioning as a Reading Strategy

4.2.3 Feedback from Interviews

The results from interviews with the participants' parents as well as the participants themselves showed that students use little English beyond the boundaries of the classroom. Thus, it can be said that the English language was seldom used at home. Besides that, reading, whether in Bahasa Malaysia or English did not seem to be a common past time for all the participants. However, reading was still a very much desired activity and this seemed to confirm Pandian's findings that though Malaysians are proficient in their mother tongue but unfortunately still chose not to read (Pandian, 2001).

The findings also showed that the technique of questioning as a learning strategy was not utilised by the participants. McEwan (2004) believes that seeking answers is one positive step towards engaging learners to think. Therefore, it is of utmost importance that young children be trained to have an inquisitive mind to question things that baffle them in order to develop their critical thinking skills. Habsah & Aminuddin (2009) stated that awareness of questioning as a learning strategy can be triggered through "active teaching and learning of strategies and learning activities that incorporate both inside and outside classroom context" (p.234). The environment irrespective of home or school should provide the necessary platform to enable learners to engage in the thought process to promote learning as well as facilitate the ability to think and reason.

4.3   Findings from Questionnaire to Participants' Parents

The first questionnaire was used to examine parents' attitudes towards the concept of explicit strategy-instruction and reading. The questionnaire in Bahasa Malaysia was distributed to all the thirty participants to take home for their parents to complete. The questionnaire had three sections. The first and second sections were to find out the reading preferences and habits of the participants' parents. The third section was to examine their perception towards the importance of explicit strategy-instruction in reading to cultivate HOT skills in the English language classroom. The findings of each section will be discussed below.

4.3.1   Reading Preference

The first part of the questionnaire was to find out the reading preference of the participants' parents. As seen in Diagram 4.8, the majority of the parents preferred to read in Bahasa Malaysia and only 20% reported a preference for reading in the English language with the rest of the 13% reading both in Bahasa Malaysia and English. The figures showed that parents had a stronger preference to read in Bahasa Malaysia as compared to reading in English.
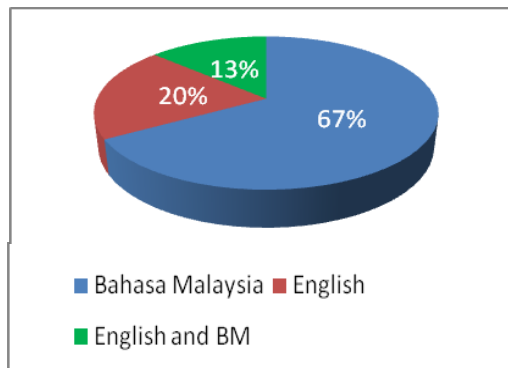

Diagram 4.8 Reading Preference of Participants' Parents

4.3.2 Reading Habits

The second part of the questionnaire was to obtain information on the parents' reading habits. The parents were given a Likert scale of 1-5 from strongly agree (1) to strongly disagree (5) and asked to respond to each of the statements. The majority of the participants said they liked to read. The second statement regarding reading together with their children had 63% of the parents strongly agreeing and agreeing that they carried out the activity. The third statement had only 50% of the parents who felt that their children enjoyed reading sessions with them. In the fourth statement, about 87% of the parents confirmed that their children could read independently. The fifth statement had the majority of the parents (93%) agreeing that they constantly stressed the importance of reading at home. The last two statements regarding 'encouraging participants to ask questions while reading and to express views and opinions regarding what participants had read' returned 83% positive answers (refer Table 4.1).

Table 4.1 Reading Habits of Parents

Statements Scale	1	2	3	4	5	Total
a) I enjoy reading.	14	14	2			30
b) I read with my child at least once a week.	5	14	6	4	1	30
c) My child likes to read with me.	5	10	10	4	1	30
d) My child can read independently.	15	11	1	3		30
e) I always remind my child that reading is important.	20	8	1	1		30
f) I encourage my child to ask questions while reading.	10	15	5			30
g) I encourage my child to express himself openly regarding contents of book.	8	17	5			30

4.3.3 Higher-Order Thinking and Reading Skills

The third part of the questionnaire had a total of nine statements. The objective was to look into the perception of parents towards explicit strategy-instruction to build HOT skills. Similar to the questionnaire given to the participants' parents, the questionnaire to the teachers also had a Likert scale of 1-5 from strongly agree (1) to strongly disagree (5) for the teachers to respond to each of the statement.

Table 4.2 Parents' Perceptions Regarding Higher-order Thinking in Reading

Statement	1	2	3	4	5	Total
a) Reading critically is important in our daily life.	15	12	3			30
b) The ability to predict is important in reading.	7	15	7	1		30
c) The ability to infer is important in reading.	7	17	6			30
d) The ability to respond to text is important in reading.	8	20	2			30
e) The ability to give personal opinion is important in reading.	14	16				30
f) The ability to justify and support is important in reading.	13	16			1	30
g) Higher-order thinking skills in reading help my child to become a better reader.	20	9	1			30
h) Higher-order thinking skills in reading help to improve my child's performance in school.	18	10	2			30
i) Higher-order thinking skills in reading should be taught in language classrooms.	17	8	4	1		30

As illustrated in Table 4.2, the majority of the parents were aware of the importance of reading strategies as seen in their responses to all the statements regarding the importance of HOT skills and also the teaching of HOT skills. Only a minority of the parents disagreed to the statement that the ability to predict was important in reading and that HOT skills in reading should be taught in language classrooms. Overall, this study found that there was a general consensus that explicit strategy-instruction should be carried out in school to

facilitate the development of HOT skills. Most important of all, majority of the parents believed that explicit strategy-instruction not only helped improved their children's reading proficiency but also overall performance in school.

4.4 Findings on Teacher's Perception of HOT Skills

The second questionnaire was given to six English language teachers in the researcher's school. The objective of the exercise was to gather insights pertaining to the teachers' perception on explicit strategy-instruction to engage students in HOT skills during reading comprehension lessons. All the six teachers who participated in the study were college-trained English language teachers. They had to answer a total of seven statements pertaining to classroom instruction during English language lessons.

The 7 statements were:

- Encouraging students to engage in dialogue, both with me and with one another in an open manner.

- Encouraging student engagement by asking thoughtful, open-ended questions- 'why', 'how'.

- Encouraging students to give their opinion regarding topic of discussion.

- Modeling higher-order thinking skills such as getting students to predict outcome of story using prior knowledge.

- Encourage students to evaluate comprehension passage/stories read.

- Constantly ensure sufficient wait time is given for students to think how to answer.

- Using such terminology as classify, analyze, predict, and create when framing tasks.

When the questionnaires were returned, all six teaches had selected the response "Isn't part of my daily teaching practice" to all the seven statements, the researcher then sought further clarifications with the six teachers J, K, L, M, N and S in order to gain further insights to their responses to each of the statements. A detailed discussion of the teachers' responses with the researcher is presented in the following sections.

4.4.1 Encouraging Teacher-Student Dialogue

All the six teachers agreed that it was not their daily practice to engage their students in active verbal interaction during classroom discussions. Some of their responses are illustrated in the excerpts shown below:

Excerpt 1

> Teacher J: Sometimes, I try but most times, the students are not very responsive and also will answer in Bahasa Malaysia. Tell them to answer in English, even more difficult.
>
> Teacher L: No time and students will only give very brief answers such as 'yes' or 'no'. If ask them 'why', they cannot continue. If you ask them, "Why do you like the story?" They'll just say 'suka' (like) and that's it.

The reasons put forward by the two teachers were once again students' reluctance to use English. The brief 'yes' and 'no' answers could be as a result of low proficiency in the English language and also lack of opportunities in voicing their ideas and opinions. This lack of practice should be addressed immediately in order that students can contribute to a classroom climate of inquiry and thoughtful examination of the reading comprehension process.

4.4.2 Encouraging the Use of Open-Ended Questions-'why', 'how'

Excerpt 2

> Teacher M: Depends. I just follow the textbook. If book got those questions, then we discuss. If don't have then, that's it. No time to do more.

Referring to the teacher's comments above, the implication drawn is that if the 'why' and 'how' questions were found in the comprehension text in the textbook, then, the teacher would discuss the answers failing which, then the students would not have any practice to engage in higher level thinking. Teachers seldom provide opportunities for students' to engage in higher-order questioning.

4.4.3 Encouraging Students to Give Their Opinion

Excerpt 3

> Teacher K: Yes, I do encourage them to give their opinion but not daily.
>
> Teacher M: Hard to pinpoint exactly when I do it. I know it's good for them, but the same problem keeps repeating. Students like to speak in their mother tongue (Bahasa Malaysia). If ask them to speak English, then no

The two teachers were aware of the importance for students to be trained to speak out and give their opinion to engage them in the reading process. Even though this engagement is crucial before comprehension can take place, but unfortunately this did not seem to be a general practice amongst the teachers.

4.4.4 Using Questions Which Encourage HOT Skills

Excerpt 4

> Teacher L: I have asked my students to predict story before but not sure how to model it to help them to learn this strategy.
> Teacher K: I don't know how to model also. Ask them to guess story, that's all.

The teachers were unsure as to how to guide students to make informed predictions. The researcher did explain to the teachers that they can use probing questions but then again it seemed that teachers themselves were not cognizant to what prediction entails and how to go about teaching these skills.

4.4.5 Encourage Students to Evaluate What They Have Read

Excerpt 5

> Teacher N: Sometimes I do it, but as usual my students won't say much. You ask them whether they like the story, they will either say, "I like" or "I like Yusuf without further elaboration.

As can be seen from the exchange above, teacher N did try to engage students in HOT skills. The teacher did not prompt the students to engage them to personally respond to the

text. Beyond asking students whether they like/dislike a story, teachers themselves actually do not know how to ask questions which are appropriate to direct their students to use their evaluative skills.

4.4.6 Employing the Use of Wait Time

Excerpt 6

> Teacher M: 'Wait time'? I don't really do that. Questions are asked, then students answer. If I were to wait and wait, then the noise will start; students will start talking. How long should the 'wait time' be?
>
> Teacher N: I used to do it (to give wait time), not sure of how long. I don't really time, but after a while, just didn't do it anymore.

The teachers' responses showed that both were unsure about the duration of 'wait time'. A probable explanation could be the teachers themselves are unaware towards the significance as well as the importance of 'wait time'.

4.4.7 Use of Divergent Thinking Terminology

Excerpt 7

> Teacher N: Classify, analyze, predict, create and so on should be taught by the science teacher. I want to teach them how to read first. This is already a difficult task.
>
> Teacher K: If they can read well, then across other subjects, they will find it a breeze. But right now to get them to read is a headache. What more those terms, I don't see how it can be done.

The teachers believed that terminology such as classify, analyze, predict, and create when framing tasks were scientific terms and thus, should remain in the Science classroom. It is obvious that the language teachers do not see the application of these skills in helping children to comprehend what they read and neither do they see that incorporating these skills in the reading classroom would actually help children to develop their reading skills in the long run.

4.4.8 Findings From Teacher's Questionnaire

Further on, discussions between the researcher and the six teachers revealed that reading comprehension lessons were rather formulaic; encompassing shared reading where the teacher would read together with the children followed by answering of reading comprehension questions found in the textbook and then written exercises. Regarding "wait time", the teachers' comments were that after questions were asked, the students would normally answer in chorus and the teacher would repeat the answers and write them on the board so that all the students could get the answers right. Then, they would get the whole class to read the answers before going to the next question and the whole routine would be repeated. The teachers' defence was that time was a precious commodity not to be wasted. On the contrary, the disregard on "wait time" poses a loss for the students. Studies by Stahl (1995) showed that when an undisturbed 'wait time' of 3 or more seconds was given to students, the length and correctness of their responses increased and the number of their "I don't know" and "no answer responses" decreased as well. A "wait time" of less than .7 seconds resulted in students being perceived slow or unable to answer by the teacher which in this case could have affected students' thinking process.

Another important point to take note of was that during questioning sessions, the students' chorus of answers could just be a 'parroting' of words. The contention here is that students had ready answers written in their textbooks due to the nature of the used books given to them under the Text Book Loan Scheme (Skim Pinjaman Buku Teks -SPBT) where the books used were not new and previous owners had already written answers in them. As such, the teacher's assumption that when students shouted answers were an indication that they have comprehended text is more an illusion than the successful achievement of reading objectives.

In a nutshell, the outcome of the findings from the questionnaire to the teachers seemed to indicate that classroom practice in reading comprehension was not inclined towards the development of HOT skills. Students were not trained to apply HOT skills as part and parcel of the learning process. Teachers should direct students to examine the validity of their own on-task thinking based on their prior knowledge, textual evidence and whatever resources available to them to engage in HOT. This situation is further aggravated by the fact that even comprehension questions in the textbook were mostly in the category of lower-order thinking questions confirming the studies carried out by Sharmini *et al.* (2003) and Rafie (1998) that higher-order skills such as giving opinions, predicting, giving personal response as well as giving sufficient "wait time" to answer questions were not the general practice in the English language classroom. The same scenario seemed to be happening in the researcher's school. The teachers had some knowledge of what HOT skills involved as the researcher too, had also attended in-house training to stress the importance of and to encourage teachers to incorporate 'Critical and Creative Thinking Skills'(CCTS) or *Kemahiran Berfikir secara Kritis and Kreatif (KBKK)* in the classrooms.

Thus, the findings of this study clearly support the studies by Abdullah (2005), Rafiei (1998), Nurliza (2002) and McKown & Barnett (1999) who found that the non-existence of explicit strategy-instruction in the classroom was teachers' lack of knowledge resulting in students not being trained to develop their HOT skills in the language classroom. Even though all the teachers have attended in-house training to develop HOT skills in the classroom but they most probably only have a vague idea or maybe no knowledge of what HOT skills were and how to use them in the classroom.

The teachers' feedback seemed to indicate that irrespective of the teacher's years of teaching experience or knowledge regarding HOT skills, explicit strategy-instruction was

not the norm in the English language classroom. On the other hand, it is the researcher's strong belief that students can be trained to make connections between the concepts learned in one subject with the skills and knowledge acquired from other subjects in their everyday life. There should not be any demarcation of disciplines as transference of knowledge across disciplines can facilitate the engagement of divergent thinking.

4.5 Results of Pre Intervention Critical Reading Inventory Test Scores

The Critical Reading Inventory (CRI) with the passage, 'The Baker' at pre primer level II (Applegate *et al.* 2008, p. 97) benchmarked the critical reading ability of the participants prior to explicit strategy-instruction. A total of eight questions measuring recall, inference and critical thinking were asked (refer to Table 4.3).

Table 4.3 Breakdown of questions in the Pre Critical Reading Inventory

Pre Intervention Critical Reading Inventory	Text-based questions	Inference questions	Critical response questions
Text -The Baker	Nos. 1, 2, 6	Nos. 3, 5, 7	Nos. 4, 8

In the test, 1 participant had a minimum score of 1.0 and 3 participants managed to score 6.0 out of a full score of 8.5 (100%). The mean was 3.3 at a median of 3 which can be interpreted that more participants were at the lower end in the distribution of scores (Table 4.4). The detailed scores of each participant is appended (refer Appendix N).

Table 4.4 Results of pre intervention Critical Reading Inventory

Pre Intervention Critical Reading Inventory	Min	Max	Mean	Median	Total
Text - The Baker	1.0	6.0	3.3	3	8.5

4.6 Results of Pre Intervention Reading Comprehension Test

The pre intervention reading comprehension test was administered to determine participants' reading level. The difference between the CRI and the reading comprehension test was that the CRI identified the critical reading ability of the participants' whereas the reading comprehension test was used to assess participants' reading comprehension level. It was an assessment tool tailored by the researcher based on Nuttall's Reading Taxonomy as well as guidelines from the CRI. The test with the passage titled 'Yusuf' was administered to the participants after the CRI. A total of ten questions measuring recall, inference and critical thinking were asked (refer Table 4.5).

Table 4.5 Breakdown of Questions for the Pre Reading Comprehension Test

Pre explicit strategy-instruction- reading comprehension test	Text-based questions	Inference questions	Critical response questions
Text-Yusuf	Nos. 9	Nos.2,4,7& 8	Nos.1,3,5,6&10

Pre intervention reading comprehension test scores had 1 participant each obtaining 3 marks (lowest score) and 8 marks (highest score) out of a total score of 12.5 (100%). The median showed that most of the participants had scores around 3.0 and below (refer Table 4.6).   The detailed scores of each participant is appended (refer Appendix O).

Table 4.6 Results of Pre Intervention Reading Comprehension Test

Post explicit strategy-instruction reading comprehension test	Min	Max	Mean	Median	Total
Text - Yusuf	3.0	8.0	5.5	3.0	12.5

4.7 Participants' Response to Higher-Thinking Questions in Reading Tests

Response to HOT questions in both the CRI and reading comprehension tests prior to intervention of explicit strategy-instruction showed that what participants were able to do most of the time was to lift information directly from the text. Participants lifted statements from the text without adequate support in their attempt to answer higher-order questions as exemplified in excerpt 8.

Excerpt 8

Text: The Baker
Question 4: Do you think it was right for the baker to give the little girl a cupcake?
       Why or why not?
Answer: Either yes or no and must be justified.
Nurin: Yes. Because the baker said, "Here is cupcake for you."
Ali: Yes. He give cupcake to girl.
Kasyfi: No. Girl said I want a cake.

Instead of explaining 'why' to answer the question, participants lifted from the text. The open-endedness of the question did not require a fixed answer. Answers given could be either positive or negative as long as it was supported but in this instance, even though the three participants answered the first part of the question, the second part posed a problem for them. They lifted a statement from the text and deemed that as justifying their choice of answers. Hence, in order to engage participants to respond to the text based on textual evidence, the researcher had to point out to the participants that direct lifting from the text was not answering the question. The inability to critically respond to what was not explicitly stated implied that participants were merely literal readers. Applegate *et al.*, (2008) explained that this kind of scenario was typical in situations where text-based assessments were the norm and students were drilled towards test-wiseness. Another example of participants' inability to infer can be seen in excerpt 9.

Excerpt 9

> Question 5: Who would need a bigger cake, Jane or Bill? Why?
> **Answer: Jane. Because she has ten guests/more friends.**
> Aisyah: I want a big cake" said Jane.
> Kama: I want a big cake" said Bill.

The participants lacked inferencing skills to deduce that since Jane would be having ten friends over for the party, she would need a bigger cake than Bill. Participants were unable to recognize the implication that a bigger cake was needed because there were more guests to Jane's party. In other words, participants could not draw conclusion from what was not explicitly stated in the text which was the element that differentiated direct lifting from inferencing.

Most times, when HOT skills questions were asked, participants would just extract random answers from the text. The interpretation made by the researcher was that participants were clueless as to how to answer these HOT questions. They were used to lifting answers and were unable to extract information from the text to support their answers. The findings from the test results were consistent with the researcher's observation and previous classroom experiences that participants needed to be explicitly taught to read in between the lines for them to answer higher-order questions. Jenkinson (1973, p. 49) suggested that "appropriate training should begin in the earliest stages" when young readers encountered difficulties when answering HOT questions. Johnson (2000, p. 5) reiterated that learners do not benefit from merely being exposed to high-level thinking tasks unless there is explicit strategy-instruction first.

4.8   Explicit Strategy-Instruction Intervention to Develop HOT Skills

A total of 7 stories and 10 written comprehension tasks were used throughout the explicit strategy-instruction phase in order to train the participants in developing their predicting,

inferencing and critical thinking skills. The intervention was carried out over a period of eight weeks. The stories were sourced from existing English year-four textbook or books recommended by the Ministry of Education. The comprehension questions were constructed by the researcher based on the reading framework mapped out in the CRI (Applegate *et al.*, 2008, pp.16-17) and Nuttall's Reading Taxonomy (Nuttall, 1996, pp. 186 - 189). Each reading session consisted of three main parts which were pre, while and after reading.

4.8.1 Predicting

Pre reading of the story began with the researcher drawing participants' attention to the illustration on the cover. A main questioning pattern began with, "What do you think the story is about?", "How do you know?" and "How do you think the story would end?" was used. Questions were kept simple and straight to the point to ensure that participants had comprehended the questions in order that their "inability to answer was not as a result of the complexity of the language structure but a deficiency in strategy use" (Copple *et al.*, 1984, p.214). In the story, "Grasshopper In A Bottle", the cover had a cartoon drawing of a little grasshopper in distress and this instantly caught participants' attention. The researcher then encouraged the participants to predict the story as shown in excerpt 10 (answers are in bold).

Excerpt 10

Text: Grasshopper In A Bottle. A little grasshopper is trapped in a bottle but is
       subsequently rescued.

Researcher : What is this story about?
Noah   : Grasshopper
Researcher : Look at the grasshopper
Anis   : He sad. He cry.
Researcher : Yes, good. Where is he?
Siti   : He is in a bottle.
Addin   : He's trapped.
Researcher : Do you think it went inside on its own?
                 What else can you tell me?
Kasyfi   : He naughty.
Hakimi   : He *kena tangkap* (is caught).
Researcher : Ok.
Amir   : He's in trouble (**Has managed to guess the title of the story**).
Sazmi   : He's scared and sweating.

As participants made intelligent guesses to predict the title of the story, the researcher put responses on the board. As the reading continued, the most appropriate predictions were ticked. The first page had an illustration of an older and a younger grasshopper. Participants were asked to identify their relationship. Responses from participants were 'father and son', 'grandfather and grandson' and 'brothers'. The teacher's role was to invite participants' contribution in voicing their views and opinions. Colour pencils were used to annotate the text and to put in additional information as the researcher took the participants through the story. Sign-post questions were used to enable the participants to zoom in on textual evidence to facilitate comprehension and justification for choice of answers (refer excerpt 11).

Excerpt 11

Text: Grasshopper In A Bottle, p. 2.

Researcher : Who is the girl?
Sarah   : Jerry friend.
Researcher :What's her name?
Noah   : Evelyn
Researcher : Write her name beside her. Use any colour pencils you want.
                Write this question on page 3.
                "Why would Evelyn think that Jerry would still be asleep?"
Ariff   : No school today
Izzati   : Still early.
Researcher : How do you know?
Izzati   : In the book.
Researcher : Which line tells you that?
Faiz   : Line 7
Researcher : Very good, Faiz.

Participants considered various plot options and outcomes to re-examine and confirm their own predictions. Through use of stop-points, the researcher directed participants towards responses that were more focused. Participants had to make and support their predictions based on textual evidence and to make inferences albeit what was not explicitly stated. The researcher's goal was to assist participants to recognise their use of strategies through group discussion and interaction.

Participants made, confirmed and reused predictions based on the title, cover, preview and illustrations which were important and integral elements in explicit strategy- instruction. Early predictions were changed as participants had to constantly confirm or revise their thinking as they read. Participants learned to anticipate what they were going to read; tapping into their wealth of knowledge to anticipate, make informal predictions to facilitate engagement with the text. On top of that, they learnt how to support or reject predictions as they navigated through text features and illustrations. The researcher encouraged participants to examine pictures to connect with the story. The researcher constantly

directed their attention to pictures shown as they identified elements by writing and labeling illustrations.

4.8.2 Inferencing

Before reading of the text, "Grasshopper In A Bottle", the researcher primed participants' existing knowledge to the story by activation and use of background knowledge. This was carried out by getting participants to relate the three friends' outing to what was known to them. These ten-year olds also enjoyed catching butterflies and spiders. Participants actively searched for meaning through inference by applying schemata they have developed on the basis of their personal concrete experience and social cultural interaction. The association of participants' background knowledge created the "hook and increases the possibility that new, associated information will be remembered" in the process of meaning construction and to enhance critical thinking (Wolf, 2007 as cited in Nevills & Wolfe, 2009, p. 81).

According to Dorn, French & Jones (1998, p. 24), "cognitive apprenticeships" emphasizes the importance of using prior knowledge to acquire new knowledge to construct meaningful schemata. It is important to note that children's schemata represent clusters of concepts and procedures that have developed based on their experiences in their unique home and community cultures. In a nutshell, the development of background knowledge schema is thus influenced by children's social and cultural experiences as well as their cognitive developmental stages. This was especially helpful to attract participants' attention to hook them to read on (refer excerpt 12).

Excerpt 12

Lead-in questions to hook participants
Text: Grasshopper In A Bottle

Researcher : Who is Darren? (page 3)
Anis : Jerry's brother *atau* (or) friend?
Aiman : friend (Researcher wrote the suggestions on the board)
Researcher : What does Jerry want to catch?
Zulhilmi : Wild animals- tiger, snake.
Researcher: Catch not hunt.
Nureen: : Butterflies?
Syahmi : Grasshopper
Researcher : Let's read on to see what they wanted to catch.

The scaffolding of the comprehension process is shown in the following excerpt (refer excerpt 13), where the researcher utilized the "clarifying strategy to elicit information through a factual level which was from low-level thinking to interpretive-level questioning" (Ruddell & Ruddell, 1995, p. 148). This process of activating the thinking process in cognitive strategic development, thus involved recalling and retrieving what was already known about a concept or subject (weather in Malaysia is already very hot by mid-day) and then connecting it to what was being read i.e. Jerry and Darren wanted to catch grasshoppers. The outcome was they could only go after Evelyn has had her breakfast. The questions acted as prompts to assist participants to narrow down their choices.

Excerpt 13

Text: Grasshopper In A Bottle

What time did they go hunting?
A. 7-9 am
B. 9-11 am
C. 11-1 pm
How do you know?

Adnan   : He telephoned Evelyn early.
Researcher : Can you find the sentence to support your answer?
Aiman   : Page 3, "He would still be asleep in this early hour of the morning, especially since there was no school that day."
Researcher : Which line?
Hakimi   : Line 7.
Researcher : So, after Evelyn had her breakfast, what time would that be?
Izzati   : Maybe after 8- 8:30 a.m.
Aisyah   : 9 a.m.
Researcher : Which is the most suitable?
Noriman   : A. 7-9 a.m.
Kama   : C. *Terlalu lewat, panas* (too late, hot).

The reading of the story continued as the researcher directed participants to evaluate, monitor and regulate their thought processes. The researcher clarified doubts by modeling and using active questioning techniques. Participants were shown how to address information and ideas found in the text whether implicitly or explicitly to which McEwan (2004) described as facilitating readers "to grapple with the text, develop it and then construct meaning to promote meaningful comprehension of text" (p.37).

A further example is illustrated in excerpt 14 in the story, Yusuf. It showed how Ali had tapped onto his prior knowledge and experience, searched for a logical reason and finally arrived at the answer.

Excerpt 14

> Text: Yusuf
>
> Question – Is Yusuf allowed to read comics?
>   A. Yes B. No
>   How do you know?
> Kasyfi : No. He sleep.
> Ali   : No, No. He read comics after eating.
> Researcher : How do you know?
> Ali   : On page six, line two. *Mak (mother)* saw Yusuf read comics but she not scold.
> Researcher : Very good.

Ali supported his answer by stating that, "Yusuf read comics in the house he no hide to read," which was a logical response. The basis for this statement was that if Yusuf had not been allowed to read comics, then Yusuf would not have dared to openly do it in front of his mother. The next question had the participants trying to guess the time that Yusuf had his bath. The researcher asked a series of questions to enable participants to integrate information from a sequence of events to finally identify the most appropriate time.

Throughout the interaction, the researcher guided the participants to infer by applying strategies such as reading between the lines, predicting and cross-checking to deduce the time that Yusuf reached home, had lunch, played football and finally had his bath. Ruddell & Ruddell (1995) suggested that readers who utilize background knowledge is said to "engage in analytic interpretive and applicative levels of thinking" (p. 175). This can be interpreted that participants were using knowledge structure of personal concrete experiences and background knowledge schemata to arrive at meaning closure which was the time that Yusuf had his bath (refer excerpt 15).

Excerpt 15

Text: Yusuf

Question: What time do you think Yusuf finally had his bath?
       A. 4-5 pm
       B. 5-8 pm
       C. 9-11 pm
Researcher : What time did Yusuf reach home?
Noah   : 2pm
Siti   : 12pm-Fri. Is it too early?
Researcher : What did Yusuf ask her *Mak*? Go to the 1st page.
Nur Alina : Is lunch ready?
Syakir   : 1:30 pm
Researcher : What time did he have his lunch?
Mahmud   : *Dia terus makan* (He ate immediately).
Ahmad   : 2.30 pm
Researcher : What did he do after lunch?
Ali   : Read comics
Arina   : Sleep
Addin   : Rest
Researcher : How long did he sleep?
Faiz   : After lunch
Researcher : Which page tells you how long he slept?
Ariff   : Two hours. Page 10.
Researcher : Good. Then, what did he do?
Kasfi   : He played football.
Batrisya   : He went to the field.
Ikhwan   : He played for 1 hour.
Researcher : Yes. So what time do you think he stopped playing football?
Asyraf   : 6.30p.m.
Adam   : 5p.m.
Aisyah   : No, not 5pm. *Mana boleh*? (How can?)
Researcher : I know.
Ali   : 7p.m. *masuk azan* go home (Prayer time).

The step-by-step meaning construction process as participants are guided to apply strategies such as predicting and inferencing are shown in the text, "The Perfect Present" as illustrated in excerpt 16.

Excerpt 16

Text: The Perfect Present-a story about a little boy, Sam who loves to paint and how he used his gift to paint a portrait of his father as the 'perfect present' for his birthday.
Pre reading task
Researcher : What is on the cover?
Mohammad: A present.
Hakimi   : A box and got ribbon.
Noriman   : Colourful wrapping paper.
Researcher : Read the title. Does it match the cover?
Participants: Yes (Unanimous).
Researcher : What do you think the story is about?
Addin   : Happy Birthday!
Researcher : Why happy birthday?
Afiq   : We get presents.
Adam   : Toys, KFC.
Researcher : Let's read the preview of the book.

While reading task
Researcher : Is Sam a good painter?
Airman   : Yes.
Researcher : How do you know?
Aiman   : He paint Dad picture.
Omar   : At page 2. Look like his Dad.
Researcher : Yes, I agree with you. Let's turn to the next page.
                    Is Sam close to his parents?
Siti   : Yes.
Researcher : How do you know?
Kasyfi   : I know. I looked at the pictures. Sam, mum and dad very happy.
Researcher : Identify 2 words to show that they are a happy family.
Sarah   : Sam and Dad together.
Researcher : Tell me the page.
Ariff   : Page 4.
Researcher : Good. Now what is Sam doing?
Kasyfi   : Drawing his dad.
Noah   : Sketch his dad.
Researcher : Ok. Write, "Sam is sketching his dad" beside Sam. Let's read the next page.
Alina   : Mum hugged Sam tightly and ruffled his hair.
Researcher : What does 'ruffled' mean?
Fareez   : *buat rambut* Sam (showed action of ruffling with his hand).
Researcher : Yes. That's right. How do you know?
Fareez   : I looked at page 5.

The question, "What do you think is Sam's favourite number?" initially stumped the participants and had a few of them arguing that the answer was nowhere mentioned throughout the story. On further probing, participants were able to answer correctly by stating that Sam was wearing a sweater with a number '10' on it (refer excerpt 17). The

researcher's explicit effort to direct participants' attention towards textual and picture clues was to provide meaningful support towards evaluating the text more critically to develop their HOT skills. The explicitness of the instruction was a more desirable path to pursue as it gave "first order priority to the value of context clues both language and pictorial and, ultimately a realistic and far-seeing plan in classroom language teaching" (Stauffer, 1969, p. 253).

Excerpt 17

Text: The Perfect Present

Researcher : What do you think could be Sam's favourite number?
Kamal   : *Tak tau pun*. (Don't know)
Aiman   : Where is it?
Lailatul   : I know.
Researcher : What is your answer?
Lailatul   : Ten
Researcher : How do you know?
Lailatul   : Sam wear T-shirt ten number.
Researcher : Everybody, what page is that?
Siti   : page 2, page 4, page 8.
Researcher : Very good.

4.8.3 Critically Responding to Text

Copple *et al.*, (1984) stated that young children should be engaged in activities such as drawing and colouring eagerly and naturally. These were deemed powerful tool to enable the "construction of internal representations of thought and the assimilation and accommodation of experiences in problem-solving" (p. 46). Bearing this in mind, the researcher then tapped into the element of children's natural desire to draw and paint in the following activity. Vocabulary such as "enemies, protect and camouflage" were translated for the participants by the researcher (refer excerpt 18).

Excerpt 18

Text: Grasshopper In A Bottle

Question : If you can change the colour of the grasshopper, what colour
would you change it to? Why?
Draw the grasshopper and colour it.
I would change it to ……………………… because ……………………… .

Amir   : I want a brown grasshopper because my grasshopper can help them hide
from their enemies. It also can protect themselves from enemies in the
field and it can eat dead grass.
Fareez   : I want a blue and green grasshopper because it can camouflage in the sky when it fly
and can camouflage when it eats too.
Ali   : I want a multicolour grasshopper because I want a grasshopper like a rainbow.
Afiq   : I want a blue grasshopper because it looks very beautiful and it can live in the water
so everyone can see the grasshopper in the next generation.
Nureen   : I want a blue grasshopper because my grasshopper can swim faster.
It has two long legs, a pair of beautiful eyes. My grasshopper can jump
and fly.

An analysis of participants' answers showed participants falling back on their background knowledge that the grasshopper is a pest. Amir suggested that his grasshopper will eat dead grass. The choice of colour for the grasshopper was the colour of its surroundings to camouflage itself. Clearly, facts learned in Science has facilitated the transference of knowledge regarding predator and prey. Participants' drawings could be interpreted from two dimensions: aesthetic and utilitarian.

The drawings by Amir, Fareez and Ali were more functional in nature whereas Afiq's and Nureen's drawings were more aesthetic. Irrespective of whether from an aesthetic or utilitarian perspective, the task activated the participants' imagination. As different people see, hear and feel differently, thus, participants were given the freedom to perceive and visualise. This engagement was what Kelley-Clausen & Grace (2007) deemed "a cognitive strategy that is deeply personal and enables readers to better understand text by calling on their senses-conjuring smells, tastes, sounds, textures or images that bring the text alive" (p. 133/134).

In the text, 'Devi and the Stranger', the researcher minimised the scaffolding by fading out the modeling of cognitive strategies but was always in the periphery to step in as and when necessary which was when participants encountered difficulties in answering the questions. Slowly, responsibility was transferred to participants and the amount of assistance was reduced. The researcher was always on hand to prompt and give feedback to participants regarding their progress. One of the task required participants to choose pictures to represent characters in the story (refer excerpt 19). The act of imagery was used to facilitate participants' engagement in the thinking process. The task required participants to digest and comprehend the text prior to selecting the most appropriate pictures as representative of the characters in the text. This activity was carried out to provoke participants to create and understand simplified depictions in order to "facilitate the development of participants' receptive and productive representational competence in critical thinking" (Copple *et al.*, 1984 p. 67). The researcher held a short discussion with the participants as to their choice of pictures.

Excerpt 19

Text : 'Devi and the Stranger' was a short story about a little girl who was home alone. It tells of how she foils an attempt by a stranger who wanted to break into her home.
Task: Choose the most suitable picture for the characters in the story. Discuss your choice.

　　Some of the comments made by participants were:
Shafiq　　　: Devi is scared. She girl so I cut it.
Fareez　　　: *Mata dia takut.* (Her eyes looked scared). It is Devi.
Anis　　　: She look "cemas" (anxious).
Researcher: What about the "stranger"?
Nureen　　: He make (repair) computer not television (**productive representational competence**).
Batrisyia　: Stranger *jahat* (bad).
Adam　　　: That one look not bad man (pointing to another picture).
Zulhilmi　: The police catch stranger.

Some of the pictures that participants chose are shown below.

| The Stranger | The Stranger | Devi | Police |

In the personal response part, participants had to state the reason they liked the story. The responses made showed participants' active involvement and clearly demonstrated that participants were more self-regulated and cognitively competent to complete task. This was critical towards the development of positive reading attitudes. Some of participants' responses are shown in excerpt 20.

Excerpt 20

Text :   'Devi and the Stranger'
Question: Do you like the story? Yes/No
               Why?

 Syahirah: Yes. I like the story because Devi was clever and smart. I like the story   because Devi is a clever girl, the story is good and I love the story. She is a brave girl and she is clever. It teach us a moral lesson and not to talk to stranger and fascinating.
Zulhilmi: Yes. I like the story because it has give us lesson to be cautious when stranger came to their homes. All of us have to be careful when strangers came to their homes.

4.8.4 Synthesizing of Strategies

As participants gained independence, the researcher's role was gradually decreased as the transfer of responsibility to the participants was purposefully carried out. In the last two texts, fables were chosen because of their predictability and story rhythm. May (2006) contends that fables possess an attractiveness to create active comprehension and reader response to stimulate thinking. The tasks in the two texts, "The Three Sons" and "Raven

Boy" required the participants to synthesize and apply strategies learned to problem-solve in order to put the story together. The researcher showed participants how to identify the keywords in each short text by asking questions to cue participants to the main event for each text and then participants had to match the picture to the text as shown in excerpt 21.

Excerpt 21

Text: The Three Sons is a story about a woman who wanted her three sons to   marry good wives by setting tasks for her future daughters-in-law.
How many sons does the woman have?

Anis   : Three
Researcher: Circle the word. What are they working as?
Siti   : Farmers
Researcher: Circle the word.

> 1. Once upon a time, there lived a woman with three sons. They were farmers. Their land was fertile so they were well-off.

To create a sense of ownership, the researcher had the participants come up with their own title for the story they had put together. Throughout the reading task, participants' enjoyment and enthusiasm were evident. This process of "cognitive commerce" (Taba & Elzey, 1964 as cited in Ruddell & Ruddell, 1995, p. 141) supports children's active involvement in peer interaction so as to increase motivation and interest. This activity generated a lot of healthy story-based discussion. Subsequently, the use of keywords activated participants' previous experience and prior knowledge to comprehend the story. As the researcher led the participants on with questions and prompts, this query technique enable participants to problem-solve to match text with the correct picture. Excerpt 22 showed how participants The following examples show participants' apply their organizational skills to synthesize text in the process of meaning-based discussion to put the story together.

Excerpt 22

```
Text: The Three Sons
Text Box no. 9
Hakimi       : Mana 'next day?' (Where is next day?)
Researcher : You think that is the keyword?
Noah         :  Find two brothers with mother.
Hakimi       : Page 1, No.4 can see two big brothers but no
                 mother. Look page 2, no. 6. Two brothers and
                 mother, got puppies.
Noah         : No. See page 1. Picture 1. Two brothers with
                 mother.
Hakimi       : Yes, mother and two brothers happy.
```
9. The next day, the <u>two elder brothers</u> brought home the <u>linen</u> which had been woven out of the flax. Their mother was satisfied with the maidens' work.

4.9   Findings of CRI Test Post Explicit Strategy-Instruction

The purpose of the CRI before and after explicit strategy-instruction was to assess whether there was any improvement in the critical reading ability of the participants after intervention of explicit strategy-instruction. The post intervention CRI test titled "Fish" was taken from the primer level which was one level higher than the pre intervention CRI text used. The post test was similar to the pre test format with a total of eight questions measuring recall, inference and critical thinking (refer to Table 4.7).

Table 4.7 Breakdown of Questions in the Post Critical Reading Inventory

Pre Intervention Critical Reading Inventory	Text-based questions	Inference questions	Critical response questions
Text -Fish	Nos. 1, 2, 6	Nos. 3, 5, 7	Nos. 4, 8

The post intervention CRI test meted to the thirty participants returned a minimum score of 4.0 and a maximum of 8.0 which was also the total score for the test (100%). The mean as

well as the median were at 6.0. Table 4.8 shows a comparison of pre and post intervention CRI tests scores. The detailed scores of each participant is appended (refer Appendix P).

Table 4.8 Results of CRI Pre and Post Explicit Strategy-Instruction

Class 4F	Min	Max	Mean	Median	Total
Pre explicit strategy-instruction Critical Reading Inventory - The Baker	1.0	6	3.4	3.0	8.5
Post explicit strategy-instruction Critical Reading Inventory - Fish	4.0	8	6.0	6.0	8.0

Post intervention CRI test scores showed that the minimum score had increased from 1 to 4 marks. In other words, there was an improvement of 3 marks. The maximum score achieved in the CRI pre intervention of explicit strategy-instruction was only 6.0 but post intervention saw 2 participants achieving the full score of 8.0 (100%). The difference in mean between pre and post intervention CRI scores was 2.6, an increase of 43%. Post intervention CRI also produced an increase in central scores with 50% of the participants at a median of 6.0 as compared to the pre intervention median of 3.0. Post explicit strategy-instruction intervention CRI test scores basically showed a marked improvement in participants' critical reading ability.

4.10 Findings of Reading Comprehension Test Post Explicit Strategy-Instruction

Following the post intervention CRI test, the post explicit strategy-instruction intervention reading comprehension test with the text, "Just Draw" was administered to the same 30 participants. The purpose of this test was to find out whether there was any improvement in the participants' reading level. It was a step further to examine what the participants were capable of achieving in a much bigger context with a more difficult to specifically evaluate

whether explicit strategy-instruction had propelled the participants to a higher level of thinking skills. The reading comprehension test had 9 questions with a total of 10.0 marks (100%). The objective of the questions was constructed to measure recall, inference and critical thinking (refer Table 4.9).

Table 4.9 Breakdown of Questions for Reading Comprehension Test

Text	Text-based questions	Inference questions	Predicting questions	Critical response questions
Post explicit strategy-instruction Text -Just Draw	Nos. 3, 5	Nos. 2, 7	1	Nos. 4, 6,8 & 9

Post intervention reading comprehension test had 4 participants achieving the minimum score of 5.5 and a maximum of 10.0 which was also the total score for the test (100%). The mean as well as the median were at 8.0. Table 4.10 shows a comparison of pre and post intervention of reading comprehension tests scores. The detailed scores of each participant is appended (refer Appendix Q).

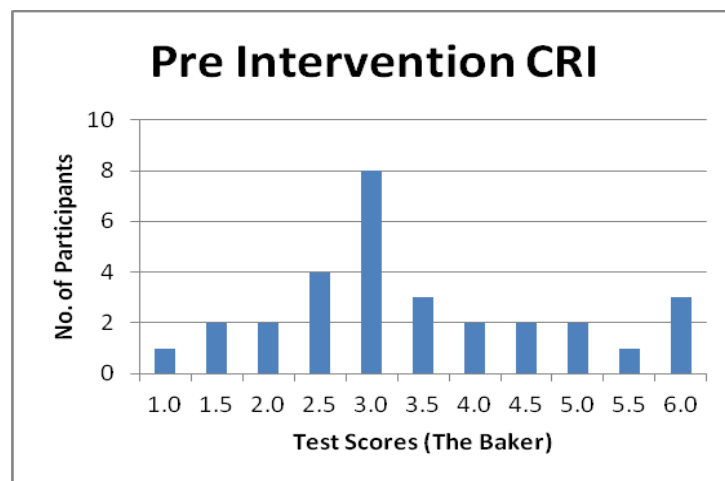Table 4.10 Pre and Post Intervention Reading Comprehension Test Scores

Class 4F	Min	Max	Mean	Median	Total
Pre explicit strategy- instruction reading comprehension test Text - Yusuf	3.0	8.0	5.5	5.5	12.5
Post explicit strategy- instruction reading comprehension test Text - Just Draw	5.5	10.0	8.1	8.0	10.0

The difference in mean pre and post intervention reading comprehension test scores was 2.6 which would mean an increase of 51% in test scores. There was a difference of 4.5 marks between the maximum and the minimum post reading comprehension test scores. This would mean a narrowing of the gap between maximum and the minimum scores in the pre

intervention explicit strategy-instruction reading comprehension test scores. Post intervention also produced an increase in central scores with 50% of the participants with scores at a median of 8.0 as compared to a median of 5.5 pre intervention of explicit strategy- instruction.

4.11 Comparison of CRI Tests Pre and Post Explicit Strategy-Instruction

Results of pre and post intervention explicit strategy- instruction CRI were plotted on bar graphs to show spread and distribution of test scores (refer Figures 4.1 & 4.2).

Critical Reading Inventory Test Scores

Detailed analysis of pre and post intervention of explicit strategy-instruction CRI test scores clearly demonstrated that participants did perform better post CRI. In figure 4.1, the pre intervention CRI graph showed a low score of 1.0 with a mode of 3.0. The highest score attained was 6.0 with no participants achieving the full score of 8.5 (100%).
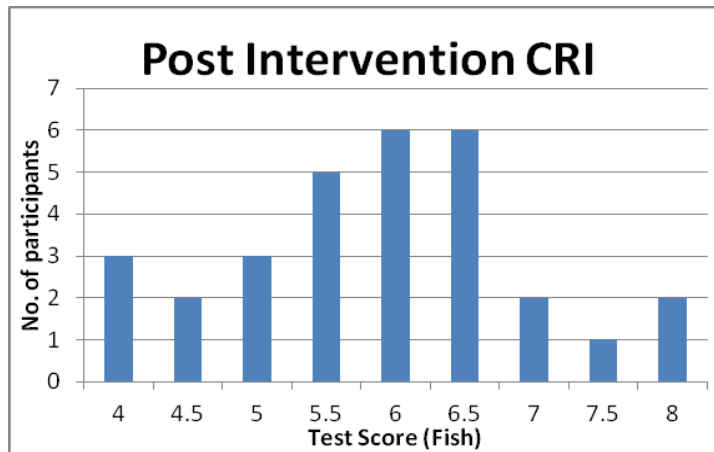
Figure 4.2 Results of Post Explicit Strategy- Instruction
Critical Reading Inventory Test Scores

On the other hand, post intervention of explicit strategy-instruction CRI test scores indicated a vast improvement in participants' reading ability. The lowest score was 4.0, as compared to 1.0 pre explicit strategy-instruction. There were two common occurring scores, namely 6.0 and 6.5; as compared to the mode of 3.0 pre intervention of explicit strategy-instruction. As mentioned earlier, the distinct difference in post explicit strategy-instruction CRI was that the text used was one grade level higher than the text used prior to the 6-week explicit strategy-instruction. In addition, two participants achieved the full score of 8.0 (100%). Hence, the increase in test scores can be interpreted as an improvement in participants' reading ability and a positive sign of participants' engagement in HOT in order to answer the HOT questions correctly.

4.12 Comparison of Reading Comprehension Tests Pre and Post Explicit   Strategy-Instruction

Results of pre and post intervention explicit strategy-instruction reading comprehension test scores were plotted on bar graphs to display spread and distribution of test scores (refer Figures 4.3 & 4.4).
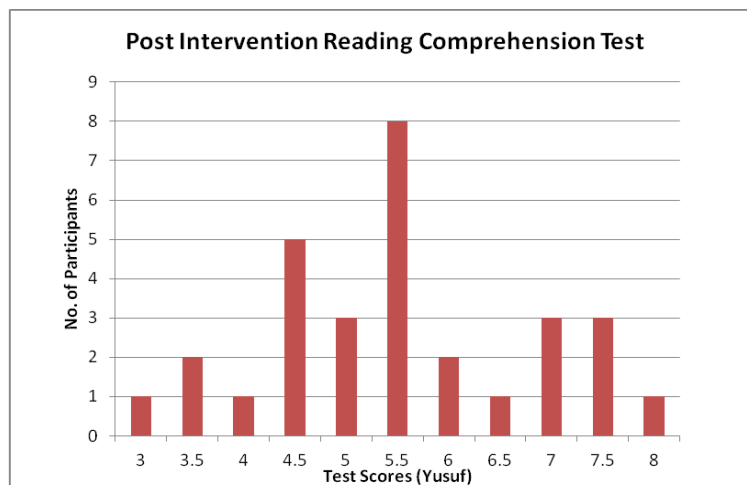
Figure 4.3 Results of Pre Explicit Strategy-Instruction
Reading Comprehension Test Scores

Detailed analysis of pre and post intervention of explicit strategy-instruction reading comprehension test scores clearly demonstrated an increase in scores. In figure 4.3, the pre intervention strategy-instruction reading comprehension graph showed a widespread of scores ranging from a low of 3.0 to a high of 8.0 with a mode of 5.5. No participants achieved the full score of 12.5 (100%). The tendency of the scores were scattered along 3.5–5.0 indicating that there were more participants scoring below 5.5.
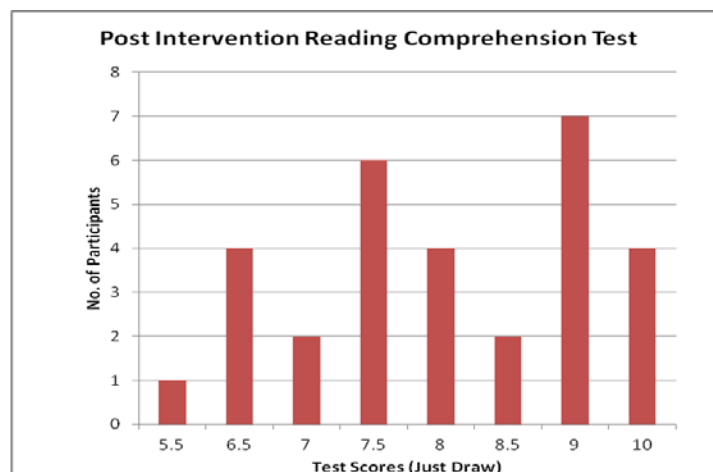

Figure 4.4 Results of Post Explicit Strategy-Instruction
Reading Comprehension Test Scores

In comparison, post intervention of explicit strategy-instruction reading comprehension test showed improvement in participants' reading performance (refer figure 4.4). The lowest score for the post test was 5.5 an increase of 2.5 pre intervention reading comprehension

test and the range was 4.5. The mode had a total of 7 participants scoring 9.0, as compared to the mode of 5.5 pre intervention of explicit strategy-instruction. The post test also had 4 participants achieving the full score of 10 (100%).

Henceforth, in respond to the first research question which was to what extent will the reading performance of a class of thirty primary year 4 ESL students be improved following explicit reading strategy-instruction training, it can therefore be seen that results from the pre and post intervention CRI of explicit strategy-instruction were clear indicators of the participants' improvement in their critical reading ability. In addition, participants also achieved better scores in the post explicit strategy-instruction reading comprehension test, indicating a distinct improvement in participants' reading performance.

The second research question was to find out whether explicit strategy-instruction in reading can develop the HOT skills of a class of primary year 4 ESL students. In both the CRI and the reading comprehension tests, participants' scores improved and this could be attributed to participants' ability not only in answering the text-based questions but also the higher-order questions which made up about 65% of the total number of comprehension questions resulting in the improved reading performance. The average increase for both the reading comprehension tests was a minimum of 10%. In other words, all the participants improved in both their critical reading ability as well as reading performance tests. Thus, as can be seen from the positive results of the CRI tests and the reading comprehension tests, the intervention of explicit strategy-instruction did improve the critical reading ability and the HOT skills of the participants especially proven in participants' performance in answering the higher-order questions and the vast improvement in tests scores.

CHAPTER FIVE

CONCLUSION

5.1   Introduction

"The person is always becoming, always growing and developing in every sense of the word-bodily, mentally and emotively-the human essence is always emerging" (Jarvis, 2007, p. 13). Jarvis believed that humans can be taught to grow into becoming intelligent; the social milieu in human learning provides a rich source of variables to develop HOT. In that milieu are the students, peers, the teachers and parents and together, the building of HOT skills can definitely bring about a positive impact in the English classroom. The purpose of this study was to address two research questions. The first being whether explicit reading strategy-instruction would affect the reading performance of a class of primary year-four ESL students and the second, to answer whether explicit reading strategy-instruction would be able to develop the HOT skills of a class of primary year-four ESL students. Thus, this study was carried out to explore the development of HOT skills through explicit strategy-instruction during comprehension lessons. This chapter will begin with a summary and discussion of the key findings of explicit reading strategy-instruction to promote HOT in a year four ESL classroom, followed by subsequent discussion on limitations and implications of the study as well as implications for teaching and future research.

5.2   Summary and Discussion of Findings

Analysis of data exhibited clear and consistent findings. Key findings were that the year-four students benefited most from explicit strategy training to answer HOT skills comprehension questions. Both the pre-tests scores on critical reading ability and reading performance showed rather similar patterns and when compared to the post reading test scores, there was definitely a marked improvement post explicit strategy-instruction. The

critical reading ability of participants progressed from pre primer to primer grade. Pre and post reading performance tests too showed an increase in scores. The first t-test carried out on the pre and post Critical Reading Inventory tests produced a two-tailed P value of 0.0001. The second t-test based on the pre and post reading comprehension tests scores had the same P value of 0.0001 (refer Appendix R). Both these values can be interpreted as extremely statistically significant, thereby reinforcing the fact that explicit strategy-instruction through the planned reading tasks in teacher-led activities did improve participants' reading performance. This clearly answered the first research question positively which is explicit reading strategy-instruction did improve the reading performance of a class of primary year-four ESL students.

In response to Research Question 2, regarding whether explicit strategy-instruction would be able to develop the HOT skills of the participants, an analysis of the reading tests scores indicated a significant positive difference between pre and post reading tests performance. The increase in participants' scores in the post reading tests which had more HOT questions strongly suggest that explicit strategy-instruction can slowly build up participants' mental and social maturation and increased experience in reading text as well as their ability to engage in higher-level thinking thereby firmly answering the second research question in the affirmative.

Hence, the current study found that explicit reading strategy-instruction impacted positively on reading comprehension performance and these findings are consistent with previous studies by Muniz-Swicegood (1994); Neff *et al.* (1994); Jimenez (1997); Philip & Tan (2006). The findings more specifically corroborate the efficacy of explicit reading strategy-instruction as a feasible tool to enhance reading comprehension achievement (Pressley, 2000; Hartman, 2001). Therefore, the positive effect of this study not only lends support to the educational benefits of strategic comprehension instruction but also offers an exciting

and promising beginning for the development of explicit reading strategy-instruction for the regular classroom.

5.3   Classroom Observation

During the onset of the study, participants were struggling to answer the pre intervention reading tests questions but when the post reading test was administered, the participants' test scores showed a distinct improvement. Participants did gain from being engaged in explicit higher-order teaching. A possible explanation for this considerable improvement might be related to the nature of the study whereby students had been given the opportunity to practice and acquire HOT skills as the sole focus throughout the reading lessons.

Prior to explicit strategy-instruction, participants could not elaborate why they liked stories read. The most probable reason to explain this situation could be because participants have not been trained to personally respond to a piece of text. Questions that followed reading comprehension in the language classroom were normally directed at asking specific information from the text and this was proven when most of the participants could answer the text-based questions confidently. Studies by Paris *et al.* (1983), Andre (1986) and Baker (2005) supported the fact that younger children do not appear to possess comprehension "fix up" strategies as do older children even when they are aware of it due to minimal instructional emphasis in these areas in the early grades.

The driving force of the study was participants' love of reading stories that they could relate to and thus, the selection of the stories used in this study did foster a lot of interest and motivation from participants during explicit strategy-instruction reading lessons. Participants' prior experiences and knowledge structures formed a conceptual framework to enable them to connect and make sense of new information with existing schemata (Andre, 1986). In the text Yusuf, the researcher told the participants that Yusuf was a year-four

pupil studying in a national primary school. This triggered a lot of oral exchange as participants talked about what they normally do when they reached home. Participants were initially hesitant but in getting them to talk about themselves, the class came alive. In getting the participants to predict the story, participants mapped the title and picture of a boy in school uniform onto the overarching conceptual framework of existing knowledge structures to make predictions about the story.

Sensitive observation by the researcher resulted in heightened awareness towards participants' behaviour and reactions during the course of the study. The comprehension lessons had been tailored to develop the higher-thinking skills of the participants. The process of explicit reading strategy-instruction along with recounts from the researcher is hoped to support the usefulness and appeal of this study for the ESL reading classroom. Every reaction beginning from a nod or a shake of the head, a shrug of the shoulders, a smile or even silence were messages from the participants to the researcher to "gather open-ended, first hand information" (Cresswell, 2008, p. 221) and a better understanding of participants' cognitive development in HOT.

In the same vein, when participants were told to bring glue, scissors and colour pencils to carry out activities, the eagerness and excitement of the participants could hardly be contained as they waited impatiently to assist the researcher to carry the printed copies of the stories to class. Children's motivation, both internal and external, is a critical component in the quest for knowledge as well as to "support and maintain high student motivation towards building positive attitudes in the reading classroom" (May, 2006, p. 378).

The researcher set clear objectives within the expectations and accomplishments of the participants. Classroom activities were always filled with a buzz of activities as participants

thoroughly enjoyed predicting, reading aloud, giving opinions, commenting on character behaviour, discussing story development and meaning negotiation. On the other hand, even during these discussions, when participants answered the questions correctly, the researcher was worried that participants might have guessed the answers. But, as the lessons progressed, participants increasing ability in application of strategies seemed clearer. Since many of these comprehension strategies were new, the researcher was of the opinion that it was unrealistic to expect participants to use the strategies without some form of guidance or reminder. The whole process of explicit strategy-instruction was further enhanced with the positive attitude of the participants and all these factors were optimal towards developing critical thinkers.

The researcher constantly invited participants' contributions in voicing their views and opinions. The researcher focused almost entirely on encouraging and motivating participants to use strategies appropriately and effectively. Stauffer (1969) proposed that questions such as, "Think about if you were Yusuf, what would you do, how would you feel? What do you think? What can be done? What do you suggest? How to help?" (p. 37) can encourage participants to think. Participants assumed more responsibility in monitoring their own strategic thinking as they were immersed in a literacy-rich environment. Even though the majority of the participants seemed to be able to predict, make connections and inferences but they definitely still needed guided practice.

It was the researcher's opinion that at this stage of the participants' cognitive development, it was appropriate that they should be given consistent guidance and practice. The initial stage of the study had some of the participants with good proficiency in English being unresponsive. From a common sense perspective, this could have been caused by the fact that these participants were new to the technique of higher-order questioning and they were less confident and more anxious. The deliberately open-ended questions allowed

participants the freedom to think about the story in their own ways, encouraged specification, prediction making and discussion about differing individual interpretations. As the study progressed, participants revealed increasing confidence as they learned to become active questioners and their enthusiasm acted as a catalyst illuminating the path for the researcher to complete the study; in such that the director became the directed.

5.4   Limitations of the Study

The first limitation is that conclusions from the current study were limited to year 4 students enrolled in regular classrooms in Putrajaya. To tackle this limitation, further studies should be conducted to examine the benefits of explicit reading strategies instruction and social interaction during English language lessons in different settings utilizing a bigger sample size from various locations. A second comment can be made on the measurement instrument used where the reading performance tests questions were constructed based on guidelines on testing higher-order reading comprehension skills (Applegate *et al.*, 2008) and not authenticated by any professional body. The tests were based on the researcher's experience and thus, restricts findings and should not be used to generalise results to other situations. Whether similar differences in posttest performance would have resulted for students in other grades or in other schools were not investigated.

In addition, conclusions were limited to the reading measures used in the current study that reflected the reading comprehension question-answering exercises, reading proficiency, and reading vocabulary skills of the participants involved. Whether similar performance differences would have been reported on other comprehension skills remains unknown. Post-test performance differences were limited to measures tested on completion of the study. Therefore, long term maintenance of skills and knowledge were not documented. Critical questions too, can be raised about the extensive assistance and coaching given to

the students. The intervention focused on a synthesis of knowledge and cognitive processing that led to a complex set of materials and teaching strategies and changed the classroom environment during the reading comprehension lessons. What is deemed comparable levels of support is relative and uncertain. Therefore, more studies should be carried out in an attempt to replicate the positive effects of the present study. However, none of these limitations are deemed serious enough to detract the power of the intervention for improving learners' critical reading comprehension performance as well as HOT skills.

5.5   Implications for Teaching

These findings have implications in teaching. Notwithstanding the restrictions, the outcomes of the present study corroborate the efficacy of explicit teaching of HOT skills as a feasible tool to enhance students' reading comprehension achievement. The feasibility of implementing explicit strategy-instruction in reading in the English language classroom can be confirmed as a promising procedure and should be initiated to get this practice off to a good start. The way to go is to purposefully plan activities that would facilitate and encourage students to express their thoughts, explore new possibilities and even challenge opinions and viewpoints (Mayfield, 2007). Teachers can adapt and adopt procedures described in the present study easily without any intrusion regarding classroom pedagogy. Strategies used will need to incorporate the use of predictions and inferences to strengthen the nature of relationship between reading comprehension and divergent thinking.

Without a doubt, explicit strategy-instruction in reading comprehension should be the central goal in reading comprehension instruction in the English language classroom. The findings of this study confirmed previous findings by Rajendran (2001); Nurliza (2002); Philip & Tan (2006) that the teaching of HOT skills should be undertaken in the language classroom not only to improve reading proficiency but also to develop autonomous

learners. Considering that education is not a delivery service of knowledge conveyance, the teaching of explicit reading strategy-instruction would empower a learner to morph into a dynamic individual capable of being a director. School would then become an active production site and the primary factor for the teacher to consider in designing an environment which fosters critical thinking is the creation of a classroom which develops within learners the disposition for critical thinking.

Factors pertinent to this study, was the increasing amount of time that participants spent in front of the television and playing computer games leading to decreasing interest in reading and the lack of a reading habit which Dicker (2004) accounts to the "lack of the six M's namely manpower, money, management, motivation, media and role models to emulate" (p. 3). The list is limitless and deficits in the education system which is exam-oriented is now being addressed in one of the National Key Result Areas (NKRA) under the Government Transformation Programme which is to improve student outcomes towards literacy development.

Rosnani (1999) in her investigation of teaching critical and creative thinking in Malaysia, identified that the major setbacks towards the incorporation of HOT skills in our classrooms are teachers and the curriculum. Even though studies have been carried out but "unfortunately, this meticulous research were mostly kept on the library shelves gathering more dust" (p. 43) but all is not lost for even if one teacher can take the initiative to practice it, a hundred lives would be touched and multiply by the number of years of service, then this small step can turn into an avalanche one day and hopefully that tomorrow will come.

A more profound change can only come about with the firm belief and confidence that HOT skills can and should be taught across the curriculum and not only in science or mathematics but also in the language classroom. There is a need to establish a classroom atmosphere that encourages and values thinking and risk-taking. Classroom environment must create a sense of trust that will encourage learners to form hypotheses, make predictions and at the same time allow ample opportunity for learners to connect predictions to the story content. Researchers have found that teaching reading strategies is important to developing increased student comprehension. At the same time, they have found many teachers lack a solid foundation for teaching these reading comprehension strategies (Rajendran, 2002). Therefore, teachers need to be prepared, through professional development, on how to design effective comprehension strategies and how to teach these strategies to their students.

In discussing the shortcomings of the language classroom, the researcher concluded that for higher-order thinking skills to occupy centre-stage and be an effective classroom tool, the introduction of explicit strategy-instruction related activities must be accompanied by a host of other changes. There are obvious tensions between those who see academic performance as a yardstick to measure students' achievements and school performance. An important area concerns the questions, exercises, and problems used in teaching of explicit strategy-instruction. As educators, we must be cognizant to the effectiveness of divergent questions in reading comprehension. All it takes is a little effort to start the ball of explicit strategy-instruction rolling in the language classroom. The knowledge gained is hoped to set the motion for a quest for other areas of HOT that can improve language learning.

A major consequence of ignoring the pedagogical aspect of educational technology is that of failing to prepare students to become knowledge workers. Educators must focus on explicit strategy-instruction by incorporating and stimulating new pedagogical theories

rather than strictly on the delivery of content knowledge. Failure to do so will result in a continuation of an educational system that is rapidly failing to meet the needs of learners. Thus, improving reading skills is a top priority for all as by learning various comprehension strategies and how to best teach these strategies to the students is the insurance for future success.

5.6 Implications of the Study

The researcher strongly believed that the efficacy of explicit strategy-instruction in the language classroom had been overlooked as there is no mention of explicit strategy-thinking as a learning outcome in the English curriculum specifications as mapped out by the Ministry of Education, Malaysia. The onus is on English language teachers to grab the bull by the horns to introduce and provide practice in explicit strategy-instruction to train students to develop reading strategies to build their HOT skills. Undeniably, teachers' knowledge of reading strategies and their usefulness are important factors to consider before carrying out explicit strategy-training in the language classroom. This revelation should be taken seriously. Teachers as movers are very crucial to achieve the objective of the National Philosophy of Education. Teachers themselves must have the productive habits of mind to foster a future generation of thinkers. This change is needed to achieve Vision 2020 which is also in line with the goals of the Government Transformation Programme (PEMANDU, 2011).

Analysis of participants' responses identified clearly demonstrated that participants knew how to use the reading strategies. On the same vein, participants' schemata was also used to inform them what to do in specific situations. Insights from this study revealed the potential of HOT skills in helping learners to gain a deeper understanding on texts read during comprehension lessons. It is also the intention of the researcher to share the research results

and knowledge of the comprehension strategies with other teachers in the school. The incorporation of explicit strategy-instruction in the language classroom is hoped to open exciting ways to promote active involvement for both teachers and learners. What is needed is to avoid easy generalizations and to comprehend the 'how' and 'why' explicit reading strategy-instruction should be taught explicitly. In line with pedagogical purposes, as teachers we need to understand how an individual thinks. The thinking process requires the brain to engage in selective pruning via restructuring in order that an individual would constantly learn to think out of the box.

Creativity lies in the minds of each and everyone of us and it can be triggered in those where the buttons are released for "who knows what talent we could unleash if we could learn how to exploit it properly for educational purposes?" (Stein, 2007, p. 38). If this belief is assumed to be correct, then the new classroom environment must be designed around divergent thinking questioning techniques in the same way that the traditional classroom is textbook driven (Samuel, 2005). In a nutshell, explicit strategy-instruction should be taught in any classroom to enable learners to internalise and identify the HOT process to become thinking individuals. Explicit strategy-instruction is integral to the process of increasing engagement in reading comprehension lessons and is egalitarian to foster a long-term interest in reading. Concurrently, this is hoped to further explore higher-level thinking and reading performance to identify their reciprocal relationships.

A major strength of the current investigation was the establishment of an intervention that was effective in improving reading comprehension without a long period of teacher training. This was achieved through the reliance on the selection and sequencing of the teaching examples presented in the materials. The teaching examples not only established and controlled appropriate participant responses, but may have also provided scaffolding for classroom teachers where their knowledge of comprehension instruction may have been

lacking. Hence, an important component of the current intervention was its execution by a practitioner, without the intrusion of scripted lesson presentations. This increases the external validity of the intervention and the likelihood of teacher acceptance of the current intervention in the long term.

5.7   Implications for Future Research

There is, however, considerable room for improvement, and more research should be carried out to add to existing data so as to create a more valid and credible stance towards the teaching of explicit strategy-instruction in the English language classroom. As HOT is metacognitive in nature involving our awareness of our thinking process as we construct meaning (Brown, 1985 as cited in Ruddell & Ruddell, 2000), there is a need to redesign the classroom of tomorrow. This restructuring of the classroom includes the use of computers to provide active learning, authentic tasks, challenging work, complex problem solving with the objective of HOT skills' training. In the same way that the traditional classroom is textbook driven, the explicit strategy-instruction classroom of tomorrow should be teacher-learner driven.

Future research should focus on explicit instruction on reading strategies and development of HOT skills in the area of second language learning. Additional studies of second language readers' awareness of various reading strategies and the relationships between awareness and critical reading ability and reading performance should be promoted. Also needed are training studies on the most effective instructional means for explicit teaching of reading strategies. Research questions that might be studied in this area include: What is the most effective proportion of each type of HOT questions? For example, a loading of evaluation questions might be demotivating given the hierarchical nature of the taxonomy. Students may not be adequately prepared to successfully address questions at the highest

level. What is the most effective way of sequencing the question type? Would higher-level thinking be more effectively promoted by having students answer all rote or text-based questions first, then all inference questions next, and so on, or would interspersing them be more effective? These are questions that need to be answered in order to determine the value of future studies. The information obtained from research on these issues would likely be applicable and reinforced the importance of explicit strategy- instruction in the language classroom.

Throughout the teaching of explicit strategy-instruction, even though the students were eager to use predicting, inferring, and questioning during small groups, most of the students still needed guided practice and teacher prompting at this stage of their cognitive development. Students definitely needed more time to grasp automaticity in the use of the strategies and to gain a strong foothold in strategy use. It is the researcher's long-term goal to plan how to implement this innovation to integrate HOT skills into the language curriculum. This is hoped to ensure that students will have a better understanding of the various reading strategies in order to develop their HOT skills.

Rather than a sole focus on general strategy instruction, the current investigation strongly supports the use of existing and available classroom materials that will firstly, foster the teaching of effective reading comprehension strategies by all students, and secondly, can be easily implemented by classroom teachers. Finally, the theoretical principles outlined in the current investigation, is hoped to provide clear direction for textbook authors which could have implications for classroom practice in reading comprehension.

5.8   Conclusion

The introduction of explicit strategy-instruction tasks and related reading comprehension activities into the classroom remains a much desired goal as its slow progress is not at an acceptable rate to achieve Malaysia's aspiration to produce a society of thinking individuals (Rosnani, 1999). Only with an accelerated pace in explicit strategy-instruction across the curriculum can the younger generation move forward to compete with global development in the field of education and technology. Educators cannot lose sight of the fact that creativity and exploration are crucial elements to bring about improvements in achievement. All said and done, the ultimate question that planners and educators need to ponder is how equipped and committed the executors are to carry out explicit strategy-instruction in the language classroom. Without a doubt, this calls for a reexamination of teaching power, learner needs, change in curriculum, learning activities, attitudes and social interactions, learning goals, and reevaluation practice in a whole new orchestrated learning environment. It demands a setting in which both teacher and learners must be equally motivated to take responsibility of the outcomes. In schools, such a context implies radical rearrangement of the power relationships between teachers, administrators and students and of traditional forms of social organization without which Vision 2020 will forever remain just a vision.