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ANALYSIS OF SAUDI COLLEGE STUDENTS' REPORTED AND ACTUAL READING STRATEGIES ALONG WITH THEIR METACOGNITIVE AWARENESS AS THEY READ IN ENGLISH AS A FOREIGN LANGUAGE

presented by

Abdullah M. Al-Melhi

has been accepted towards fulfillment of the requirements for

Ph.D. degree in English

Marilyn Wilson
Major professor

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By

Abdullah M. Al-Melhi

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of English

1999

ABSTRACT

ANALYSIS OF SAUDI COLLEGE STUDENTS' REPORTED AND ACTUAL READING STRATEGIES ALONG WITH THEIR METACOGNITIVE AWARENESS AS THEY READ IN ENGLISH AS A FOREING LANGUAGE

By

Abdullah M. Al-Melhi

This study examined the reported and actual reading strategies and the metacognitive awareness of a random sample of fourth-year Saudi college students as they read in English as a foreign language. It consisted of two parts: part one surveyed students' metacognitive awareness using Carrell's (1989) metacognitive awareness questionnaire. Students were given a thirty -six-item questionnaire to answer along with a reading proficiency test. Out of 90 participants, twenty students were chosen for the second part of the study; based on the results of the reading proficiency test, ten students who have achieved the highest scores and ten of those who have achieved the lowest scores were met individually for the think-aloud protocol session. In this part, participants were asked to read a selected passage and reflect on their reading/thinking process using the think-aloud protocol.

Analyses of the subjects' actual readings suggest that they interacted with text as they applied mixture of global and local strategies in their reading. Their interactions seem to support Stanovich's (1980) assumption of an integrative compensatory model of reading as they appeared to rely on either their higher/lower information in their reading processes to compensate for possible weaknesses.

Furthermore, results of the study show, among other things, that some differences did exist between skilled and less-skilled readers in terms of their actual and reported reading strategies, their use of global and local strategies, their metacognitive awareness, their perception of a good reader, and their self-confidence as readers.

To my parents for their endless love, prayers and scarifies.

ACKNOWLEDGMENTS

All praise is due to Allah the almighty. I praise Him and thank Him for the opportunity and ability that He bestowed on me to complete this work.

There are almost an uncountable number of people without whose time and effort in both large and small ways this work would have been impossible or at least much more difficult and less educational than it was.

First, I would like to express my deepest gratitude to my doctoral committee whose support and guidance have made it possible to complete this work. In particular, I am most grateful to my major advisor, Professor Marilyn Wilson, for her enthusiasm, advice, and faith in me to conduct this study. Dr. Wilson served not only as my academic advisor, but as a friend who shared her time and expertise and was instrumental in seeing this research to fruition. I have been a fortunate recipient of Dr. Wilson's continuous support and inestimable kindness. Being aware of my family situation, she combined scholarly insight and the gentlest of tactful pressure in such a balance that I can only hope that our relationship does not end here. Special thanks must go to Professor James Stalker for his support and insightful feedback throughout the stages of this work. Dr. Stalker welcomed me to his office whenever I needed help or advice. My deepest gratitude goes to Professor Marcellette Williams, who agreed to continue serving on my committee despite her numerous commitments at the University of Massachusetts. Dr. Williams's continuous encouragement since the first course I took with her was a source of inspiration to me. I am also thankful to Dr. Malik Bela for his valuable comments and his help in proofreading the Arabic translation of the questionnaire. Thanks also go to Professor Erick Lunde for serving as an outside reader and for his useful comments.

I am indebted to my friends Mr. Ahmed Al-Hajjaj and Dr. Bader Aloliwi for their help in bringing this work to completion. Mr. Alhajjaj took the burden of the data entry and their statistical analysis while Dr. Aloliwi helped with the final format of the dissertation. Both of them sacrificed their time and patiently worked long hours despite their family and school commitments.

Thanks also go to my friends Dr. Naji Al-Arfaj, Dr.Abdulrahman Al-jamhoor, Dr. Saud Mushait, and Dr. Suad Abdulhameed for their encouragement and their useful comments.

My deepest appreciation is due to my old friend Dr. Abdulrhman Asiri for his help from the first day I arrived in Michigan. Not only did he help during the early stages of the data collection, but also he continued to support and encourage me despite the thousands of miles between us.

I would like to thank Dr. Abdullah Al-Kahtani, Dr.Ali Areshi, Dr. Abdullah Abu Ashi, Dr. Othman Al-Semari, Dr. Ibrahim Al-Falay and my friend Abdulaziz Fageeh for their help during the data collection. My gratitude is also extended to my friends Saad Al-kahtani, Khalid Abalhasan, and Dr. Ali Al-Shanqeeti for their help in proofreading the Arabic translation of the questionnaire.

I am also grateful to King Saud University, Abha branch (currently King Khalid University) which granted me a full scholarship to pursue my M.A. and Ph. D. degrees in the United States. Moreover, I am grateful to Dr. Ahmad Al-Asswad, my advisor at the Saudi Cultural Mission, for his continuous encouragement and help during the last three years of my study.

Sincere appreciation is due to the subjects of this study; although they were approaching their finals during the data collection, they agreed to participate. Without them, this work would have been impossible.

My words fail to fully express my deepest gratitude and appreciation to my family and relatives who patiently endured with me the many obstacles that I faced throughout my study. In particular, I would like to thank my parents, Mofareh and Zainah, my brothers Mohammed, Ali, and Mossa for their continuous encouragement and prayers; my wife Saleha for her support and understanding; my beloved children Wafaa, Walid, Hanaa, Nabil, and Nadda for their touching encouragement and kindness. Special thanks go to my cousin, Ayed Adeed and my brothers-in-law Dr. Ahmed Al-Serhan and Dr. Mohammed Hatoori for their support and advice.

To all of you and to all of the unnamed individual and relatives, who contributed directly or indirectly to this work, I am deeply grateful.

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Chapter 1

1 Introduction

The last two decades saw enormous changes in the theoretical orientation towards learning. The common view of the learner changed from one of a passive recipient to one of the learner making an active contribution to the learning process. Reading is no exception in this matter where "[o]ur understanding of reading, both in terms of theory and practice, has changed considerably..."(Grabe, 1991: 376). In other words, the old view of reading, which considered reading as a one-way process starting with visual information and proceeding to higher-level encoding, has changed (Stanovich, 1980). It is currently viewed as an active process where the reader interacts with the text and makes use of efficient strategies to understand printed information (Goodman, 1967; Anderson et al., 1984; Anderson et al., 1985; Valencia & Pearson, 1987). It's widely accepted that effective reading requires readers' active involvement in the reading process (Cohen, 1983; Carrell, 1989). In light of this perspective, a lot of attention has been devoted to studying readers' cognitive strategies and their important role in reading comprehension (e.g. Winlkinson, 1980; Linden and Wittrock, 1981; Cohen, 1983). Recently, research has shown a surge of interest in the metacognitive area loosely defined as "thinking about thinking" (El-Hindi, 1996), or "...one's knowledge of and control over his/her own thinking" (Walczyk, 1994). According to Jimeneze et al., (1996), investigation in the metacognition area has been proven to be fruitful (Jimenez et al., 1996). The study of metacognition in general, and more specifically its connection to effective reading has received increasing attention from many researchers (e.g. Brown, 1980; Carrell, 1989;

Baker et al., 1984; Hosenfeld, 1977b). One example is the descriptive study of Hosenfeld in which his study of a small number of individual students using think-aloud techniques yielded certain types of reading strategies employed by successful/unsuccessful readers as they read in their foreign language. For example, the successful readers: 1) kept the meaning of the passage in mind; 2) read in "broad phrases"; 3) skipped words viewed as unimportant and guessed the meaning of new words from the context; and 4) had a positive self-concept as a reader. On the other hand, according to Hosenfeld, the unsuccessful readers: 1) lost the meaning of the sentence as soon as it was decoded; 2) read in short phrases; 3) seldom skipped words as unimportant, viewing words as "equal" in terms of their contribution to the total phrase meaning; 4) had a negative self-concept as a reader.

The study of students' metacognitive awareness relies on studying learners' knowledge and use of their own cognitive resources (Garner, 1987). According to Wade et al. (1993), having adequate processing skills appears to be insufficient if readers fail to monitor their comprehension process and/or fail to use their processing resources efficiently. Brown et al. (1986) state that:

> Understanding in the context of reading can be revealed in two ways: First, in one's knowledge of strategies for learning from text, differing demands of various reading chores, textual structures, and one's own strength and weaknesses as a learner; second, in the control readers have of their own actions while reading for different purposes. Successful readers monitor their state of learning, they plan strategies, adjust effort appropriately, and evaluate the success of their own on-going efforts to understand (p.49).

Similarly, Brown (1980) pointed to two important factors for defining metacognition and the importance of readers' interaction. The first factor, according to her, is the readers' awareness of their own cognitive processes; the second is their

knowledge of cognitive resources and use of self-regulatory mechanisms such as planning, monitoring effectiveness, and evaluating the outcome of their strategy use.

Having said that, it is fundamental to understand the interaction between a reader's available resources and his/her awareness and control of such resources to understand the nature of reading. In fact, studying this interaction in successful readers might reveal how it "breaks-down" in less successful readers (Walczy, 1994). In Walczy's words: "[u]nderstanding this interaction in successful readers can suggest how it may break down in the cases of less successful readers" (p. 174.)

Of equal importance to readers' awareness of their available resources and their control over these resources is their perception of the reading task. Readers may perceive reading tasks differently. For example, Gambrell and Heathington (1981) interviewed a group of good and poor readers (28 of each group) and found that unlike good readers, adult poor readers have a "limited understanding of reading as a cognitive process" and they perceived reading as a decoding process rather than "as a meaning construction or comprehension task" (p.215.)

1.1 Purpose of the study:

This study aimed at exploring Saudi male students' perceptions about their metacognitive awareness as they read in English as a foreign language. In an attempt to take the research one step further, it tried also to obtain and analyze the actual reading strategies (the reading-thinking process) of skilled and less-skilled readers and compare these with their reported strategies drawn from their answers to the metacognitive

questionnaire. It was hoped that the study would explore the Saudi students' perceptions about their reading strategies and would shed light on their metacognitive awareness as well.

1.2 Statement of the problem:

Unlike reading in the first language, reading in a second language involves reading difficulties as well as language difficulties. Research indicates that 30-40% of first-year college native students have reading and writing deficiencies in their native English language (Moore and Carpenter, 1985 cited in El-Hindi's, 1996) which suggests that the number should be higher in the case of the non-native speakers. Not only is the number higher, but also the reading difficulties encountered by non-native speakers "may differ from those experienced by monolinguals" (Knight et al., 1985: 789); and the reading strategies of monolingual and bilingual readers tend to differ as well (Padron et al., 1986).

Early research in reading in English as a second language followed the same route as the early work in reading in a first language where the reader was assumed to construct the authors' intended meaning by decoding the printed information from letters and words and then work their way up to larger and larger units to get the meaning of the given text. Because of these assumptions, it's no wonder that readers interact passively with text and concentrate on words' pronunciation and mastering the details the writer had set forth. Consequently, comprehension problems were attributed to decoding deficiency (for example, see Rivers 1964, 1968). Moreover, a lot of attention has been directed towards the product of reading rather than the process of reading (Hulstijn,

1993). Recently, researchers began to account for the active involvement of the second language reader in the reading process (e.g. for the interaction between readers' background knowledge and the visual clues represented in the printed text, see Carrell, 1981, 1982; Carrell and Eisterhold 1983).

Emphasis on the reader's active involvement in the reading process has led researchers to pay more attention to the reader's cognitive process and its connection to strategic processing in reading comprehension (Baker and Brown, 1984; Pressley, et al., 1989; Wade et al., 1993). However, non-native speakers' cognitive processes and awareness still lack the proper attention by researchers compared to that of native speakers.

After reviewing a great deal of literature, including dissertation abstracts, I found that some studies have dealt with readers' metacognitive awareness of nonnative speakers from background/s other than Arabic (e.g. Chinese, Spanish). Nevertheless, the reading strategies and metacognitive awareness of Arab students in general, as far as I know, have not received much attention. For example, I found no single study that deals with Saudi students' metacognitive awareness as they read in English as a foreign language. Moreover, despite the importance of students' metacognitive awareness and their actual reading strategies and control of these strategies, I didn't find any study that combines the two approaches that have been incorporated in this study (the reporting approach represented in informants' answers to the metacognitive questionnaire and the actual reading approach depicted in their think-aloud process). It is hoped that this study will shed light on Saudi students' reading strategies and highlight some of their reading problems as well.

1.3 Research Hypotheses:

Given the existing research, it was hypothesized that the informants' reading proficiency in English correlates significantly with their metacognitive awareness. The higher the score the better the awareness and vice versa (H1). H2 predicted that skilled readers' actual and reported reading strategies would correspond with one another more than that of the less-skilled readers. H3 held that skilled readers would interact with the text and apply "top-down" models in their actual reading. In contrast, H4 anticipated that the less-skilled readers would be text bound readers and incorporate "bottom-up" models more frequently in their actual reading. H5 postulated that skilled readers would have more positive self-confidence about their reading abilities as opposed to the less-skilled readers. Finally, H6 predicted that skilled readers would be more articulate and consistent in their reported reading strategies while the less-skilled readers would be less articulate and less consistent.

1.4 Importance of the study:

Of major importance in this study is the relationship between Saudi students' perceptions of the reading strategies they use and the actual strategies that they use. To what extent are their reported strategies similar to their actual ones? These questions have been studied using native speakers of English, but no study of metacognition (as far as I know) and of metacognitive awareness and its impact on the reading process of Saudi students has been done. This study makes valuable contributions to the research on ESL

reading in general and the reading of Saudi students in particular. Another essential element (of equal importance) is the use of the think-aloud approach in conjunction with the metacognitive awareness questionnaire (MAQ) which, according to Casanave (1988), holds "great promise." Besides the incorporation of these approaches, students were allowed to use their native language in their verbal reports to eliminate any possible interference of the language difficulty as they explain their reading strategies (Knight et al., 1985). Last but not least, the study offers some suggestions on teaching reading for Arab students in general and for Saudi students in particular.

1.5 Subjects:

Ninety college students majoring in English as a foreign language enrolled in four different colleges (King Saud University, Riyadh, Imam Mohammed Ibn Saud University, Riyadh, King Saud University, Abha branch and Imam Mohammed Ibn Saud University, Abha branch) participated in this study. Subjects resembled a homogeneous population in terms of knowledge, gender, age, and background. That is, all were undergraduate English majors, all were males, all had almost the same educational background, all were seniors, and were of similar age (with the exception of a few students who were older than the rest of the group by two or three years). Educationally speaking, the system of Saudi requires students to study 12 years prior to their college education (elementary school 6 years, middle school 3 years, and high school 3 years). In terms of studying English as a foreign language, typical Saudi students begin learning English in the 7th grade. In other words, all subjects studied English 6 years before they

were admitted to their universities. In these 6 years, English is taught for four periods a week and each period lasts for 45 minutes in all Saudi public schools. Furthermore, according to Al-Arfaj (1996), "English teachers...are given an identical syllabus with guidelines and deadlines and required to apply and follow it" in their teaching of the identical English textbooks (p. 3). Saudi schools are controlled and operated by the Ministry of Education of Saudi Arabia. So, the system is identical in the whole country and sometimes higher grades' final exams in all subjects (including English) are designed and graded by the Ministry of Education (i.e. the last year of the high school).

With that previous background in mind, the research randomly assigned subjects to do the first part of the study (the reading comprehension test and the MAQ). In other words, each university was visited more than one time to do the first part only where in each visit a class or two was randomly selected to take the first part of the study. Then out of the total number of the participants, 20 students were selected on the basis of their reading comprehension test scores to do the second phase of the study (the think aloud protocol).

1.6 Materials:

Carrell's (1989) Metacognitive Awareness Questionnaire translated into Arabic along with a standardized reading comprehension test was administered by the researcher to each group of students. The reading comprehension test was taken from an older version of the Michigan Test of English Language proficiency (MTELP). The MTELP test consisted of four passages and twenty multiple questions (five for each passage), but

students were asked to answer three passages only instead of four due to the time limitation. Students who participated in the pilot study were able to finish only three passages within the allowed time (45 minutes) and based on that the fourth passage was eliminated in the actual study. The twenty students who participated in the second part of the study were given a passage to read and were instructed to stop at certain places (five places altogether) and reflect on their reading process. The passage is titled "Art and Humor" and was taken from Reading between the lines a reading book intended for intermediate to advanced non-native speakers.

1.7 Definition of Terms

The following terms are defined according to their use in the study:

Metacognitive awareness: the reader's awareness and perception of different reading strategies employed during the reading process.

Reading strategy: the mental operations involved when readers approach a certain text.

Comprehension: the amount of understanding of a certain passage or paragraph while reading.

Comprehension monitoring: the state of consciousness of checking one's understanding of what he/she read.

Global strategies: Any strategy which appears to exert reader's involvement and interaction with the text.

Local strategies: Decontextualized pieces of data.

1.8 Limitation of the study:

Due to the detailed nature of the study and the time needed to study each case individually, it was not possible to study a large number of subjects; therefore the results are suggestive rather than conclusive. Procedures required to conduct this study and similar studies that revolve around the issue of metacognition from a diagnostic perspective place excessive demands on researchers and learners as well (Schraw et. al., 1994). Furthermore, the study focused on a group of Saudi college students which limits its results and interpretations to that group only. Finally, female subjects were excluded from this study due to religious reasons. Results of the current study might have been different had female subjects participated.

Chapter 2

2 Review of related Literature

2.1 Introduction:

Interaction between readers' cognitive processes and the printed information is a complex and invisible phenomenon. A reader's thoughts, struggle and search for meaning, his/her reflections and interpretation "are hidden from the outside observer" (Block, 1986: 463). Our information about this hidden phenomenon and whether and how this interaction happens comes "of secondhand external behaviors [such as] answering a question perceptively, discussing an idea or a comprehension problem convincingly, following written instruction successfully" (Casanave, 1988: 296-7). The control of such an interaction is attributed to readers' abilities to regulate and monitor this hidden process (Baker & Brown, 1984). Flavell (1979) describes metacognition as the knowledge and control of cognitive processes, which is influenced by three variables: person, task, and strategy.

This chapter provides an overview of literature relevant to this study. First, it lays out some background about reading theories. In doing so, a brief discussion of three models will be presented, namely: the "Bottom-up" model, the "Top-down" model, and the "Interactive" model. Next, the schema theoretic approach (as one of the interactive models) will be emphasized along with a summary of some studies that deal with it. Following the summarization section is a review of metacognition, comprehension monitoring, and finally a representation of verbal reports research.

2.2 Developments of reading research and theories:

Although research in L2 reading must differ from accepted L1 constructs (Koda, 1994), reading in L1 has no doubt provided the theoretical basis and shape for L2 reading research and theories (Barnett, 1989; Grabe, 1991; Koda, 1994). Thus, it is beneficial to provide a brief background about the theoretical development of L1 reading research and its relationship to research in L2. More specifically, five models of reading will be presented, namely: The bottom-up model, the top-down model and the interactive model, which includes the schema theoretic model and the cognitive model.

2.2.1 Bottom-up model of reading:

Earlier concepts of reading hold that reading is a series of discrete stages, proceeding from incoming visual information to higher-level encodings (Stanovich, 1980). This concept has been known as the "bottom-up" model of reading which, according to Goodman (1967), involves "exact, detailed, sequential perception and identification of letters, words, spelling patterns and larger language units" (p. 126). The reader's role, according to this model, is mostly decoding the printed information rather than interacting with it. In this model, a reader approaches the text by moving his/her eyes across the line starting with letters to be combined to form words, then combining words to form phrases and sentences (Eskey, 1986). In simple terms, this model considers the information to be text-driven and the reader basically decodes this information. Despite the insistence of some researchers on viewing reading as a decoding process (i.e. Gough, 1976), Eskey (1973) considers this model of reading to be inadequate since it

fails to recognize the reader's contribution to the text and to the reading process. Similarly, Garner (1987) indicates that these early conceptualizations of reading " are now seen as inadequate, for they fail to explain important empirical findings" (e.g. how syntactic and semantic processing affects word perception) (p.2). In the same vein, Smith (1971) argues that decoding as described by this model (letter-by-letter or word-by-word) represents a burden on readers since the meaning of one word is hard to retain until the next word is added and as a result no meaningful relationship will be established between the words. In conclusion, the "bottom-up" view of reading was rejected since it failed, as I mentioned earlier, to recognize the reader as an active participant and failed also to explain empirically what actually happens during the reading process.

The rejection of the bottom-up models of reading opened the door for new models to surface. These included, but were not limited to, the top-down model, the interactive model, the schema theoretic model, and the cognitive model.

2.2.2 The top-down model of reading:

Among the top-down models of reading, is the "psycholinguistics model" (Goodman, 1967; Smith, 1971) that will be presented briefly due to its new look at reading, its popularity (Paran, 1996) and its "impact on views of second language reading" (Carrell, 1988: 2). Linguistic cues, according to this model, provide a minimal contribution to the reading process. Instead of picking up information from the text (letter by letter and word by word) Goodman's (1967) description of the reading process in this model is summarized in his famous phrase "a psycholinguistic guessing game" in which reading " ... involves partial use of available minimal language cues ...but from skill in selecting the fewest, most productive cues necessary to produce guesses which are right the first time" (p.127). This partial use of minimal language cues might be helpful for L1 readers but not necessarily for L2 readers (Eskey, 1988). Unlike L1 readers who make use of the textual cues, Eskey believes that L2 readers' restricted linguistic ability hinders them from doing so. Thus, he thinks that L2 readers have to attend more to bottom-up processes than the L1 readers.

Similar to Goodman's (1967) view of reading, Smith (1971) emphasizes the importance of prediction and asking certain questions prior to reading and seeking their answers while reading. He states that: "[t]he twin foundations of reading are to be able to ask specific questions in the first place, and to know how and where to look at print so that there is at least a chance of getting these questions answered" (Smith, 1982: 166).

Criticisms of top-down models revolve around their "reliance on prior linguistic and conceptual knowledge...[their tendency] to downplay the importance of the text

itself" (Eskey, 1986), the difficulty of generating predictions when the topic is not familiar and the time needed to generate a prediction (Samuels et al. 1988), and their vagueness of conceptualization (Stanovich, 1980). Yet, the psycholinguistic model of reading is credited for its contribution to a better understanding of the reading process than the bottom-up approach (Eskey, 1986). The psycholinguistic view of reading accounts for the active involvement of readers in both the first and second languages, according to Carrell (1988), in which the reader is perceived to be "an active participant in the reading process..." (p.3). Moreover, according to Eskey (1986), curriculum planners have been influenced by this model and thus a good deal of "credit for a new concern in language teaching with reading as an independent skill ... must be accorded to the work of Goodman and Smith ... who have successfully promoted a top-down model of process" (p. 13). In terms of teaching reading, the psycholinguistic model of reading doesn't provide a method for teaching reading, according to Clarke et al. (1977), but the value of this model stems from its insights into the reading process.

Unlike Clarke et al., other researchers (Paran, 1996; Bernhardt, 1991; Eskey, 1986) believe that the psycholinguistic model of reading (the top-down model) goes beyond its insights into the reading process. According to Paran (996), the top-down view exceeded L2 research and was incorporated into its training, its methodology books and its materials. In his words: the top-down view of reading

"...did not remain in the realm of L2 research, but permeated the training courses, methodology books, and teaching materials written in the late 1970s and 1980s, through which it still exerts a powerful influence" (p. 26).

2.2.3 The interactive model of reading:

Psycholinguists' insights into the reading process led to a new concept of reading known as "the interactive model of reading". Unlike the "bottom-up" and "the top-down" models of reading, this model accounts for the interaction between higher and lower information during the reading process. Moreover, this model of reading, according to Mitchell (1982), treats both types of information, visual and non-visual, equally. The interactive model of reading holds that reading is both "top-down" and "bottom-up" in that graphic information is interpreted and interacts simultaneously with the reader's pre-existing knowledge (Rumelhart, 1980). This interaction is balanced between bottom-up and top-down information where "several kinds of knowledge...blend into one as, in the normal process of reading, the reader makes the text a part of what he knows (Eskey, 1986: 16). In Garner's view, Rumelhart's (1977) description of reading as the "simultaneous joint application of multiple knowledge sources is probably the best articulation of a current interactive model" (Garner, 1987: 3).

Different models of the "interactive approach" were presented (e.g. McClelland and Rumelhart's (1981) interactive-activation model, Stanovich's (1980) interactive-compensatory model, Taylor and Taylor's (1983) bilateral cooperative model among others). However, in Grabe's opinion, there is no single interactive model and any model that "takes into account the critical contribution of both lower-level processing skills ... and higher-level comprehension and reasoning skills ..." is an interactive model (Garbe, 19991: 386).

For the sake of brevity, I'll not discuss all of these models. Instead, I'll try to highlight Stanovich's model along with other interactive approaches that appear to be relevant to the current study, namely: the schema theoretic approach and the cognitive approach.

While Stanovich (1980) acknowledges the simultaneous interaction between upper and lower information, he argues convincingly that this interaction operates in a redemptory manner. In other words, individual readers compensate for their reading deficiencies by relying more on either their lower or higher level processes depending on their need and area of strength (e.g. poor readers may rely on their higher level process to make up for their lower deficiency such as letter or word recognition or vice versa). Stanovich (1980) referred to a number of previous studies (e.g. Stanovich, 1979a; Smith, 1971) that dealt with the reader's use of orthographic structure and the effect of contextual information on word identification. He concluded that the pattern results of these research are best explained by the "interactive-compensatory model" which accounts for readers' individual differences. According to this model, the interaction between higher and lower information is not necessarily a simultaneous and balanced one; rather this interaction is highly affected by individual reading differences. He says:

Interactive models, best exemplified in the work of Rumelhart (1977), assume that a pattern is synthesized based on information provided simultaneously from several knowledge sources. The compensatory assumption states that a deficit in any knowledge source results in a heavier reliance on other resources, *regardless* of their level in the processing hierarchy. (p.63)

2.3 The Schema Theoretic Approach:

Linguistic knowledge of any language does not alone necessarily result in full comprehension. In other words, the reader's knowledge of "language" components (e.g. vocabulary, grammar, word formation etc...) does not ensure comprehension. In fact, this knowledge is one variable while comprehension involves several variables. Among these variables is the reader's involvement with and contribution to the text as recognized by the psycholinguistic model of reading (Goodman, 1971; Smith, 1973). Such involvement requires another type of knowledge stored in the reader's mind about "all concepts: those underlying objects, situations, events, sequences of events, actions and sequence of actions" (Rumelhart 1980: 34). The aforementioned knowledge has received a lot of attention and has come to be known as schema theory. That theory holds that "any text...either spoken or written, does not by itself carry meaning. Rather...a text only provides directions for listeners or readers as to how they should retrieve or construct meaning from their own, previously acquired knowledge" (Carrell et al., 1988: 76). In the same vein, Dubin (1986) discerns the contribution of the text, yet emphasizes the contribution of the reader. In doing so, Dubin acknowledges that "[m]ost of the words...,[their] ...organization into sentences, and the division of ideas into paragraphs conveys meaning... [b]ut real comprehension [will be incomplete if the reader lacks previous knowledge of the topic]" (p.140).

It is evident that the psycholinguistic model of reading has influenced research in ESL. More specifically, research in schema theory has been within the boundaries of this model and according to Carrell (1984), "demonstrated the truth of both Kant's and [more recently] Anderson's observations" that relate the act of comprehension to the

individual's knowledge of the world. Within this domain, reading theorists emphasize the reader's background knowledge (known as schema) as an important variable of the reading process.

Research in schema theory indicates that there are two types of schemata known as culture-specific content schemata and formal schemata. The latter refers to reader's knowledge of the rhetorical and formal structure of the text whereas the former designates the reader's knowledge corresponding to the domain of the topic (Carrell, 1983; 1987).

Familiarity with the topic (both content and form but mainly content) makes it easy for readers to comprehend. For example, a scientific topic would be very difficult for someone of a different major (e.g. history). By the same token, culturally-based topics have been found to affect readers' comprehension. That is, readers may interpret what they read according to their own schema in shared-topics like marriage ceremonies or they might comprehend little/none in topics of unique-cultural topics (e.g. Christmas for non-Christians).

In a cross-cultural study, Steffensen et al. (1979) studied groups of Indian and American students (19 Asian Indians and 28 Americans) to assess their recall of familiar and unfamiliar passages. Two letters describing American and Asian Indian weddings containing 136 and 127 idea units (respectively) were given to them to read and recall. As Steffensen et al. predicted, results of this study show that subjects read the familiar passage faster and recalled more idea units than the unfamiliar one. Moreover, interaction of nationality and passage (presented in subjects' elaboration and distortions) was evident in both groups' recalls. Steffensen et al. concluded by saying, "the schemata embodying

background knowledge about the content of the discourse exert a profound influence on how well the discourse will be comprehended, learned, and remembered" (p. 19).

In a similar study, Johnson (1981) studied two groups of students (46 Iranians and 19 American who were included in the study for comparison purposes) to investigate the effect of language complexity and the cultural origin of the prose. Two reading passages were given to the subjects to read and recall in writing along with some multiple-choice questions regarding some information from the two stories. Half of the two groups were randomly assigned to read the two stories in an "unadapted" English text and the other half read both stories in an "adapted" (simplified) English text. Analysis of the written recall and the multiple-choice questions indicates that the effect of the language complexity of the text was less than the effect of the cultural origin of the story, especially for the ESL Iranian students. Subjects' recall of a native folklore story was better compared to that of the foreign story despite the language complexity. Results of Johnson's study seem to support the previous study (Steffensen et al. (1979) and other studies that emphasize the role of cultural background in students' reading comprehension.

Another study that combines content and formal schemata in one study was conducted by Carrell in 1987. In her study, Carrell studied two groups of high-intermediate-level ESL students (28 of Muslim background and 24 of Catholic Spanish background) to see the effect of both content and formal schemata on students' reading comprehension. Subjects were given two religious fictional passages (Ali Affani as a Muslim text and Saint Catherine as a Catholic text) to read, then recall in writing and answer multiple choice questions on two successive days. On each day, one text was

given to them where half of the group read the original unaltered text while the other half read the altered version of the text. The overall findings of this study indicate that subjects' familiarity with content is more important than form. However, Carrell indicates that "each component-content and form- plays a significant, but different role in the comprehension of text [thus] further research ...is needed" (p.476).

The dramatic escalation of research in schema theory has shown the major role it plays in reading comprehension. Yet, it has to account for other factors to continue to be useful as an overall theory (Casanave, 1988). Among these factors, according to Casanave, are "... context and purpose, cognitive process factors, meaning construction, and comprehension monitoring" (p.297). If we move in this direction and account for more of these factors, a third type of schemata, which is *strategy schemata* can be added to the well-known types (content and formal schemata). The question of the existence of such type of schemata has to be investigated, but in Casanave's point of view " it can serve to remind us of the many unexplored, underconceptualized, and interacting facets of the reading process" (p.298).

2.4 Metacognitive approach:

It appears that the extensive research in schemata has already led to a related area of research known as "metacognition". As a matter of fact, Rumelhart (1980) attributes the focus in cognitive science research to research in schema and other related notions (e.g. beta structures, frames, scripts, plans, and so on) (p. 33.) Advocates of metacognition and its role in reading argue convincingly that it highlights the active

involvement of the reader. Also, interviews of children reveal that they know little about reading as a task, and it "offers a tangible alternative to traditional instruction" (Jacob and Paris, 1987: 256). Moreover, improving students' reading comprehension can be attributed to research that deals with students' cognitive strategies during reading (Brown, 1980; Baker & Brown, 1984).

Metacognition has been related to different kinds of cognitive abilities (e.g. memory, reading, writing, and intelligence) and due to its fuzziness, it "cannot be pinned down or demarcated easily" (Jacob and Paris, 1987 referring to Wellman's (1985) definition of metacognition as a "fuzzy concept" (p. 257). However, our concern here is its definition in regards to the reading act. These definitions provide useful perspectives on the dynamics of understanding text. Falavell's (1977) definition of metacognition as "...one's knowledge concerning one's own cognitive processes and products or anything related to them" (p.232) seems to encompass our concern as a starting point. Similarly, metacognition is referred to as the knowledge and control one exerts over his/her thinking and learning activities (Brown, 1985; Brown et al. 1983; Jacobs and Paris, 1987) or "...one's knowledge of and control over his/her own thinking" (Walczyk, 1994). But in the domain of reading, I think, McNeil's (1987) definition of metacognition seems to fit accurately. McNeil (1987) defined metacognition as " being aware of what one's purpose of reading is, and how to proceed in achieving this purpose, and how to regulate progress through self-checking of comprehension" (cited in Mclain, 1993). Within these definitions, Brown (1985) identified two aspects of metacognition: first, the knowledge about cognition, and second, the regulation of cognition. In a like manner, Baker et al. (1984) mention that metacognition involves three components: it involves the reader's

knowledge about his/her own cognitive resources; the control a reader exerts over his/her ongoing activities; and one's "remedial activities" or strategies when a reading problem occurs. Each of these clusters will be presented separately in the following section.

2.5 Metacognitive awareness (knowledge about one's cognition):

Reading successfully not only requires readers to access the appropriate reading strategy when needed, but also it requires their cognitive awareness of the presence and availability of such a strategy. Brown et al. (1986) refer to Forrest & Waller, 1979 as they describe poor readers' actions while reading by saying: "...[t]hey behave the same if told to read for fun or to learn, remembering no more in the second case than in the first...". "...They read statements that are incoherent, inconsistent, or just plain untrue without indication that they have detected a problem" (referring to Paris & Myers, 1981). Brown et al.'s reference to these sources is an attempt to emphasize the importance of readers' metacognitive awareness during the reading process. In fact, according to Auerbach et al. (1997), "metacognitive awareness is key in proficient reading" (p. 240). If a reader reads an incoherent or inconsistent sentence without detecting the problem, then his "strategy schemata" is not activated (Casanave, 1988). Brown (1985) defines knowledge/awareness of cognition as "the knowledge readers have about their own cognitive resources and the compatibility between themselves as readers and the demands of a variety of reading situations" (p.502). Lack of awareness of such cognitive resources or lack of activation of this knowledge might lead to an automatic processing of the text (e.g. pronounces words correctly, moves her/his eyes along the line, stops at the end of sentences and shows even the voice intonation as he/she goes on reading). Yet, it might

happen automatically to the extent that the reader might be daydreaming and might have something else in mind other than the task at hand. Thus, Casanave (1988) considers the activation of strategy schemata of equal importance in shaping comprehension to that of formal and content schemata. Reading goes beyond automatic processing and utilizing certain productive strategies to cover the consciousness of doing so (Devine, 1993). This awareness, according to Auerbach et al. (1997), "...entails knowledge of strategies for processing texts, the ability to monitor comprehension, and the ability to adjust strategies as needed" (pp.240-241).

In many instances, I found myself just parking my car in front of my house after coming from work or coming from my children's school. But how did I get there? Which road did I take and how? I was busy thinking of something else to the extent that some of my friends thought I ignored them when they waved to me as I passed by. Did I stop at the traffic lights, did I use the right and left signals as I was turning right or left and more importantly how did I get home, not somewhere else? I often ask myself these questions when I recall these instances. I'm sure I followed and obeyed all of the traffic rules, used the brakes at certain places to stop, the gas pedal to move on, the mirrors to watch for other cars, but I did all of that automatically while my cognitive awareness was " turned off". Instances similar to these of mine might happen to readers who lack cognitive awareness of their reading strategy processes or fail to activate their cognitive strategy schemata (turn it on). This is known as "metacognitive breakdown...which makes our eyes move but our brain to channel elsewhere" (Miholic, 1994: 84). The automatic performance of a certain task (reading a text, operating a machine) doesn't necessarily mean a lack of experience. In fact, experts are more likely to perform a certain task

automatically without being conscious of what they are doing. Fluent readers, for example, tend to operate with "a lazy processor" (Rumelhart, 1980). They're fluent to the extent that their top-down and bottom up skills can proceed "on automatic pilot until [something goes wrong] to alert [their]...comprehension failure" (Baker and Brown, 1984: 365). Therefore, Paris et al. (1983) relate that current work in metacognition distinguishes between "being able to perform an action [e.g. read or drive] and understanding the procedures of the action itself" (p. 303). This understanding/awareness of the procedures (the process of reading and reading strategies being employed) is essential to detecting and repairing comprehension difficulties (Paris et al., 1983).

Knowledge of cognition also includes readers' "...awareness of the purposes and goals of reading as well as the strategies that contribute to comprehension" Meloth (1990: 792). Furthermore, knowledge is described as "declarative", "conditional", and "procedural" (Paris et al., 1983). Declarative knowledge "knowing that" encompasses, but is not limited to, knowledge of the task at hand in terms of its structure and goals, knowledge that some variables affect comprehension (e.g. exam pressure) and knowledge of one's strengths and weaknesses. Conditional knowledge refers to the reader's awareness and use of certain reading strategies and reasons for doing so. And finally, procedural knowledge "knowing how" denotes how to use different strategies successfully. However, "knowing that" a certain strategy is effective doesn't necessarily result in applying it. According to Baker and Brown (1984), a reader might indicate knowledge of certain strategy's effectiveness but "they don't use it." On the other hand, readers might not "describe how to use a particular strategy, but ...[do] use it". In the

former case, according to them, metacognitive strategy knowledge appears to precede strategy use; while in the latter, it seems to follow it (p.377).

Can this metacognitive knowledge be developed or enhanced? Yes, it can be developed, but metacognitive development seems parallel with readers' level of reading. Successful readers, according to Otto (1985), learn "how and why at the same time." On the other hand poor readers' "metacognitive development tends to lag behind their cognitive development" (p.575). Not only does poor readers' metacognition lag behind, but it gets worse if they lack metacognitive awareness. Lack of metacognitive awareness may stand as an obstacle "in the way of normal cognitive development" (p.575).

Some researchers have even developed a method to help students think about what they do while reading. Miholic (1994), for example, presented a metacognitive reading awareness inventory which consists of 10 multiple choice questions to help students develop metacognitive awareness and "provide them with a more concrete idea of important strategies" (p.84). According to Miholic (1994), it is helpful for reading teachers as well. Teachers may use it to gain insight into students' knowledge "with respect to achieving a higher level of comprehension" (p.85). Another attempt to enhance students' metacognitive awareness is represented in El-Hindi's (1996) instructional model. In her model, El-Hindi argues that students' metacognitive awareness for both reading and writing can be increased "through direct instruction" (p. 226.) Her argument was based on the results from 43 participants who were given a training program aimed at enhancing participants' metacognitive awareness in reading and writing. The results indicate that the metacognitive knowledge post-tests for reading and writing were "significantly higher than participants' pre-tests" (p.225).

To conclude, it seems that the term "metacognition" has received wide acceptance from reading educators and researchers alike and that metacognitive training gets positive results. However, this reception is not universal (Jacobs and Paris, 1987). Reading educators, according to Jacob and Paris (1987), believe that the focus on cognitive skills (for example, reflection, and planning) will be at the expense of reading itself. In other words, "they worry that [readers] will be taught *about* reading rather than taught *how* to read with fluency and enjoyment" (p. 256). Reading educators are concerned about the broadness of metacognition which covers a "wide variety of reading behaviors [that have] not been measured in any consistent fashion" (Jacobs and Paris, 1987: 256). Therefore, they seem to offer a balanced opinion that accounts for the metacognitive opponents' concerns as well as the supporters' enthusiasm. That is, although they acknowledge the research in metacognition and its contribution to a better understanding of reading, they call for more extensive research in regard to its definition and measurement. They write:

> Theories of reading have neglected cognitive aspects of strategies and self-regulated learning for too long, and metacognition offers some promise as a remedy. But the term may have been embraced and accepted prematurely. If metacognition is to be useful...it must be studied more extensively and in great detail. In particular, more attention needs to be paid to the definition of metacognitive and the creation of the appropriate measures of metacognition. (p. 257)

2.6 Comprehension Monitoring:

Although the reading process or what actually goes on in the reader's mind is hidden from the outside observer, this invisible process is extremely important to teachers and researchers alike (Block, 1986; 1992). This hidden cognitive process is believed to be controlled by readers which in turn affects their amount of understanding and learning

(Baker & Brown, 1984; Garner, 1987; Block, 1992). Research in metacognition indicates that "[s]tudents who monitor their reading comprehension, adjust their reading rates, consider their objectives, and so on, tend to be better readers" (Grabe, 1991: 393).

Aside from reading for pleasure, there are two types of reading: reading for meaning and reading for studying (Baker & Brown, 1984; Wagoner, 1983). An example of reading for studying is studying for the TOEFL in which students' concern is to practice and memorize in order to pass the exam, but little attempt, if any, is devoted to meaning. Though reading for studying is important, it is not as important as reading for meaning. Thus, I'll attempt to focus on reading for meaning since it involves an "immediate recall" (Wagoner, 1983) and is an "attempt to comprehend, and any attempt to comprehend must involve comprehension monitoring" (Baker and Brown, 1984: 355). Comprehension monitoring has been perceived to involve two component processors, evaluation and regulation (Baker, 1985; Bossert and Schwantes, 1995-96). The latter refers to strategies employed to "fix up" any breakdown in comprehension while the former refers to a reader's realization of a comprehension failure and assessment of comprehension progress (Zabrucky and Ratner, 1992; Bossert and Schwantes, 1995-96). As mentioned earlier, recent theories of reading view reading as an active process. Part of this process is making predictions and hypotheses to be tested against what one reads as an assessment of comprehension monitoring (Goodman, 1976). Regulation of comprehension, on the other hand, takes place when readers apply certain strategies such as asking questions, looking back to double check or clarify certain ideas, proceeding in their reading to resolve ambiguity or consulting their dictionary to find out word meanings. However, comprehension evaluation is a prerequisite for regulation to occur.

That is, regulation "cannot occur until after evaluation" (Bossert and Schwantes, 1995-96).

Similarly, Wagoner (1983) points out that there are two types of comprehension monitoring: knowing "about" comprehension and knowing "how" to comprehend. Knowing about comprehension is similar to comprehension evaluation since it requires readers' conscious awareness and realization of comprehension failure. Furthermore, knowing about comprehension, according to her, "appears to involve some kind of triggering mechanism or recognition by the reader of failure to understand the text message" and precedes knowing how (p.330). Once the failure is recognized, a fix-up - "knowing how to comprehend" -strategy follows which in turn varies according to the level of the comprehension failure (Wagoner, 1983). In the same vein, Baker and Brown (1984) argue that realizing a comprehension failure " is...only a part of comprehension monitoring". The other essential part of comprehension monitoring, according to them, is the reader's decision about what to do next and what kind of remedy to employ, if necessary. These important decisions or "remedial actions" will be discussed later.

Unlike Wagoner who insists on readers' consciousness of the comprehension process, Baker and Brown (1984) think it is not usually the case. They point out that it is not often true and more importantly it is not "...usually a conscious experience" (p.356). Their remarks support what has been said about the automatic processing of skilled readers and their metacognitive awareness which operates on "lazy process" (Rumelhart, 1980). Skilled readers depend on their "automatic monitoring" until something goes wrong to activate their conscious monitoring (Anderson, 1980). While skilled readers tend to operate on an automatic monitoring until a comprehension failure occurs, less-

skilled readers appear to lack self-monitoring and often fail to realize a comprehension failure (Spires, 1993). Not only do they lack self-monitoring, but also they often lack the experience to use effective strategies to resolve a comprehension problem if they are told about it (Baker & Brown, 1984; Schommer & Surber, 1986). However, Zabrucky & Ratner (1989) note that lack of development of regulation skills is not limited to poor readers. In fact, "...even some good readers identified as being able to "monitor" their comprehension... may still not have developed basic and necessary regulation skills" (p. 71).

2.7 Variables affecting comprehension monitoring:

2.7.1 The person variable:

Comprehension monitoring is believed to be affected by three variables: person, strategy, and task (Flavell, 1981; Wagoner, 1983). The person variable has to do with the reader him/herself. Flavell (1981) describes this variable comprehensively when he says: "[This]...category encompasses all the things an individual could learn or become aware of concerning himself and others as a mnemonic being" (p. 38). However, we all know that differences do exist among learners. For example, reader's awareness of comprehending or not comprehending differs from one reader to other. Not only do they differ in self-awareness, but also in their willingness to admit their comprehension failure. In this regard, Baker and Brown (1984) refer to Holt (1964) as he described the unwillingness of some students to admit their lack of comprehension "even to themselves" and their hesitations to ask questions due to their fear of appearing stupid. Aside from some students' fear of being perceived as "stupid", personal characteristics (such as closed-mindedness) and differences in cognitive styles may influence comprehension monitoring (Baker and Brown, 1984). In addition to reader's personal characteristics, previous research suggests that readers' perception of their ability as readers is echoed in their actual reading ability. For instance, in her study of L2 metacognitive awareness, Carrell (1989) found that subjects' actual reading performance correlated positively with their perception of themselves as readers.

Differences in cognitive strategy seem to favor monolingual students when compared with bilingual students. Knight et al. (1985) conducted a study with 23

Spanish-speaking ESL students and 15 English monolingual students (from the third and the fifth grade classes of an inner city-public school) to determine whether there were differences in either the type or frequency of cognitive reading strategies reported by the two groups. *San Diego Quick Assessment* was used in their study to determine students' reading levels, then they were asked to read an appropriate passage, stopping at pre-marked places to explain their reading comprehension strategies. Knight et al. (1985) accounted for the language interference by allowing the bilingual students to explain their reading process in either Spanish or English. Knight et al. (1985) constructed a table that contains 14 strategies categorized by type and summed for frequency of occurrences. Results of their study show that out of the 14 strategies, the monolingual students reported that they used "concentrating, noting/searching for salient details, and self generated questions more than did the bilingual students". They also found, among other things, that the monolinguals used significantly more strategies than did the bilinguals. Knight et al. acknowledged the fact that the bilinguals' L2 limited ability might have been a possible factor in yielding these results; yet they think that such "results are still a cause of concern" (p.432).

The aforementioned research highlights the importance of the person, the reader, who appears to play an important role in facilitating or hindering readers' comprehension monitoring.

2.7.2 The strategy variable:

The strategy variable signifies the reader's knowledge/awareness of different strategies and when to use them (Kletzien, 1992). When a comprehension problem

occurs, different strategic options are available for the reader to choose from. But comprehension goes beyond strategy knowledge to include utilization of this knowledge in a reading situation [e.g. when to use it, which strategy seems to be valuable, or even if a remedial action is necessary (Baker & Brown, 1984)]. Differences may exist between good and poor readers in terms of their awareness of strategy variables, their role in facilitating comprehension (Gambrell & Heathington, 1981), or strategy knowledge and "the actual use of strategies in a reading situation" (Kletzien, 1991: 70). Moreover, variance in regards to readers' ability to use effective strategies and when to use them seem to be found between skilled and less skilled readers (Baker & Brown, 1984; Paris, Lipson, & Wixson, 1983). For example, Olshavasky (1976-1977) studied a group of tenth grade students (24 students) as they read a short story. Subjects' strategy use was collected and analyzed in relation to three factors (interest, high and low; reader proficiency, good and poor; and writing style, concrete and abstract). Analysis of subjects' verbal reports yielded 10 different strategies employed by subjects of the study. Results of Olshavasky's study indicate that although all subjects used the 10 strategies, "...good readers used certain strategies significantly more often" (p.644). Interestingly enough, Olshavasky did not find change in types of strategies as the situation changed, but did find change in the frequency of use of strategies. She writes: " [t]he results indicate a tendency for readers to apply the most strategies when they want to comprehend (are interested), when they can (are proficient readers), and when they need to (are faced with abstract material)" (p.670).

In a similar study, Kavale & Schreiner (1979) studied above average and average students' reading levels (8 students form each group) to identify and compare the

reasoning strategies used as the subjects responded to a 40-item reading comprehension test. Analysis of students' verbal reports showed that above average students outperformed average students in the magnitude and variety of reasoning strategies use. Based on the result of this study, Kavale & Schreiner (1979) emphasized the necessity of finding "how best to teach less skilled readers to apply the reasoning strategies in a reading situation" (p. 125).

Differences in strategy use appear to exist among younger group readers as well. For example, Zabrucky & Ratner (1989) assessed children's comprehension regulation as they read inconsistent stories. The study consisted of 20 sixth-graders who read eight stories in two sessions (four in each session) and were audio-taped individually as they recall and are later interviewed. Results of their study indicate that although all subjects read inconsistent stories more slowly than the consistent ones, good readers did better in looking "back at inconsistencies during reading, to give accurate verbal reports of passage consistency following reading, and to recall text inconsistencies" (p.69).

Prior research suggests that differences in type of strategies as well as the frequency of their use seem to be in favor of monolinguals when compared with bilinguals (i.e. Knight et al., 1985; Padron et al., 1986). For example, the study of Knight et al. (1985) which I mentioned earlier, indicates that the most mentioned strategies "by monolinguals was concentrating (i.e., thinking about the story, keeping it mind, remembering it) [and none of them mentioned] ... teacher's expectations [strategy] (i.e., reading to answer questions that the teacher might ask). On the hand, they reported that the most cited strategy by bilingual children was " teacher's expectations [strategy and none of them] mentioned the strategies of imaging ... noting/searching for salient details

... or predicting outcomes" (p.432). As I noted earlier, Knight et al. (1985) were cautious enough to account for the possible influence of the bilinguals' foreign language fluency.

It is worth mentioning before I conclude the strategy variable to note that strategy training might help poor readers to improve their reading strategy awareness. Contrary to the previous studies where good readers outperformed poor readers in terms of strategy use and awareness, Ngandu (1977) collected reports of high school students who have been given remedial classes in reading for four months. Interestingly enough, the remedial reading program proved to be helpful for poor readers who adapted many of the good readers' strategies and became more aware of effective reading behaviors which promote their comprehension.

2.7.3 The task variable:

The third factor known to affect comprehension monitoring is the task variable. Though this variable seems to be accommodated within the person and the strategy variables, there is no doubt that it determines the comprehension quality and monitoring (Wagoner, 1983). Furthermore, according to Wagoner, (1983), it "...may have a critical effect upon other variables [the person and the strategy variables]"(p. 330). Flavell (1976; 1981) in reference to this variable, points to readers' knowledge/awareness, goals and demand of the task at hand. Further, he divides this knowledge/awareness into two sub-categories with regards to the difficulty level of a memory problem. These memory task problems were subcategorized in terms of:

1) function of the memory task regarding the amount of information to be remembered (easier vs. harder), and

2) demands of the memory task (e.g. some task demands are more difficult to meet than the others).

Like the other two variables, the person and the strategy variables, studies that dealt with the task variable suggest some differences between good and poor readers. For instance, Kletzin (1991) found that poor comprehenders' use of the total strategies decreases as text became more difficult. Although there was no difference between the two groups in terms of type and number of the strategies, she found that good readers used more types of strategies and used strategies more often than the poor readers as the passage difficulty increased.

In a more recent study, Zabrucky and Ratner (1992) investigated the effect of passage type on comprehension monitoring and recall of texts. 32 students (16 poor readers and 16 good readers) read inconsistent narrative and expository passages. Different measures (on and off-line) were used to examine students' look-backs and evaluation of inconsistencies. Findings of their study suggest, among other things, that poor readers' regulation of their understanding is less likely to occur when reading difficult text. Passage type did affect students' regulation and evaluation where good readers tend to look back at inconsistencies; they found that good readers seemed to regulate their understanding more as they looked back more often when "the sentences were embedded in the more difficult expository text." On the other hand, they found that "passage type had no effect on poor readers' use of look-backs to these sentences" (p. 385). They believe that there might be other variables that affect students' reading skills other than the variables they studied (reading proficiency and passage type on monitoring) such as students' prior knowledge of different genres. That is, they think that

students' prior expectation of a certain text (e.g. expository text) might direct their reading behavior. They say: " [in their study]... students may have reread expository passages more because they had come to understand that texts like these are typically more difficult [than narrative texts]" (p. 388).

2.8 L2 students' comprehension monitoring:

Studies that dealt with comprehension monitoring varied in terms of age and level of reading (e.g. children vs. adults and skilled vs. less-skilled readers, see Garner 1987). Yet, these studies tended to be conducted mostly with monolingual students despite the importance of comprehension monitoring for L2 readers (Block, 1992; Casanave, 1988). In fact, research in literacy in the United States has, generally speaking, almost confined itself to "White, middle class, or native speakers of English" communities (Jimenez et al. 1996: 90).

To date, a handful of studies have been directed to L2 readers' cognitive monitoring and its role in reading comprehension. Among these studies, is Carrell's (1989) study of two groups of students (45 native speakers of Spanish studying English and 75 native speakers of English studying Spanish). Her study aimed at investigating the relationship between readers' metacognitive awareness of different kinds of reading strategies and their reading abilities in both their L1 and L2. Results of her study indicate that unlike reading in L1 in both groups where they tended to process text "automatically" rather than "attentionally", some differences in reading in L2 were found. For example, readers of ESL of the higher proficiency level "tended to be more

global or *top-down* in their perception of effective and difficulty-causing reading strategies" (P.128). On the other hand, lower proficiency levels of Spanish as a foreign language "tended to be more local or *bottom-up* in their perception of effective and difficulty-causing reading strategies". Thus, Carrell concluded by saying "...we may be seeing metacognitive reflexes of the language *short circuit*"(p.128). Carrell was referring to Clarke's (1980) study when he mentioned the language *short circuit.* In that study, Clarke studied two groups of Spanish ESL students reading in both their native and their target languages. Students were categorized into proficient and good readers on the basis of their performance on Spanish cloze tests. Results of the Clarke study indicated that unlike poor readers, proficient readers relied more on semantic cues rather than syntactic cues as they read in Spanish. However, proficient readers' reliance on semantic cues shrunk when they read in English. Clarke (1980) doubted full transfer of L1 reading skills utilized by proficient readers to their L2 due to their limited control of the language proficiency. He calls this limited control the "short circuit" which according to him, caused good readers "to revert to poor readers' strategies". He concluded by saying " [p]erhaps there are not "good" and "poor" readers but merely "good" and "poor" reading behaviors..."(P.206). He further urged ESL teachers to integrate "traditional" and "global" teaching methods in teaching reading for ESL students.

Another study that dealt with ESL students' comprehension monitoring is that of Block (1992). Using the think-aloud method, Block (1992) explored and compared the comprehension monitoring of two groups of first and second language readers of English. The first group consisted of eight proficient native speakers and eight proficient non-native speakers. The second group consisted of six non-proficient non-native speakers

and three non-proficient native speakers. Both groups were given a passage of expository text to read and reflect on their reading process. Results of her study seem to be consistent with Carrell's (1989) and Clarke's (1980) findings which show, among other things, that differences that existed in comprehension monitoring seemed to be more related to reading proficiency than the language background. Although readers of both groups seemed to recognize when a problem existed; "the proficient readers identified the problem's source more frequently and more explicitly than did the less proficient readers"(p.335) and seemed to take an action such as ignoring an unknown word they considered unimportant. In term of verbalizing, proficient L1 readers seemed to do more than proficient L2. On the other hand, she found that the less proficient readers use the process incompletely. Even when they recognize a problem, they don't know what to do next. As an outcome of this study she criticized the traditional method in teaching reading to L2 students along with the material of language-specific trends. She writes:

> ...the results of this investigation of monitoring run counter to the common sense wisdom of the reading classroom. For years, ESL teachers have sought to predigest printed material for students believing that comprehension depends on understanding of all language features of the text. Thus, reading traditionally enters the ESL classroom late and texts used are most often adapted so that students will understand every word they read. When graded texts are not used, difficult vocabulary, structure, and concepts are pretaught so that the process will be smooth. This investigation reveals that the process is not a smooth one and suggests that, by chewing up the text for students, we are distorting the process and not preparing them to eat on their own. The proficient L2 readers in this study did not have to understand all the words or structures to understand what they read. Part of the strength of their reading was in being able to decide which problems they could ignore and which they had to solve. (p. 337)

In a more recent study, Jimenez et al. (1996) conducted a study aimed at exploring the question of how bilingualism and biliteracy affect metacognition by examining the reading process of eight bilingual Latina/o children who were identified as successful English readers. For comparison purposes, Jimenez et al. (1996) included two smaller samples (three monolingual Anglo successful readers and three bilinguals Latina/o less successful English readers). Data were gathered by using unprompted and prompted think alouds, interviews, a measure of background knowledge, and passage recalls as the participants read varieties of instructional texts. Results of their study showed that successful Latina/o readers tended to resolve comprehension problems as they identified them by using different strategies such as "invoking prior knowledge, inferencing, questioning, using context, and monitoring" (p. 106). Unlike the successful readers, the less successful readers according to Jimenez et al. (1996), used fewer strategies and "were often less effective in resolving comprehension difficulties in either language" (p. 91). Moreover, successful readers showed awareness of the relationship between Spanish and English and used it to enhance their reading comprehension compared to less successful readers who did not take advantage of their knowledge of Spanish to enhance their reading comprehension.

In a similar study, Carrell et al. (1993) used the cloze test to examine the reading strategies of first and second language readers (60 native speakers of Chinese and 28 native speakers of English who provided baseline data). Chinese subjects were given two cloze passages (one in Chinese and one English); the native speakers were given the English cloze passage only in which each 7th word has been deleted except for the first sentence, and were instructed to fill in the blanks. Among the results of their study, they

found that the Chinese didn't use the same strategies in Chinese and English clozes. However, with the exception of some differences, subjects' reading strategies appeared to be similar in English. Since the Chinese students used different strategies in performing the task in Chinese (L1) and in English (L2), they indicate that their

> ...research supports that of Anderson (1991), showing that the picture of reading strategy use is not only a complex one, but also further showing that what seems to be important is that being a good reader means the ability to use strategies flexibly...as required by the linguistic features of the given language in which the reading occurs. (p. 963)

2.9 Verbal Reports:

Reading research directed to studying the cognitive process has emphasized the importance of verbal reports/think-aloud protocols (researchers use both terms interchangeably) as a useful tool to gain more information about readers' internal states. Thinking-aloud protocols (developed by Newell and Simon 1972) require readers' periodic "overt" reflection on their "covert" mental processes as they engage in the task of reading or writing (Ericsson and Simon, 1980; Garner, 1982; 1987; Afflerbach and Johnston; 1984; Pressley and Afflerbach, 1995). Therefore, "...think-aloud protocols provide a direct view of a reader's mental activity, a kind of window into those processes which are usually hidden" (Block, 1986: 464).

Ericsson and Simon (1980) classify verbal reports into two types: *retrospective* and *concurrent* verbalizations. The first refers to subjects' verbal report of their cognitive process which took place at an earlier point of time while the second refers to the verbalization of the current cognitive process. In other words, the retrospective type

requires subjects to verbalize their cognitive process after finishing the task (e.g. after reading a passage or part of it) and the concurrent type requires a simultaneous verbalization of the cognitive process and the performance of the task. Similar to Ericsson and Simon's (1980) classification, Block (1986) identifies two types of verbal reports to obtain "process-oriented" data: (a) retrospective and (b) introspective reports and think -alouds which are the same as *retrospective* and *concurrent* verbalizations. While Block's classification is similar to that of Ericsson and Simon's, Hayes and Flowers (1983) distinguish between two types of concurrent verbalization: directed reports and think-aloud protocols. The latter, according to them, requires subjects to report on every thought that comes to their mind while in the former subjects are directed to report on specified behavior while performing the task.

Generally speaking, verbal reports are achieved by asking subjects to stop occasionally and describe their thinking process as they perform the task (Pressley and Afflerbach, 1995). In doing so, they are expected to perform at least two tasks: the reading or writing task and the verbal reporting task (Afflerbach and Johnston, 1984; Starks-Martin, 1996). Studies that have used think-aloud protocols mostly ask subjects to read texts and stop every now and then to reflect on how text is being processed and understood, how a problem (e.g. word deletion or sentence inconsistencies) is being solved, how word meaning is being guessed from the surrounding context and how comprehension questions are answered (see Afflerbach and Johnston, 1984). Ericsson & Simon (1980) name three ways of probing subjects' thinking and consequently their verbal reporting:

1. to instruct them to think aloud or talk aloud (heeded information may be verbalized either through direct articulation or by verbal encoding of information),

2. through concurrent probing , or

3. by retrospective procedure.

Researchers who have used the think aloud method in studying students' reading/writing processes argue that they favor this method for a number of reasons. First, important information about subjects' metacognitive strengths and weaknesses has been captured by the implementation of this method (Block, 1986; 1992; Carrell; 1984; 1989; Garner, 1982; Hays and Flower, 1983; Padron, Knight, & Waxman, 1986, among others). Second, Ericsson and Simon (1984) believe that the think-aloud procedure, when appropriately used, allows researchers to access and view invisible cognitive processes that can't be viewed otherwise and thus provides direct evidence about processes. Third, in reading, think-aloud protocols "allow access to the reasoning processes underlying higher level cognitive activity" (Afflerbach and Johnston, 1984: 308).

In spite of these assets, acceptance of verbal reports is far from universal (Afflerbach and Johnston, 1984; Fawcett, 1993). Critics of verbal reports question the validity of data gathered by this method, especially the concurrent reporting, claiming that it may interfere with the subjects' reading process (see Garner, 1982). However, Olshavsky (1976-77: 662) offers a solution to this concern by saying that this interference "can be minimized by giving the subjects a practice session" prior to the actual verbal reporting.

Another limitation of verbal reporting, defined by Garner (1982), is the accessibility of some cognitive processes. According to her, automated processors that are below "conscious level" are beyond reporting as in the case of expert readers. That is, what might be available to the novice readers might not be so to the expert readers as their cognitive control moves to an automated level.

A final limitation that can be added to the previous concerns is the researchers' influence on the subjects' verbal reporting. In other words, critics of the think aloud method are concerned that the researchers' comments/questions, especially in interviews, may direct the outset of the activity and consequently sway the findings. In this regard, Olshavsky (1976-77) again suggests that the researcher should not say "anything while the subjects [are reading and verbalizing]" (p.662).

Despite these methodological limitations, verbal reporting has made its contribution to our understanding of the cognitive processes (Afflerbach and Johnston, 1984; Pressley and Afflerbach, 1995; Kavale and Schreiner, 1979) and will continue to provide a direct access to the readers' invisible cognitive processes (Ericsson and Simon, 1980).

Chapter 3

3 Methodology

3.1 Introduction:

This study comprised two methodological research approaches: the survey research method and the qualitative research method. Therefore, the current chapter starts with the rationale behind the selection of these research methods. Second, the population of the study and the materials that have been used will be presented. Following this section is a representation of the procedures and instrumentation used in collecting the data and finally, the procedures of the data analysis.

3.2 Rationale:

Despite the difficulty of combining the quantitative and qualitative approaches in one study, it is common and sometimes desirable to do so (Bogdan et al., 1982). With that in mind, the present study attempted to combine the two approaches: whereas phase one surveyed students' perceptions about their metacognitive awareness, the second phase was an attempt to describe their actual reading.

The two approaches differ in regards to the data collection and analysis. That is, while quantitative research relies on survey and uses statistical software packages to analyze and present its findings, qualitative research, on the other hand, uses different means of data gathering (i.e. interviews, observations, think-aloud protocols) and applies

descriptive analysis instead of statistical analysis (Roy, 1991; Bogdan et al., 1982). Although the two methods (quantitative and qualitative) appear to oppose one another, they can, according to Roy (1991) " be used to compliment each other" (p. 105.)

Having said that, it should be acknowledged that all research methodologies have their problems and inadequacies. Hence, the combination of these two methodological approaches in the current study was an attempt to compensate for the inadequacies of each.

3.3 Participants:

The total population of phase one of the study was ninety fourth year college students distributed among two main universities, King Saud University and Imam Mohammed bin Saud University, both located in Riyadh, the capital of Saudi Arabia, and their branches at Abha city which is located in the southern part of Saudi Arabia about one thousand kilometers from Riyadh (see Table 3.1). This population is believed to be homogeneous where all of them were English majors, were all in their last year, were in the same age group, with the exception of a few cases, and to the best of my knowledge, all had the same background educationally and culturally. Educationally speaking, as I mentioned in the first chapter, the Saudi educational system is controlled and operated by the Saudi Ministry of Education which distributes unified textbooks for the whole kingdom (from 1st grade in elementary schools to 3rd grade in high schools). Teachers in all grades are instructed to follow certain syllabi (Al-Arfaj, 1996; Aljamhoor, 1996) and sometimes final exams are controlled, too (e.g. 3rd grade in high schools). As far as subjects' background in English is concerned, they began studying English in their 7th

grade four times a week (each period lasts for 45 minutes), English textbooks in each level are the same in the whole country, and they all majored in English after the first year of college. Culturally speaking, all subjects are Saudis and share the same cultural background.

Out of the total population, twenty participants were involved in the second phase of the study. The selection of the second group was determined by the participants' scores in the reading comprehension test. In other words, ten students who have achieved the highest scores representing the skilled readers (SRs') group and ten students who received the lowest scores representing the less-skilled readers (LSRs') group were chosen to participate in the second part of the study. SRs' raw scores fell between 13 to 8 while the LSRs' scores fell between 1 to 5 (see Tables 3.1 and 3.2). Percentage wise, students' scores in these two groups fall either in the upper 25% quantile (as in the case of SRs) or in the lower 25% quantile to be considered LSRs. More will be said about this scale in part III of the data analysis.

Table 3-1: Skilled readers' reading comprehension scores

Case number	score
1	13
2	12
3	12
4	12
5	11
6	11
7	10
8	10
9	9
10	8

Table 3-2: Less-skilled readers' reading comprehension scores

Case number	score
11	1
12	1
13	1
14	1
15	2
16	2
17	3
18	3
19	4
20	5

3.4 Sampling:

The following steps were taken in the overall sampling of the study. 1) the Saudi universities that have English departments were sorted out. These universities were as follows: King Saud University, King Abdulaziz University, Imam Mohammed bin Saud University, and Um Alqura University. Two criteria were involved in listing these universities. First and foremost, they all focus on preparing their students to teach English as a foreign language after graduation. Each university uses a wide spectrum of curriculum, which aims at enhancing their English background as well as their teaching abilities. Curriculums of English departments in Saudi Arabia focus on, but are not limited to, reading, writing, listening, and speaking, as well as other areas of inquiry related to their English major. Second, each university has a branch in a different province of the Kingdom, which helped in including a wide range of population. However, King Abdulaziz University and Um Alqura University were excluded from the

list due to the time needed to obtain their official permission to conduct the study. That is, the long routine and the time needed to get their permission was a major obstacle that prevented the inclusion of these universities since students were approaching the finals and the time was running out. Therefore, the researcher focused only on the other universities and their branches. 3) Although two universities and their branches were included in the study, classes were assigned randomly. In other words, the reading comprehension test as well as the metacognitive questionnaire was administered to random groups of fourth-year English major students in each university. This kind of sampling is called "cluster sampling" (McBee, 1993;) and according to McBee, "...subjects [in cluster sampling] are randomly selected in equal numbers from naturally occurring groups, such as a school system in the northern section of the state or groups in certain neighborhoods of the city" (p. 6).

3.5 Materials:

Carrell's (1989) Metacognitive Awareness Questionnaire (MAQ) translated into Arabic and a standardized reading comprehension test were administered by the researcher to each group of students. The reading comprehension test was taken from an older version of Michigan Test of English Language Proficiency (MTELP) (see appendix E). The MTELP test consisted of four passages and twenty multiple-choice questions (five for each passage), but students were asked to answer three passages only instead of four, due to the time limitation. Students who participated in the pilot study were able to finish only three passages along with the MAQ within the allowed time (45 minutes) and

based on that the fourth one was eliminated in the actual study. The twenty students who participated in the second part of the study were given a passage to read and were instructed to stop at pre-marked places (five places altogether) and reflect on their reading process (see the appendix E). The passage is titled "Art and Humor" and was taken from Reading Between the Lines, a reading book intended for intermediate to advanced non-native speakers. Subjects, I assumed, would be motivated to read this type of passage since it talks about an interesting topic, "Cartoons", and more importantly it was of a moderate difficulty. That is, the passage was not so easy as to bore SRs and was not so difficult as to frustrate the LSRs. Moreover, I made sure that this book was not among the curriculum of any of the above mentioned universities.

3.6 Procedures and Instrumentation:

3.6.1 The pilot study:

Both the MAQ and the reading comprehension tests were pilot tested prior to the data collection. That is, the final version of the MAQ and the MTELP were given to four undergraduate MSU students to check their clarity and provide any comments. All of them had almost the same background as the intended subjects of the actual study. All are Saudis, have already passed the English Language Center placement test, and all were taking academic courses at the MSU. As for the MTELP, they needed more than forty-five minutes to finish the four passages. But they were able to answer three passages in about thirty minutes. Therefore, the last one was eliminated since the researcher had only forty-five minutes to administer the MTELP and the MAQ. Scores of the MTELP pilot

test varied among the four participants, as did their comments. Two students got 10 correct answers out of 15, one student got 14 out of 15 and the fourth one answered four questions correctly. Their comments in regards to the test difficulty were easy (1 student), moderate (2 students), and difficult (1 student). Hence, the test was believed to be an appropriate measure for the intended study with the exception of its length, which was solved by eliminating the last passage. As far as the MAQ is concerned, the pilot students were confused about the first and the last options used in the questionnaire namely: the use of strongly agree, agree, strongly disagree, and disagree options. They suggested the use of a three-point Likert scale format instead of the five-point Likert scale since the terms "strongly agree" and "strongly disagree" are not widely used in Arabic and more importantly they are confusing. Though these terms are common in studies conducted in the English language, they are somehow less familiar in the Arabic language. So, their recommendation was taken into consideration and the final format of the MAQ used a three-point Likert Scale: 1) Agree, 2) Neutral, and 3) Disagree. [1]Moreover, they suggested adding an open-ended question at the end of the questionnaire to allow subjects to report any reading strategy that has not been mentioned in the survey. This recommendation was taking into consideration also and a final open-ended question was added.

3.6.2 Development of the MAQ:

The fact that the MAQ was written in English provided the challenging task of translating it into Arabic with a minimum change in both its content and form. It was

[1] Only three informants responded to this question by saying "no"; thus, it was ignored during the analysis.

necessary to modify it in order to fit the Arabic language characteristics as well as the subjects of the study. This modification aimed at getting as much as possible of Saudi students' perception about their English reading process. But prior to this modification, Dr. Carrell was contacted by e-mail and later by phone to get her permission to adapt her questionnaire. Her verbal permission was given over the phone and she requested a copy of the Arabic translation when finished.

The format of the Arabic version is different from that of the English. Aside from the difference in the script, the numbering of the items was modified. First, an example was added after the introduction to give the subjects an idea of what they were supposed to do. Second, the English version starts with number one and ends with number thirty-six while the Arabic version starts with number one and ends with number eleven. Numbers one through six are the same as the English version. However, numbers seven through ten were subdivided into subcategories. For example, number seven contains five subcategories, number eight has nine, number nine carries eight subcategories and so does number ten. The subdivisions of these four items plus the first six items equals thirty six which is similar to the English version. The subdivision in the Arabic version was believed to be helpful for the subjects of the study to answer all questions without confusion and was based on recommendations volunteered by four readers, who kindly reviewed the first draft of my translation. All of those readers are bilingual and have an outstanding grasp of Arabic and English. As a matter of fact, one of them is an Arabic instructor while the other three were Ph.D candidates in different fields.

A copy of the first draft was given to each one of the volunteer readers to evaluate it in terms of quality, clarity, and translation accuracy. In addition to the format

suggestion, a few changes were recommended. For instance, they pointed out the inconsistency of the Arabic translation of the word "silent" which appeared in two different words. Although the meaning of the two words is the same since they are synonyms, they thought that it might confuse the informants. Other suggestions were the deletion of some words or phrases such as in item two and six since the meaning was clear without them, use of different words' synonyms in the third and the fifth sub-categories of question number seven, and the deletion of the Arabic translation of "concentrate on" from the sub-categories of question number eight and the translation of " the difficulty" from the sub-categories of question number nine since these words were mentioned in the core of each question. They were concerned also about the use of five options in each question and the confusion that they might cause in the actual setting. This concern was confirmed in the pilot study, as I mentioned earlier, and a three-point Likert scale was used instead of five. Finally, they suggested adding an open ended question at the end of the questionnaire to allow subjects to report any reading strategy that they felt or perceived to be effective but which was not mentioned in the questionnaire. These suggestions were taken into consideration in the second draft that was given to the pilot students except the switch to a three-point scale Likert scale. The final version, as it appears in the appendix, accounted for the recommendation of the switch initiated by the four readers and confirmed by the pilot students. Although these necessary modifications were made, I think the content and the meaning of the original questionnaire were kept to a maximum.

Finally, it should be mentioned that the original sub-division of the questionnaire was adapted in the final data analysis. For example, Carrell's (1989) four categories were

used in the final analysis. In her analysis, Carrell (1989) divided her thirty-six item questionnaire into four categories. Statements 1 through six aimed at gathering information about subjects' perceived ability to read in English, statements 7 through 11 related to subjects' repair strategies, statements 12 through 28 deal with reading strategies perceived by the reader to be effective strategies and 8 statements related to aspects that make reading difficult. As I mentioned earlier, this division was used in the final analysis due to its complete and precise coverage of these four categories.

3.6.3 The Demographic Questionnaire:

A one-page demographic questionnaire was designed by the author to collect more information about individual subjects. The first set of questions aimed at gathering some optional information such as the subject's name and age, and college. While the first part of the demographic questionnaire was optional, the other part was not. The subjects were instructed to answer the rest in the hope that these questions would give some answers to a specific research hypothesis or help in comparing subjects' scores and their answers to these questions. In question number five, for example, students were asked if they do extra readings outside their classroom and what kind of reading. If the subject's answer was yes, then another question follows to see what kind of outside reading he is engaged in (e.g. short stories, books, magazines and newspapers, novels, or something else as a last choice) and subjects were instructed to mark whatever applies. It was hoped that the researcher might find a relationship between students' answer (whether yes or no) and their reading comprehension scores. The sixth question aimed at students' self-judgment as readers. That is, on a scale from one to ten (where 10

represents an advanced level and one is a beginning level) students were asked to put a circle around the number that describes their level of reading. It was assumed that the skilled readers are more confident about their reading ability in contrast to the non-skilled readers (see appendix C).

3.6.4 Phase I (the survey part):

The researcher visited each university, or its branch, at least two times to administer the reading comprehension test and the MAQ. Students were given the following:

1- a consent letter to read and sign if they were willing to participate,

2- the reading comprehension test MTELP, and

3- the MAQ

Subjects who agreed to participate were given 30 minutes to answer the MTELP and were instructed to turn them in within that time. After 30 minutes, the MTELP tests were collected so subjects would not go back to them later on. The remaining 15 minutes were devoted to answering the MAQ but students were allowed to take extra time if they needed to. Moreover, subjects were encouraged to ask the researcher if they did not understand any of the MAQ.

3.6.5 The reading comprehension test MTELP:

At the early stage of the study the researcher planned to adapt an older form of the English Language Test (ELT) at Michigan State University. The ELT placement test is developed by the English Language Center and is intended for determining foreign

students' language competence and whether or not intensive English training is needed for Michigan State University students before they enroll in academic courses. However, the ELC test is not popular compared to that of the University of Michigan (MTELP) which is widely known for its reliability and validity. So, the researcher decided to contact the English Language Center at the University of Michigan for a permission to use one of their tests. Unlike the TOEFL test, the MTELP test is rarely used in Saudi institutions and the chance of Saudi students' earlier exposure to it is slim. But as an extra precaution, form Q of an older version- each version consists of different forms- was chosen to minimize this slight chance more.

This part, as I mentioned before, aimed at evaluating subjects' reading competence and determining if any relationship existed between subjects' reading scores and their reading strategies or their answers to the survey questionnaire. Moreover, it was hoped that the reading comprehension test would give the researcher an idea about the subjects' reading fluency and based on their scores, the researcher would determine the subjects of the second part of the study.

The test consists of four pages. The first page is general instruction that shows students how to answer the test with two short examples. The other three pages contained the three passages where in each page a passage (approximately 200 words in length) is introduced followed by five multiple choice questions. Students were instructed to answer all three passages within thirty minutes and turn it in to the researcher before they start answering the MAQ. The topics of these passages varied where the first one talks about the Scottish Causeway, the second is about memory function in human brains, and

the third discusses the Jazz pianist "Jelly Roll Morton". (See the appendix F for more details)

3.6.6 The metacognitive awareness questionnaire (MAQ):

Originally, P. L. Carrell developed this questionnaire for her 1989 study "Metacognitive Awareness and Second Language Reading". It aims at collecting information regarding subjects' conceptualization about their reading strategies. It contains thirty-six statements divided into four major categories: Confidence, Repair strategies, Effectiveness, and Difficulty. This questionnaire was translated into Arabic to eliminate the possibility of the language difficulty factor.

The formatting of the Arabic translation, as I mentioned in the beginning of this chapter, looks different from that of the English version though the meaning of the statements was kept to a maximum. The first six statements attempt to highlight subjects' perceptions about their reading ability (the confidence category). Following these six statements are another five various statements (7-11) which aim at exploring subjects' conceptions of their repair strategies when comprehension failure occurs. As far as the effective category is concerned, the questionnaire contains 17 statements to cover the following subcategories: Sound-letter (3 statements), Word meaning (5 statements), Text gist (2 statements), Background knowledge (2 statements), Content details (2 statements), Text organization (2 statements), and Sentence syntax (1 statement). The fourth category contains 8 different statements as an attempt to gather more information about subjects' concepts of what makes their reading in English difficult. Again different subcategories were covered: Sound-letter (3 statements), Word meaning (1 statement), Text gist (1

statement), Background knowledge (1 statement), Text organization (1 statement), and Sentence syntax (1 statement). Each one of these thirty-six statements was followed by three options: 1. Agree 2. Neutral 3. Disagree and subjects were instructed to circle one option only which they believe fits the statements the most. It must be mentioned, however, that subjects were given an example at the beginning of the questionnaire, which explains how to answer the following thirty-six items. Furthermore, they were highly encouraged to ask the researcher if they had any difficulty understanding any statement. A copy of both the Arabic and the English version is included in appendix B and D for more details.

3.6.7 Phase II of the study:

Twenty students participated in part two of the study. Those individual cases represent two distinct groups, namely: the SRs as one group and the LSRs as another group. Although the population of phase one of the study was random, participants of the second phase were selected based on their performance on the MTELP. Subjects were encouraged to write their actual names on the MAQ as well as on the MTELP forms to enable the researcher to meet them later on to complete the second part of the study. Subjects were ensured that their identity would be kept confidential and would not be revealed. Furthermore, they were told also that they had the option not to write their names if they wished. Some of them exercised this option and did not write their names, so they were eliminated from the final selection even if they happened to fall in either category (high score achievers or low score achievers). Low and high score achievers were met individually to complete the second part of the study (ten participants of each

category). The researcher did the following to maximize the quality and accuracy of participants' verbal reporting:

First, the researcher tried his best to explain and demonstrate the think aloud protocol procedure in one setting at each university/its branch (usually in the second day), and then met each case individually for the actual recording. However, a few subjects were not present and the researcher had to explain and demonstrate the think aloud to those cases individually. It should be mentioned, however, that the researcher rehearsed a lot before conducting the study. That is, based on the pilot study and the recommendations of those who participated in it, the researcher did a lot of practice to the point that almost the exact words were repeated in each demonstration. A one-paragraph excerpt, taken from Ahlan Washlan was read by the researcher to demonstrate the think aloud protocol procedures. Ahlan Washlan is a monthly magazine, which is published by the Saudi Airlines. The demonstration and explanation of the procedures lasted about ten minutes and were repeated when needed.

Second, the participants were given a pre-marked passage to read and stop to report their cognitive processes at every red dot, five stops altogether (see appendix E), but were encouraged to report them whenever they wanted to. To make sure that subjects understood the procedure, each one was given a short paragraph to practice before he was asked to do the actual verbal reporting. Third, participants were encouraged to elaborate more if they provided a brief or unclear report during the recording session. However, the researcher made sure that the provided comments were noncueing, nonspecific ones (Kletzien, 1992; Garner and Kraus, 1981-1982), such as "Can you explain more or can you tell me more" or " What do you usually do" (when faced with a reading problem and

did not report what he was doing) and a comment like Garner's (1987) "Remember, tell me what you are thinking" when a participant fell silent. (p. 69)

Fourth, the effect of the non-native language on participants' verbal reporting was kept to a minimum by encouraging them to use their mother tongue language. In other words, knowing that the language proficiency might hinder or interfere with the ability to state their reading strategies as they were reading (Padron et al., 986), participants had the option of using the language of their preference, either Arabic or English, but were encouraged to use their Arabic language to eliminate the language proficiency variable.

Finally, the researcher tried to minimize participants' nervousness by chatting with them for a while before the actual recording took place by doing three things:

a. General topics such as "weather", "school", "future plans" were usually brought up to break the ice and minimize any tenseness or discomfort on the participants' part.
b. A small recording device was used in all recording sessions.
c. Participants were ensured that their reading performance wouldn't be judged or graded, that their identities wouldn't be revealed, and they were encouraged to act naturally and ignore my presence.

3.6.8 Data analysis procedures:

The researcher analyzed the data as follows:

1. SRs and LSRs' actual use of different reading strategies were compared;
2. SRs' and LSRs' actual and reported reading strategies were examined in terms of their similarities, differences, neutrality, and consistencies or contradiction. Presentation of this section depended on the availability of these strategies in the

actual reading. Descriptive-based analyses were used in analyzing 1 and 2 (the qualitative data);

3. The collected questionnaires were quantitatively analyzed. More specifically, attention was paid to SRs and LSRs' questionnaire with some reference to all subjects when further comparison was needed. The researcher used different statistical methods in analyzing the data (e.g. percentage, regression, correlation test and t-test in the quantitative analysis).Tables and charts were used to represent the results of this study.

Chapter 4

4 Data Analysis

4.1 Introduction:

This part consists of three sections: section 1 examines skilled and less-skilled readers' actual reading strategies (their think-aloud protocols) and analyzes them by comparing their usage of different strategies as they encountered a reading difficulty. Section II deals with individual cases' actual reading strategies and compares them with their reported ones. Finally, section III represents the quantitative analysis of all informants' responses to the Metacognitive questionnaire.

4.2 Part I: Analysis of Skilled and Less-skilled readers' actual reading strategies

As stated earlier, this part is a comparison of SRs and LSRs' actual reading strategies. The task of this comparison was not an easy thing to do due to uniqueness of informants' reading strategies. Therefore, the researcher studied each transcript individually then compared only common strategies that were applied by at least one of each group. Two things were considered during the analysis: first, how reader/s went about solving reading difficulties if any, and secondly, what kind of strategies they employed either in solving that reading difficulty or in their reading as a whole. Under the reading difficulty, the following categories will be discussed: comprehension difficulty, syntactic difficulty and vocabulary difficulty. The following categories of

reading strategies will be examined: ideas' connection, imaging/use of past experience, monitoring, prediction, and questioning. Charts are used, when necessary, to provide a clearer picture.

Analysis of the actual reading strategies of skilled and less-skilled readers reveal an overlapping use of top-down and bottom-up reading models. That is, in the following analysis, we can see that readers from both groups used a mixture of both reading models during their actual reading. This overlapping, I think, is a sign of their interaction with the printed material and will be highlighted in the second part of the analysis as we look at informants' overall use of local and global strategies. Earlier in the discussion of the literature, Stanovich (1980) presented a model of reading known as the Interactive Compensatory Model. In this model, Stanovich acknowledges other researchers' definition of interaction (e.g. Rumelhart (1977) as it suggests some individual differences during the interaction process. However, he believes that this interaction between higher and lower information is not balanced; rather it is regulated by individual readers' needs. It seems that the findings of this study support Stanovich's view of reading interaction. For example, we can see that in some cases less skilled readers used top-down strategies more than skilled readers; and in other cases skilled readers relied more on their skills of utilizing higher information and outperformed less-skilled readers in this regard.

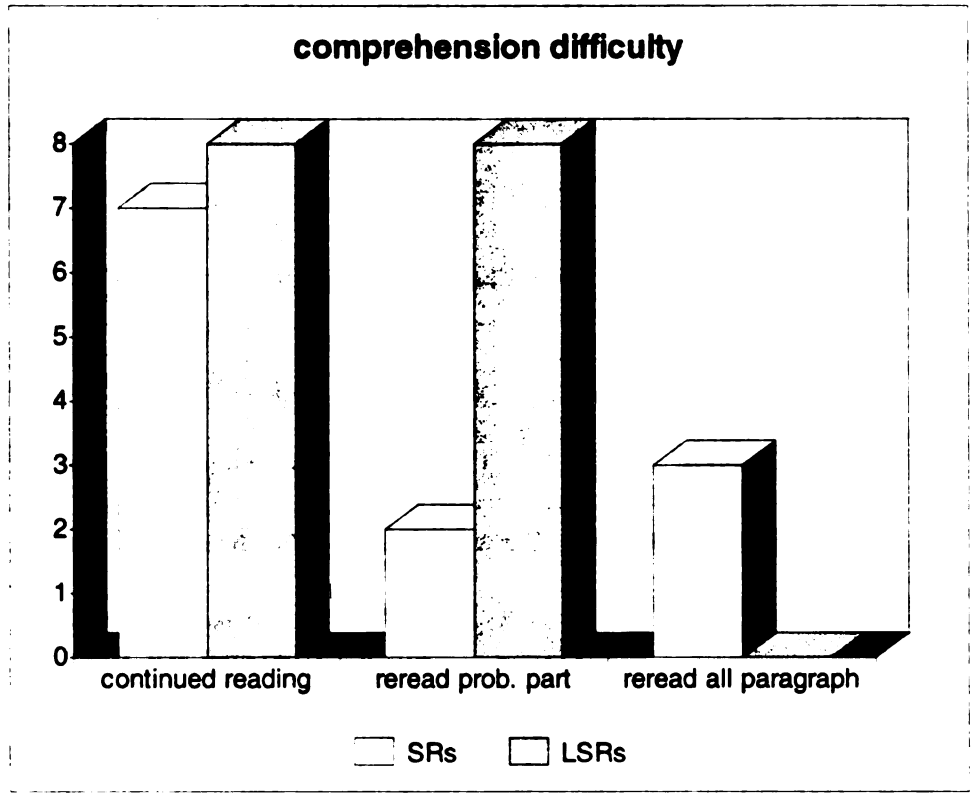
The following analysis starts with the first category (the comprehension difficulty), then proceeds to cover the rest of the aforementioned categories.

4.2.1 Comprehension difficulty:

The reading comprehension difficulty category (Chart 4.1) marks the first example of what has been said earlier regarding the use of mixed strategies. In this

category, informants varied in the way they chose to solve their reading comprehension difficulty.

Chart 4-1: Comprehension difficulty



While SRs and LSRs appeared to favor the first strategy as they continued reading, it is clear that they differed in regards to the other two strategies. As can be seen in Chart 4.1, both groups appeared to apply an effective reading strategy as they continued reading hoping that their comprehension difficulty would be cleared later on. Results show that LSRs were slightly higher in applying this method (8 times compared to 7 times in the case of the SRs). Though the two groups applied this method effectively, differences were found among those who chose to apply different methods. For example, the LSRs were found to do one of two things: they either reread the problematic part or they continued reading but none of them reread the whole paragraph. On the other hand,

SRs went back and reread the whole passage 3 times compared to none who did this in the case of LSRs. SRs reread the problematic part less than did the LSRs 8 times compared to 2 times in the case of the SRs.

4.2.2 Discussion of the comprehension difficulty:

Informants' reading comprehension difficulty varied from one subject to another[2]. Some had difficulties understanding one sentence/phrase and others faced some difficulties comprehending a whole paragraph. The following informant, for example, had a problem understanding a whole paragraph and this is how he dealt with it:

> "... I read the second paragraph twice"
> *Why?*
> I felt I did not understand it very well, so I decided to read it again
> *Could you describe your reading process in both readings?*
> The first time was kind of fast where I just tried to read everything fast but the
> second time was slower than the first time where I concentrated more.
> *What made you concentrate more?*
> Sometimes when I feel I don't understand, I repeat with more concentration until I understand especially when there are difficult words or the structure is difficult.
> *Did you reread the difficult part only or the whole paragraph?*
> When there is something causing comprehension difficulty for me, I reread the
> whole thing...I prefer to reread the whole thing rather than a specific sentence or word.

A first reaction to his comments suggests that he applied a top-down strategy as he skimmed the second paragraph and then he reread it with more concentration. However, his later answers to the researchers' question "what made you concentrate more?" reveals that he follows a text-based strategy once he faces a meaning or a

[2] No reference to either the SRs nor the LSRs was made in this example as well as the following examples for two reasons: first, comparison between them (percentage/and or number-wise) preceded the presentation of these examples; and second, not necessarily the same problem was encountered by one of each group (some were encountered by SRs, some were encountered by LSRs, and some were encountered by both groups). Thus, students' reports were presented with no reference to their group.

structure difficulty. Furthermore, he might have had a problem understanding a sentence or part of a sentence, yet his policy was to reread the whole paragraph until he understood "everything". He seems to apply the rereading strategy extensively, which might be at the expense of other effective strategies (i.e. getting the overall meaning of the paragraph). Jimeneze et al. (1996) referred to their less successful Latina/o readers as having used fewer strategies. Rereading, in this case, appears to be part of this reader's reading habits even when there was no comprehension difficulty. Let's see how he approached the first and the last paragraphs and what he said in regards to his rereading:

> I read this sentence twice " This may be the reason that many of them turn their
> half-opened eyes to the comics section of the newspaper as they sip their first cups of coffee of the day."
> *Why?*
> Because I think it contained the main point and I wanted to double check my understanding of it.
> *So, you reread it twice because you thought it contained the main point of the paragraph not because you faced any difficulty?*
> Just because it contained the main point of the paragraph.
>
> *At the end of the passage he reread the last paragraph three times because it, according to him, contained the summary of the whole passage. He put it:*
>
> I reread the last paragraph three times
> *Why? What seemed to be the problem?*
> The last paragraph is always a summary of the whole topic, so I usually pay more attention to it and in most cases, I read it more than two times. Repeating here helped me to understand what has been said in this paragraph and helped me to connect it with other ideas which have been mentioned earlier.

It is clear that this reader was monitoring his comprehension and was trying to connect ideas, yet the body of the text, according to his comments, seems to receive little attention compared to the first and the last paragraphs. This might be attributed to his

perception of the task at hand which according to Wagoner (1983) affects the readers' comprehension quality as well as the comprehension monitoring itself.

While the previous reader reread because he wanted to connect ideas and understand what has been said earlier, another had a problem with a single phrase in a sentence but couldn't locate the source of the problem without the help of the researcher. Here is what happened:

" Cartoons also make people laugh at their own personal worries. Young people who are not always sure of how to act can always smile at their awkwardness ...awkwardness...old people whose grown children pay little attention to them can chuckle at their neglect and loneliness."...ahhh..."old people ...and loneliness."

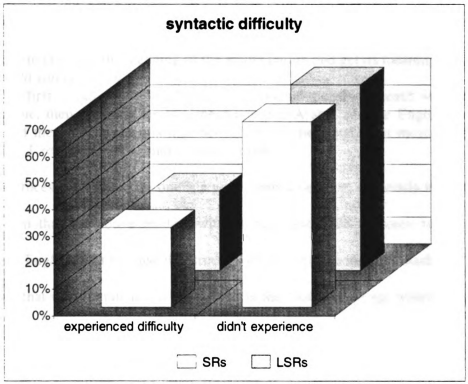
You read this sentence twice why?
I tried to understand it but I couldn't.
What seems to be the problem?
I couldn't get its meaning.
Which part of it, or was it the whole thing?
" can chuckle" I don't know what he means by " chuckle" and it seems to be a key word.
What do you want to do?
Check it up in the dictionary ...yeah...now everything is clear

It is obvious that the above reader was concentrating on the meaning of what he read at a word level as he concentrated on one sentence and later it turned out to be one word. This reader seems to fall into the second category of Devine's (1993) classification of readers (sound-, word, or meaning-oriented). Not only did he appear to be a word-meaning level reader, but also he was not successful in selecting the appropriate strategy. Thus, he could have gone on and on in his rereading, thinking that he had a comprehension difficulty while, in fact, he had a meaning difficulty; this difficulty was solved immediately after looking up one word in the dictionary.

4.2.3 Syntactic difficulty:

As far as the syntactic difficulty is concerned, Chart 4.2 indicates that a few informants from both groups experienced some kind of difficulty with the structure of the given passage (30% of each group).

Chart 4-2: Syntactic difficulty



4.2.4 Discussion:

Analysis of informants' think-aloud protocol suggests that word hyphenation caused some reading difficulty where some informants wondered about its presence in certain places in the passage. For example, some informants wondered about the use and

necessity of dashes in the following phrase "bigger-than-life" where it caused comprehension difficulty for some readers like the following informants:

> ...I'm wondering why this dash is here (referring to the phrase "bigger-than-life"). I mean why did the writer put such dash in here? Or why did he put it in the first place....I mean he could have expressed what he wanted to say without using the dashes.
> *Do you think that the presence of dashes in this sentence created a comprehension problem for you or just you're wondering about its location?*
> It caused a comprehension problem for me...you see when I come to a sentence or a phrase like that one, I know that there is a complex meaning for it, so I don't like some writers' way of expressing their ideas...they try to create a reading difficulty for us by using uncalled for methods like dashes you see in order to understand that phrase or similar sentences, I have to combine the meaning of the whole phrase and get its meaning.
> *Could you explain more?*
> Yes, first ... "in my mind", I find the individual meaning of each word in Arabic, then combine the two meanings (the Arabic and the English) to see if there are any similarities between them then apply that meaning to what I read to see if it makes sense or not.

A process like the above one is a very complicated one, especially if we take into consideration that the above reader switches back and forth between two languages (Arabic and English) just because the structure of the sentence included dashes. It's worth mentioning that word hyphenation is not used in the Arabic language which is the native language of our informants here. The interactions between Arabic and English literacy might be the cause of such difficulty encountered by this reader; and in fact Hudson (1998) indicates that " different L1 orthographies and literacy practices will affect L2 reading ability and strategies" (p. 44). Furthermore, it seems that this reader is highly dependent on his L1 (Arabic) reading strategies to process the L2 text.

Another reader followed a different reading strategy when he found out that he faced a similar problem. First he reread the whole thing twice, then he reread the problematic part alone, then he identified a small part of the sentence as the source of the

problem, looked it up in the dictionary, reread the same sentence for the last time and finally he went on in his reading hoping that the following paragraph might help him out. Let's see what happened:

> Millions of people struggle out of bed...this need maybe the reason that many of them turn their half-opened eyes to the comics section of the newspaper as they sip their first cups of coffee of the day". Uhh...I think I need to read it again... " Millions of people struggle out of bed...this need maybe the reason that many of them turn their half-opened eyes to the comics section ...to the comic section of the newspaper as they sip their first cups of coffee of the day The first part of the paragraph is fine, but I still couldn't connect the last sentence with the rest of the paragraph.
>
> *What do you think the source of the difficulty here...I mean in this sentence?*
> The structure of the sentence. It's a long and a complex sentence
> *What do you do in such case?*
> I usually read it again
> *OK.*
> " This need maybe the reason that many of them turn their half-opened eyes to the comics section of the newspaper" so far I think the difficulty is in the last words "the comics section of the newspaper"...actually the " comics section"...I think this word "comic" is a major source of the sentence difficulty...so I'll check it up in the dictionary ...

After he consulted his dictionary, he commented:

> OK. I got its meaning ...now let's see " This need may be the reason that many of them turn their half-opened eyes to the comics section of the newspaper as they sip their first cups of coffee of the day". I think I grasped the general idea of the paragraph...so I'll continue reading ...maybe the coming paragraph will provide more information.

It might appear to us that he had a meaning difficulty since he consulted the dictionary, but he was aware that the problem had something to do with the structure of the sentence from the beginning. He explicitly said that it was " the structure of the sentence. It's a long and a complex sentence...". Consulting the dictionary, I think, was one of his own strategies to solve the complexity of the sentence, which he had to try

before he continued on in his reading. It might be a sequence of strategies that he had to utilize to solve a reading problem, which, according to Shuy (1977), increase in a sequential order of sophistication. Thus, this reader started by concentrating on the meaning at a lexical level but applied a more effective method as he chose to continue in his reading. Application of this strategy reveals his awareness/knowledge of this strategy and its effectiveness in solving his reading difficulty (Baker & Brown, 1984).

He realized also upon consulting his dictionary that it was not a meaning difficulty; had it been a meaning difficulty, it should've been solved after getting the meaning of the difficult word. Hence, his sequence of strategies seems better than the previous reader since he was able to minimize the source of the problem and was able to get the general meaning rather than switching back and forth between two different languages as did the former.

Interestingly enough, some readers were so much involved with the passage where they wanted to adapt the writer's style or even say how a certain sentence or phrase should have been written as we can see in the following comments of one informant:

> " Cartoons reflect the times and the troubles..."
> *Why did you stop? What are you thinking of?*
> " troubles" Why did he use the plural form? It's a mass noun and shouldn't be written as plural...
> *What do you want to do about it?*
> I might underline it...in fact, I'll underline it and read the sentence again. "Cartoons reflect the times and the troubles and worries of people" I think that "worries" here is the noun form of "worry"...
> *How about "troubles" are you still thinking about it?*
> Yeah, I think the writer made a mistake here but it doesn't affect the meaning. I'm also wondering because he used "and" three times in one sentence...so instead of saying " Cartoons reflect the time and troubles and worries of people" he should have used commas so the sentence would be like this " Cartoons reflect

the times, the troubles and the worries of people".
Does it cause any comprehension difficulty for you?
In terms of comprehension, No, but I was concerned about its grammatical correctness only.

In another place, the researcher asked him why he read the following sentence twice: " They also make fun of the problems that people make for themselves-like making a problem out of which type of car to buy". He said:

> "I think the sentence is well-formed and as a non-native speaker of English, the writer was able to convey his message to me despite the complexity of the sentence. I read it twice because I liked the way he put it and wanted to apply the same style of writing in the future".

But he seemed to be confused later on and went back to his concern about grammatical correctness when he faced a problem similar to that he encountered earlier. It appears that this reader was preoccupied by the grammatical correctness of what he was reading. Even though he finally continued reading, I think that his frequent stops and concerns about the grammatical correctness might have interrupted the flow of his comprehension. He said:

> " In hard times- time...uhh...times ...again he shouldn't have used the plural indicator with a mass noun...I don't know why he is doing that, but it is not my concern here. " In hard times- times of economic troubles- people want someone or something to blame their troubles on"...ummm...I don't recall this usage for this prepositional of phrase " to blame their trouble on". I have heard " don't blame me" and " I'm the one to be blamed " but not " blame it on"
> *How about " don't blame it on me"?*
> No, I haven't heard of it.
> *What do you want to do now?*
> I'll continue because it doesn't affect the general meaning.

While the above reader looked at it as a grammatical error, another reader saw it as a typo and believed that the presence of such dashes must be a typing mistake. His comments read:

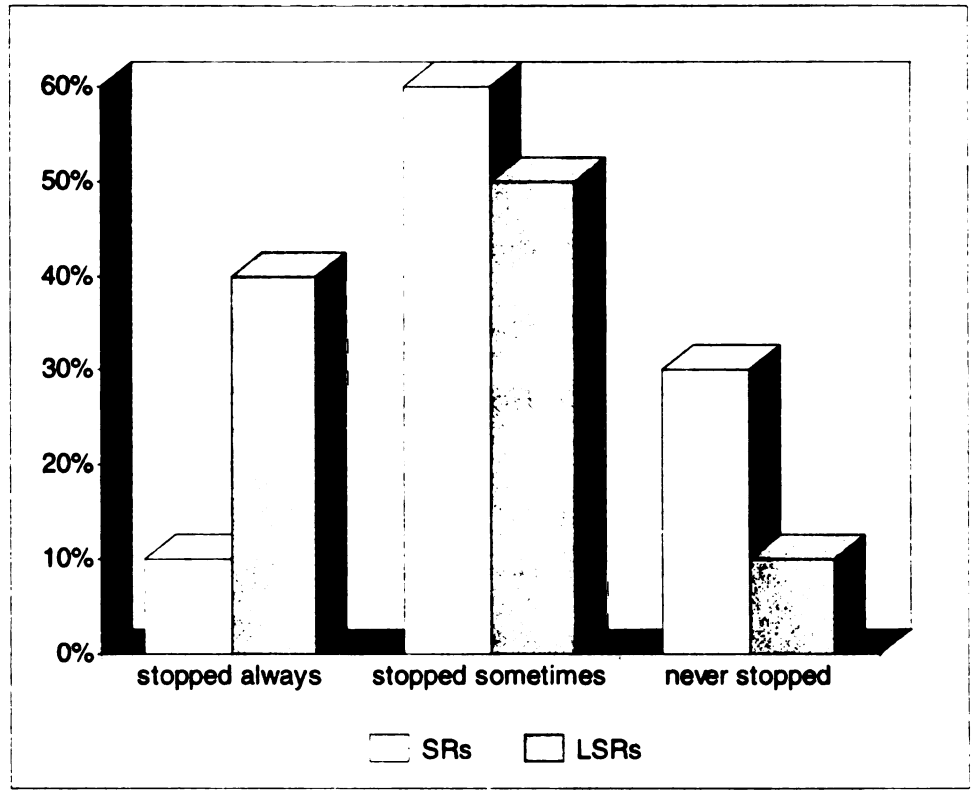
"... In hard times-time of ...ummm is it times or time...Is this a typing error or
what?
What do you think?
I think there are some typing mistakes in this passage, like " half-opened eyes", "themselves-like", " in time of troubles-people" and this one "In hard times-time of".
But you just mentioned them now. You didn't say anything about them before why?
Well...the first three looked like typing errors, in which the writer mistakenly typed hyphens between the these words.
What makes you think they are typing errors?
Because in each one, the second word is different from the first one, but the last one " times-time" seems to me the writer the writer put it intentionally...or you might be the one who put these dashes to see what we are going to do.
No, no...I didn't add anything to this passage except the red dots where I wanted you to stop.
Or it could be additional information.
You mean the last one " times-time" or all of them?
No, the last one only.
How do you solve this confusion?
I'll read the sentence twice...one as is with the dashes and in the second one I'll delete the phrase "time of economic troubles" If the meaning is not affected by the deletion, then this phrase is an additional information.
OK
" In hard times-time of economic troubles - people want someone to blame their troubles on"... " In hard times people want someone to blame their trouble on"...ahhh ...the sentence was not affected by the deletion , so it is an additional information. This additional information explains what he meant by " hard times"

Two different readers encountered the same sentence differently, but the overall meaning of the sentence was a major concern for both of them. The former thought that the sentence contained a grammatical problem but proceeded despite the fact that he was confident of the sentence incorrectness. The latter, on the other hand, believed that the sentence had a typo error but he, too, continued reading because the meaning wasn't affected by the deletion of the phrase.

4.2.5 Vocabulary difficulty:

Both SRs and LSRs encountered unfamiliar words/phrases as they read the given text. In this category we want to see what happened when informants encounter such difficulty and what kind of strategy they employed.

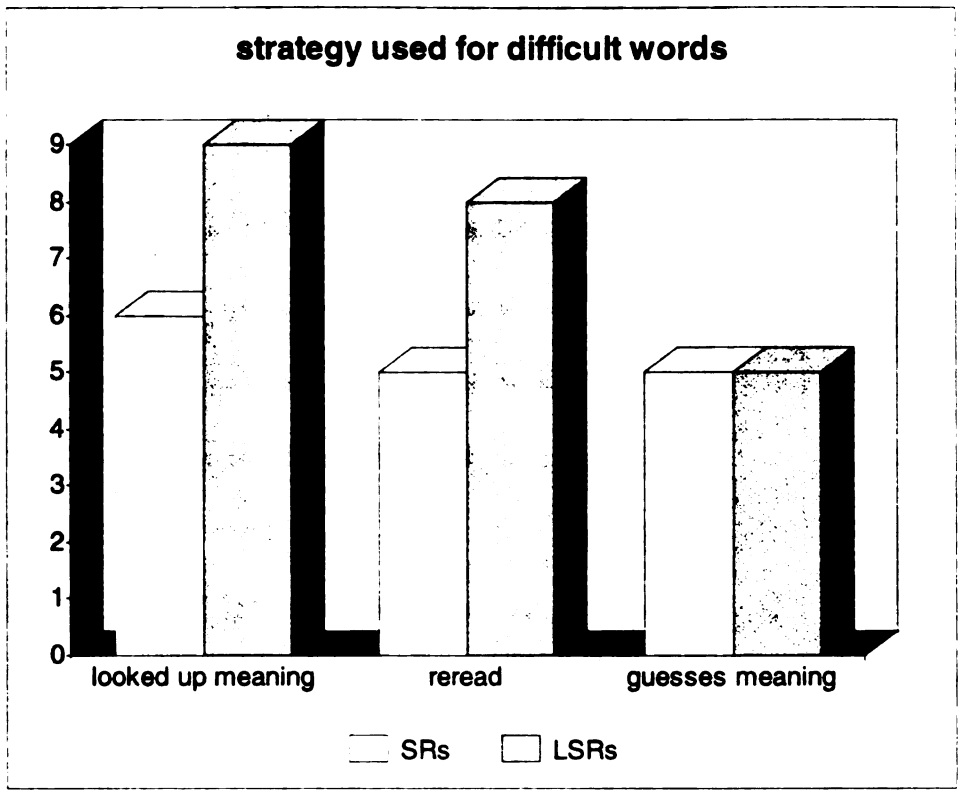
Chart 4-3: Vocabulary difficulty



Analysis of this category indicates that skilled readers used somewhat better strategies than less-skilled readers. Only 10% of the skilled readers stopped when faced with unknown words or phrases compared to 40% of less-skilled readers who always stopped. On the other hand, 60% of SRs sometimes stopped during their reading process compared to 50% of the LSRs. We shouldn't be surprised as we see the 60% (though it seems to be a big percentage) for two reasons: First, the rest of the results indicate that

30% of skilled readers applied a global strategy as they continued their reading compared to 10% of the LSRs. Second, what happened after they stopped? What did they do? In other words, what kind of strategy/strategies did they employ? Informants in this study differed in regards to this issue; some readers in both groups did stop for a while, maybe reread the new word/phrase, or tried to guess the meaning of that word/phrase and some continued their reading and didn't stop while others insisted on knowing everything in the text before they proceeded in their reading. Referring back to the same reader, who pointed out that he is " different from others", we can see that some readers can't go on in their reading unless they decode and know everything in the text including names of people and places. This suggests that some readers appear to be text-based readers who might still view reading as a decoding process rather than an interaction process. Further, it might support Walker's (1983) suggestion that readers of this type- word by word processors- can be classified as beginners.

Chart 4-4: Strategy used for difficult words



The overall results of what the informants did as they encountered unfamiliar words/phrases indicate that informants were not consistent. For example, sometimes an informant would continue reading though he was facing a meaning difficulty but later on the same informant would consult his dictionary upon reading a difficult word. Both groups had this inconsistent pattern and this will be highlighted in the second part of the analysis. However, as we can see in Chart 4.3[3], the SRs seemed to consult their dictionaries less than the LSRs. That is, on 6 occasions SRs consulted their dictionaries upon encountering an unfamiliar word/phrase compared to 9 times in the case of the LSRs. Moreover, they used the rereading strategy less than LSRs (five times compared to eight times for the LSRs) though this strategy can be effective as long as it doesn't

[3] Results of this chart shouldn't be mixed with that of the comprehension difficulty chart. This one talks about subjects' strategies on the word level while the comprehension chart talks about their strategies on the paragraph level.

become a reading habit. That is to say, and based on the researcher's experience, the rereading might hinder reader's comprehension when it occurs more often at unnecessary places.

We can see also in the same chart that the number of times that informants in both groups guessed the meaning of the unfamiliar word/phrase was equal (five times for each group). Subjects' effort to guess the overall meaning of the sentence appears to be an indication of their awareness of this important strategy.

With non-native speakers of English, as is the case with our informants here, the unfamiliarity of some English words is normal and, as a matter of fact, is expected. Knowing how readers deal with this difficulty is essential for learners and researchers alike.

Examples of subjects' actual reading strategies in the current study indicate that they differ from one another in the way they approached the difficult words/phrases and in the strategy being employed. For example, the following reader guessed the meaning of two words but consulted the dictionary for the third one since he considered it "important". Here is how:

> I'm wondering about the meaning of "comics".
> *Do you want to look it up in the dictionary? What would you do if you were alone?*
> I know it's a section in the newspaper, but I don't know which one...so, I would look it up in the dictionary...OK... now I see what it means...
> *Do you usually consult the dictionary in your reading?*
> I consult it when I can't guess the meaning ...so in this paragraph, I guessed the meaning of "fumble", and "struggle out" from the context. But when I couldn't guess the other word, and I thought it was an important one, I went back to the dictionary. Sometimes when I find a good word... or a new word which sounds important, I check its meaning and try to memorize it - along with its spelling- it for a later use.

Another reader indicated that finding the meaning of new words is important when reading a required course or topic. In other words, he only guesses in his free reading but not in his required reading. In his reading, he encountered a number of unfamiliar words and stopped at the first dot, which had been placed in the passage. He was asked to do exactly as he would usually do in his reading and this is what he said:

> You mentioned that you didn't know the meaning of "struggle out" *and "fumble" what else?*
> Also "cheerful", "half-opened eyes", "comics", and "sip".
> *OK...What do you want to do about them? Actually, what would you do if you were alone?*
> Well, it depends...If it is a required reading, then I have to find out the meaning of each individual word and write it down so I can understand what I read.
> *In our case here, let's suppose that you're reading a required topic. What would you do?*
> First, I'd find out the meaning of these words before I continue.
> *Please do (Informant looks up words in the dictionary and writes each word's meaning in Arabic above the English word or next to it. Then he starts rereading the paragraph).*
> "Millions of people struggle out bed each morning...as they sip their first cups of coffee of the day"...Now it makes sense...
> *As I noticed, you first located each word that you didn't know by underlining it, found their meanings, wrote the meaning of each word in the text and then you reread the paragraph. Is this your reading strategy?*
> Yes, when I read a required topic.
> *How about when you read for pleasure*
> I sometimes look up words in the dictionary, but not as often as I do in my required reading.

Obviously, this reader followed a long and complicated strategy. Not only did he insist on finding the meaning of each individual word, but also he wrote their meanings in Arabic in the passage. Finding the meaning of unknown words and then writing their meaning in Arabic might be traced to traditional methods of teaching English at lower levels (middle and high schools) in which a lot of emphasis is directed towards the meaning of each individual word. Such a reading strategy would definitely interrupt his

comprehension process, especially if he stops after each unknown word as he indicted later in response to this comment:

> *But I noticed that you finished the first paragraph first before you consulted your dictionary. Do you consult your dictionary after each paragraph?*
> No, I just wanted to stop at the red mark that you put here...that was why I continued. Otherwise, I would have stopped after the second word that I didn't know.

Unlike the previous reader, this reader encountered a similar problem but dealt with it differently. In the same paragraph, he encountered the following unknown words: " fumble", "struggle out" and " comics", but continued reading and tried to get the general meaning of the paragraph instead of finding their exact meanings. He reflected by saying:

> I encountered some new words in this paragraph...
> *Like what?*
> Like "fumble", "struggle out", and "comics"
> *Could you tell me what happened later?*
> I tried to read the whole paragraph without stopping...that helped me to guess their meanings ...I was able to understand the general meaning of the paragraph without referring to the dictionary.
> *Do you usually apply this strategy in your reading?*
> Yes, I always try to guess the meaning of new words from the context.

A third reader indicated that looking up an unknown word depends on its importance to the given passage. For him, if the unknown word is a key word, then it's better to find out its meaning rather than the general meaning of the sentence or paragraph. The word "scapegoats" appeared twice and triggered the following comments:

> "being able to use the leaders as scapegoats and to laugh at the leaders somehow makes people feel better about their situation." Umm... Another scapegoats in the same paragraph...so I need to look it up.
> *Is it because it appeared twice only?*
> No, it's not only that. Actually, I didn't fully understand the sentence and it's a key word too.

The previous quote shows that the reader did two things: First, he skipped the unknown word "scapegoats" for the first time despite the fact that he didn't know its exact meaning. But when the word appeared for the second time, he decided to look it up. He applied an effective reading strategy where he intentionally ignored it as it appeared for the first time, but realized its importance to the paragraph and wanted to know its exact meaning to fully understand the sentence.

4.2.6 Connecting Ideas:

Keeping track of the presented ideas by connecting new ideas with previous ones is a sign of a good reading strategy. Analysis of informants' transcripts indicate that 50% of each group applied this top-down strategy. By the same token, 50% of each group either read each paragraph and did not attempt to relate them, or failed to report this strategy during their reading process. Among those who tried to apply this strategy is the reader whom I quoted earlier. It is clear that he paid attention to ideas' connection especially at the end of the passage where, according to him, connection is essential to the overall comprehension. In his comments about rereading the last paragraph three times he said: "...The last paragraph is always a summary of the whole topic, so I usually pay more attention to it and in most cases, I read it more than two times. Repeating here helped me to understand what has been said in this paragraph and helped me to connect with other ideas which have been mentioned earlier."

But that was not necessarily the case. While some readers tended to pay attention to ideas' connection, others showed no interest in doing so. The following reader

represents the latter type of readers since he made no effort at relating or connecting ideas together. His comments that revealed this strange strategy were prompted by the following observation:

> You read the first paragraph and read part of the second paragraph...almost half of it. Did you try to connect what you've read *with what you were reading?*
> He responded:
> Well, no...actually I usually read each paragraph separately and I didn't try to connect the ideas together.

4.2.7 Imaging/use of past experience:

Another interesting finding is the readers' use of images and recall of experiences during their reading process. SRs were found to invoke more images from their life experience than LSRs (70% compared to 40%). One might say that maybe the passage did not have something that could have triggered their imagination. That might be true, but it is worth mentioning that subjects were approaching their finals during the data collection and the passage contains something about the exam that could have, I think, triggered their imagination. Most subjects who recalled a certain situation which had occurred in their past did so when they read this part "... students who have studied too little before an examination can laugh at their anxiety." So, absence of such imagination concerning the previous part or any other part of the passage might be due to either nonrecall of a related experience or a complete failure to report it.

One subject's recall of past experience reads:

> "...and make their way to a cup of coffee and the morning news paper".
> Ahh "to a cup of coffee and the morning news paper"
> *Why did you repeat this part twice?*
> "It reminds me of the British family that I used to live with..."
> *ahh.*

"Early in the morning...and while the women prepares the breakfast, the man used to get a cup of coffee while reading the newspaper."

I think the recall of this experience has made the comprehension process of this part easier for him. Culturally speaking, most Saudi people drink coffee in the morning but rarely do so as they read newspaper. So, I think the image of the household drinking and reading newspaper in the morning has contributed to this reader's comprehension process.

Another reader commented on the anxiety of the finals when he read the following sentence: "Students who have studied too little before an examination can laugh at their anxiety". He said:

Yaah ...that is true [laughing]

You laughed...why ?

You know when I read this sentence, I remembered the finals of last semester. We had a lot of pressure especially in the first week... we had to study hard since we covered a lot of materials during the term and we were behind ... after we finished the exams and passed wa alhamdu le Alleh [thanks to God] we used to get together and laugh at our neglect and laziness.

I see...do you think remembering this situation helped your comprehension?

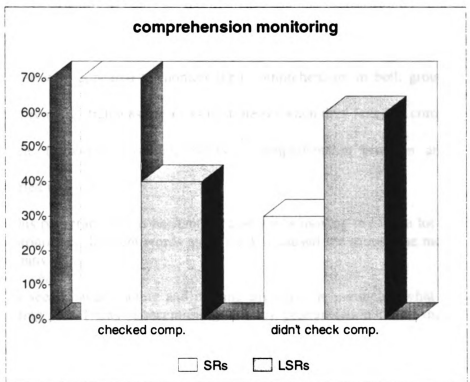
Of course it did... you know when I read it, it made sense to me.

4.2.8 Comprehension Monitoring:

In this category (the comprehension category), results show that 70% of skilled readers checked their comprehension all times while less-skilled readers appeared to

neglect this essential strategy. During their reading and thinking process, 60% of less-skilled went on in their reading without checking their reading comprehension and only 40% did check it to make sure that they were following up with the presented ideas.

Chart 4-5: Comprehension monitoring



Comments such as: "OK", "Now I understand", "Now everything is clear" "I see", "I don't know what he meant by so and so" and similar comments suggest that informants were checking their comprehension. To be more accurate, subjects' verbalization of such comments helped the researcher to detect their comprehension monitoring. It must be noted, however, that the previous result was a result of studying the process of their overall comprehension which seems to be in favor of the SRs. Amazingly enough, as we will see in the second analysis, 80% of the LSRs reported a comprehension failure at one

point of their reading compared to 30% of the SRs. But as I examined such reports, I found most of these reports were at word or sentence levels, which might interrupt rather than promote their comprehension. On a few occasions which represents 40%, LSRs were found to monitor their comprehension at the paragraph level. Monitoring at a word or a sentence level, according to August et al. (1984), " ... do not [help in] constructing a coherent representation of the whole story that can then be evaluated for consistency ..." (p.40).

Those who appeared to monitor their comprehension in both groups tended to change their reading strategies (as a fix-up strategy) when they failed to comprehend. For example, the following quote represents a comprehension problem and how this informant tried to fix it:

> In this paragraph, I was hesitant because I was moving my lips a lot trying to pronounce different words and I think it caused me to lose the meaning of many things.
> *Like what?*
> You see.. I was reading and moving my lips (pronouncing what I was reading) so I was concentrating on my pronunciation rather than my comprehension.
> *Did it happen from the beginning of the paragraph?*
> Yes .. so I did not grasp that much from this paragraph.. I was trying to see how my comprehension would be.. I mean would my comprehension be better when I read and pronounce at the same time or not.
> *So, what did you do when you realized that you had a comprehension difficulty?*
> I stopped moving my lips and reread the part which I did not understand and continued reading in the same way until I finished.
> *Do you mean to say without moving your lips?*
> Yes, I meant that and my comprehension was much better than before.

Sub-vocalization, which means repeating words to oneself (Al-Arfaj, 1996), caused comprehension interruption for this reader. As a result of his comprehension monitoring, he realized that he was not following up with the writer; thus, a rereading

strategy plus avoiding the sub-vocalization were used to repair this comprehension failure.

Another reader reflected on his reading strategy adjustment where he believes that each paragraph has to be approached differently. He says:

> "Each paragraph needs a different approach, at least for me. For example, this paragraph needed a lot of concentrating. I took more time reading it, so my reading speed was slow compared to the previous one".

On the other hand, those who didn't monitor their reading comprehension either concentrated on a small portion of the text (e.g. sentence level) and neglected the rest of the text or, as I said earlier, tried to monitor on a word level which is a sign of being text-driven reader. One subject even went further to explain his frustration when he comes across names of people or places that he does not know in a given text. He says:

> "... when I read something and find an unfamiliar thing that I don't know, whether it's a word or an idea, I feel disappointed. I'm different from others, for example, If I read a story and this story contains names of character or places, I feel frustrated when I don't know how to pronounce these names.
> *Why do you feel frustrated?*
> The names are important to the reading process. ..that is what I think. If these names appear once or twice, they can be ignored. But in a story or a novel, names of characters and places appear repeatedly and interrupt my reading speed and comprehension and even my reading desire is strongly affected by not knowing them. I feel frustrated because there is no way of checking their pronunciation.
> *What do you do in such case?*
> As I said, I can't ignore them and go on...so I simply close the book and do something else. In my reading now, the word "fumble" might mean wearing some clothes...I think it's listed in the dictionary, but if I couldn't find it, I can't go on in my reading.

It's clear that this reader pays attention not only to pronunciation of new words (including names of people and places), but also to their meanings. His reading

comprehension seems to be coupled with his ability to pronounce individual words as well as knowing their exact meaning.

4.2.9 Prediction:

Our next category in this comparison is the prediction strategy. Results suggest that only 30% of each group utilized this strategy and 70% of each group either did not apply it or failed to verbalize it. Although prediction strategy can't be compared to comprehension monitoring in terms of importance, this strategy is still considered a favorable one that could enhance readers' metacognitive awareness of their reading strategies. However, presence of anticipation or prediction alone may not be a sign of reader's interaction with the text as we can see in the following quote:

> *After reading the first paragraph, do you anticipate what is he going to talk about?*
> Yes, I think he going to talk about the daily routine of our life.
> *Then after he read the next paragraph he said:*
> " my guess was wrong. He is talking about cartoons while I thought he would talk about our daily routine!
> *It's OK. Don't worry. But let me ask you ...do you usually try to predict when you read?*
> Yes, I usually do.
> *I see...but let me ask you about your share as a reader...do you depend mainly on the text or bring some of your own ideas into it?*
> I depend mainly on what the text says.

The previous quote indicates that even though the subject predicted what would come up next, he seemed to be a text-based reader later on as he appeared to avoid contributing to the text information.

4.2.10 Questioning:

Unlike prediction, questioning the presented ideas in any given text tells us what type of readers we are. That is, questioning the writers' ideas is an indication of our interaction with the text, which enhances our comprehension and designates us as interactive readers.

Chart 4-6: Questioning

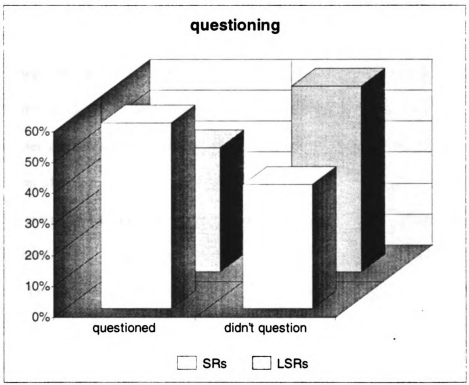


Chart 4.4 reveals that 60% of skilled readers questioned the writer's ideas at one point in their reading process as suggested by their think-aloud protocols. The remaining (40%) did not show any sign of questioning. On the other hand, we found the opposite results in the case of the less-skilled readers where 40% questioned the writers' ideas at one point in their reading process and 60% did not utilize this important strategy or failed to reflect it during their reading process.

The following is an example of questioning the writer's ideas:

"... he talks about cartoons and how they provide solutions to people's problems...but I don't think they solve people's problems at least in our culture. I don't know that much about other cultures where cartoons might play such role in people's lives".

So, in a way you disagree with the writer here?

Yes, I do.

Reflection of this informants' questioning is evident in his statement " but I don't think they solve people's problems" (referring to cartoons). This suggests, I think, that the reader was interacting with the text as he wondered about the extended role of cartoons given by the writer and objected to this role at least in "his culture." It implies that the reader didn't take the writer's information for granted, rather he questioned it from his point of view.

In contrast to the previous reader, amazingly enough, some readers believe that printed textbooks can't be questioned and the only thing they question is newspapers or magazines. Let's look at what this informant says in response to the researcher's questions:

> *Do you agree with the writer so far?*
> I agree with him
> *When you read about any topic do you try to question what you read?*
> Only when I read newspapers or magazines, but text-books or anything related to them, I don't question what I read. Textbooks are different from newspapers and magazines where we have to follow what the writes says or believes...newspapers contain opinions while texts-Book or any educational materials contain facts...

Although the above reader might be right that some textbooks contain facts, others don't, and as a matter of fact, some articles that appear in a textbook could be reprinted in newspapers or magazines and in this case according to what he said earlier,

can be questioned simply because they are not textbooks or they are not related to education. Moreover, theories, facts, or results of a certain experiment are subject to challenge and questioning by other researchers or readers; having them printed in the form of a text-book or an article doesn't necessarily mean that they are secured from opinions of other readers. I think that previous education, especially in middle and high schools, of this reader has contributed to his way of viewing reading. Culturally speaking, as far as I know, early education in some of Saudi Arabia schools teaches reading in a way that prevents- or to be more accurate- discourages questioning printed textbooks. I think that some of the Padron et al.'s (1986) observation in regards to the bilingual students' reliance on decoding skills is apparent in the reading strategies of this reader. I might add, however, to their explanation of this reliance, the cultural aspect implied in the reader's previous reading education as an important factor that could have transferred to their reading behaviors in the second language.

4.3 Part II: Analysis of informants' actual and reported reading strategies

4.3.1 Introduction:

This part looks closely into informants' actual reading strategies and compares them with their reported answers to the metacognitive questionnaire. In doing so, actual reading strategies were analyzed separately to be compared with that of the reported ones (skilled readers SRs vs less skilled readers LSRs). In an attempt to do this task, the researcher depended heavily on informants' actual strategies and compared them with their equivalents from the reported strategies. In other words, items from the reported data were compared to that of the actual data upon their availability in the actual data. Reported items that had no equivalents in the actual data were ignored. Second, due to the uniqueness of each informant's actual reading method, the comparison of SRs and LSRs' actual and reported strategies will be examined from the following perspectives: the similarities, the differences, the inconsistencies/contradiction between their reported and actual reading strategies; the informants' neutrality (e.g. when informants chose a neutral response but in the actual reading used a certain method); and finally their use- as a whole- of local and global strategies.

To make this comparison easy for my readers, two separate tables will be presented in which the 20 cases are summarized. The SRs are summarized in Table 4.1 (case 1 through 10) while cases 11 through 20 are summarized in Table 4.2 reflecting the LSRs. Number 1, 3, or the letter (n) was inserted in the provided space upon the availability of a certain strategy in the actual data. Number one means that the indicated informant agreed with the statement in his reported strategies and number 3 means that he

disagreed. Following the appropriate number (i.e. 1 or 3), one of the following letters was inserted:

an (s) when the actual and reported strategies match one another, a (d) letter to indicate a mismatch between them. If the indicated informant was inconsistent or contradicted himself later on an (in) was inserted to indicate such inconsistency or contradiction. A (0) sign indicates absence of the indicated strategy from the actual data of a certain case/s and finally an (n) was inserted when an informant chose to be neutral in his reported strategies but applied certain method/s in his actual reading.

Table 4-1: SRs' reported and actual reading strategies*

Strategy	Case # 1	Case# 2	Case# 3	Case# 4	Case# 5	Case# 6	Case# 7	Case# 8	Case# 9	Case# 10
Relate information	1 s	0	0	0	1 s	1 s	0	1 s	1 s	0
Prediction	0	1 s	0	0	n	0	0	0	0	1 s
Use of past experience	1 s	1 s	1 s	1 s	0	0	1 d	1 s	1 s	0
Keep on reading if not understood	0	0	0	n	0	0	0	0	0	0
Look up unknown words	0	0	1 s (in)	1 s	0	1 s	1 s (in)	1 s (in)	1 s (in)	0
Questioning	1 s	0	1 s	1 d	0	0	1 s	1 s	n	0
Focus on getting overall meaning	0	0	1 s (in)	0	1 s	0	1 s (in)	1 s (in)	1 s (in)	1 s
Focus on pronouncing each word	3 d	0	0	0	1 s	0	1 s	0	0	0
Understand meaning of each word	0	0	0	1 s	0	0	0	0	0	0
Focus on gram. Structure	n	0	0	0	0	1 s	0	0	0	1 s
Focus on looking up words	0	3 s	0	0	0	0	1 s	0	0	0
Reread prob. part if not understood	1 s	0	0	1 s	1 s	1 s	0	1 s	0	0
Focus on details to read effectively	0	0	0	0	0	0	0	0	n	0
Ability to recog. main points	0	1 s	0	0	0	0	0	0	0	0
Have sense of compr. failure	0	0	0	1 s	0	1 s	1 s	0	0	0
give up reading if not understand	0	0	0	0	0	0	0	0	0	0

* 1: agree n: neutral 3: disagree 0: absence of the strategy
s: match d: mismatch in: inconsistency/contradiction

Table 4-2: LSRs' reported and actual reading strategies*

Strategy	Case# 11	Case# 12	Case# 13	Case# 14	Case# 15	Case# 16	Case# 17	Case# 18	Case# 19	Case# 20
Relate information	1 d	1 s	0	n	1 s	0	0	n	0	1 s
Prediction	0	0	0	0	1 s	0	1 s	1 s	0	0
Use of past experience	1 s	0	0	0	1 d	n	0	n	0	0
Keep on reading if not understood	0	0	0	1 s	0	3 d	0	0	3 d	1 s (in)
Look up unknown words	n	n	0	1 s (in)	0	0	0	1 s	1 s (in)	1 s (in)
Questioning	n	0	1 s	0	1 d	0	1 d	0	0	0
Focus on getting overall meaning	0	0	1 s (in)	1 s (in)	0	1 s (in)	3 d (in)	0	3 d (in)	0
Focus on pronouncing each word	0	n	0	3 d	1 s	1 s	3 d	0	1 s	1 s
Understand meaning of each word	0	0	1 s (in)	0	0	1 s (in)	3 d (in)	0	3 d	0
Focus on gram. Structure	0	0	0	0	1 s	0	n	0	n	0
Focus on looking up words	0	0	0	0	0	0	0	0	0	0
Reread prob. part if not understood	1 s	1 s	1 s	3 d	1 s	1 s	0	1 s	1 s	0
Focus on details to read effectively	0	0	0	1 s	0	0	0	0	0	0
Ability to recog. main points	3 d	0	0	0	0	0	0	0	0	0
Have sense of compr. failure	1 s	1 s	1 s	1 s	0	3 d	0	1 s	1 s	1 s
give up reading if not understand	0	0	0	1 s	0	0	0	0	0	0

* 1: agree n: neutral 3: disagree 0: absence of the strategy
s: match d: mismatch in: inconsistency/contradiction

4.3.2 Similarities:

The above tables show that SRs' actual and reported strategies matched one another in 46 places compared to 41 places in the case of LSRs. This difference seems to be small at a first glance but when we look closely, we can note two things: first, the matching between SRs' reported and actual data is higher in five places all of which are global strategies compared to that of the LSRs'. These places are: relating information (5 compared to 3), use of previous knowledge (6 compared to 1), getting the overall meaning (6 compared to 3), and questioning (4 to 1). Secondly, even when LSRs outnumbered SRs they did so in local strategies- with the exception of one global- (e.g. pronouncing each individual word and focusing on the details) or in the rereading strategy which, as I mentioned in my discussion of the first part, can be considered a local or a global strategy depending on the situation. In one place only we find that LSRs outperformed SRs in applying a global strategy (have sense of comprehension failure where their reported strategies matched their actual ones in 7 places compared to 3 in the case of SRs).

4.3.3 Differences:

The case of differences creates a clearer picture than that of the similarities. As shown in the above tables the SRs' actual and reported strategies differed only in three places compared to the LSRs who had 15 differences; this

big difference might be a sign of the LSRs' lack of metacognitive awareness. That is, the small differences between SRs' actual and reported strategies, based on the available data, suggest that the SRs are more metacognitively aware of their reading strategies than the LSRs.

The above data indicate the SRs' reported and actual strategies differed in three places. The first is found in case number one where he indicated his disagreement with the following statement, but he reflected his concern about pronunciation when he was reading the word "scapegoats". So, we can see

Reported strategy	Actual strategy	Notes
When reading silently in English, the things that I do to read effectively are to focus on being able to pronounce each whole word... 1. Agree 2. Neutral 3. Disagree	" scapegoats" is a new word for me...so I tried to pronounce it three times...	different

that his reported strategy is a global one as he disagreed with the statement, but in reality he applied a local one.

The other two differences are found in case number 4 and case number 7. One of these differences is a global difference "questioning the presented information" while the other one "rereading the problematic part" depends on the situation itself and the frequency of the rereading as I mentioned earlier.

As far as the LSRs are concerned, the available data reveal that their reported reading strategies differed from their actual strategies in fifteen places. Interestingly enough, not all of these differences are negative differences though the number is still high compared to the SRs. For instance, 4 of these differences are considered positive differences where they reported local strategies but

applied global ones. The first two cases of this positive difference are found in cases 16 and 19 where they disapproved the "keep on reading if they don't understand something" in their reported strategies, but in their actual reading they continued on reading hoping that they would find clarification later on. This reader's reported and actual strategies, for example, highlight this positive mismatching: (case # 16)

Reported strategy	Actual strategy	Notes
When reading silently in English, If I don't understand something... -I keep reading and hope for clarification further on... 1. Agree 2. Neutral 3. Disagree	"Millions of people struggle out of bed each morning, fumble into some clothes and make their way to a cup coffee and the morning newspaper..." being read twice I tried to understand what he meant by "struggle out" and "fumble." Were you able to do that? Not really, but I got the general idea. I'll continue and see how it works..."	Different

Other cases of these positive differences are found in items 14 and 15 of the same chart. In item 14 case #11 reported his inability to recognize the difference between main points and supporting details, but in his actual reading he demonstrated that ability as seen in the following quote:

Reported strategy	Actual strategy	Notes
When reading silently in English, I am able to recognize the difference between main points and supporting details... 1. Agree 2. Neutral 3. Disagree	" I pay more attention to the first and the second paragraphs and make sure I do understand them... then I might follow the same strategy in any part of the topic which I don't understand depending on its importance to the rest of the topic."	Different

The fourth and final positive difference is found in item number 15 case # 16. In this case, the disagreement between the reported and actual strategy is favorable. When asked why he stopped for a while, he indicated that he wanted to think about what he had read before he continued. One might say that there is no indication of comprehension monitoring in his comments, but it's evident that he was engaged in comprehension monitoring otherwise he could have continued reading without any concern about what he just read. The quote reads:

Reported strategy	Actual strategy	Notes
When reading silently in English, I have a sense of when I understand something and when I don't... 1. Agree 2. Neutral 3. Disagree	"In hard times-times of economic troubles- people want something or someone to blame their trouble on ... in reading this sentence, I prefer to read it this way... In hard times ...stop for a while and reread it without stopping until the end" *Why did you stop for a while?* "to think about what I have just read before I continue"	Different

Other than these four favorable differences, the previous table indicates that the LSRs reported using global strategies (e.g. relate current information to previous ones in case # 1, use of past experience as in case # 15, questioning as in cases 15 and 17) as they agreed with the provided statements but indicated local strategies in their actual readings. One example of this mismatching is the questioning of the presented information (cases 15 and 17). Their comments read respectively as follows:

Reported strategy	Actual strategy	Notes
When reading silently in English, I am able to question the significance or truthfulness of what the author says...	*when you said earlier that you had to finish before you draw any conclusion, did you mean before you question his ideas?* " No, what I meant was to draw a	Different

1. Agree 2. Neutral 3. Disagree	conclusion" *But generally speaking, when you read something, do you question what you read?* "In Arabic I read and question, but in English I read for the sake of reading and learning only."	
When reading silently in English, I am able to question the significance or the truthfulness of what the writer says... 1. Agree 2. Neutral 3. Disagree	" I was not expecting such an odd construction... it looked strange when I read it and that is why I hesitated a bit." *Do you agree with the writer so far?* I agree? *Do you try to question what you read?* "only when I read newspapers or magazines, but text-books or anything related to them I don't"	Different

While these two subjects reported that they question the presented ideas, the previous quotes indicate otherwise. For instance, case 15 notes that he doesn't question anything written in English but he does in Arabic. Case number 17, on the other hand, does not question textbooks whether in Arabic or in English. However, he does question newspapers' and magazines' information. It seems that this subject, as I mentioned in my first analysis, is not aware that some of textbook's articles might be reprinted in newspapers or magazines.

In short, the above tables reveal that despite some of the favorable differences in LSRs' actual and reported data, the number of the mismatching is still higher than that of the SRs. In other words, we can say that SRs' actual and reported strategies had more similarities and fewer differences compared to the LSRs. This, as I said earlier, might be a reflection of their metacognitive awareness which, according to the available data, is higher in the case of SRs , but a little bit lower in the case of LSRs.

4.3.4 Neutrality:

In the reported data, subjects sometimes remained neutral in their answers to the given statements. As indicated earlier, when a subject chose the neutral option, an "n" was placed to indicate that he did so but applied a different strategy in his actual reading. The above tables show that SRs had few neutral responses compared to the LSRs (5 to 10). This is not necessarily a negative indication since a subject might not be aware of a certain strategy but applies it automatically in his/her reading. In other words, failure to report a certain strategy means lack of awareness of that strategy but not necessarily lack of activation of that strategy when needed. Interestingly enough, skilled and less skilled readers seem to share this "automatic" processing contrary to the remarks of Anderson (1980) who attributes this processing to skilled readers only.

When we look back to our tables, we find that SRs remained neutral in five places. As I mentioned earlier, three of them were global ones (relate information, continuation of reading and questioning) and the other two were local ones (focus on grammatical structure and focus on the detail of the text to read effectively). There is no doubt that their neutrality and lack of awareness of the first three strategies can be counted in their favor but can not be considered as such in the other two. Similarly, the same thing can be said about the LSRs in regards to their neutrality. However, we find that the LSRs' number of neutral responses is higher than that of the SRs. We can note that they chose neutral responses in ten places. Five of these were global ones (relate information 2, use

of past experience 2, and questioning 1) and the other five responses were local ones (look up words 2, focus on pronunciation 1 and focus on grammatical structure 2).

The following example represents one of the SRs' passive responses to the given statement. However, as can be noted in the following quote, he applied two reading strategies to solve the reading problems that he faced. He applied the rereading strategy as he encountered the first reading problem and when it failed, he consulted his dictionary while he consulted his dictionary right away in another part of the passage.

Reported Strategy	Actual Strategy	Notes
When reading silently in English, if I don't understand something,... -I keep on reading and hope for clarification later on... 1.Agree 2.Neutral 3.Disagree	*Why did you read the first paragraph twice?* Rereading helps me to comprehend more *What seems to be the problem?* I found two or three difficult words that I didn't know and I wanted to look them up in the dictionary... In another place he said: " I had to look the word "awkwardness" up in the dictionary immediately as you might have noticed.	Was not specific.

LSRs' neutrality is no different from that of the SRs in terms of application. Both groups, as I mentioned earlier, chose to remain neutral in their reported strategies but applied different methods in their actual reading. The following quote illustrates one of the LSRs' reported and actual reading strategies. It reads:

Reported strategy	Actual strategy	Notes
When reading silently in English, if I do not understand something, - I look up unknown words in a dictionary... 1. Agree 2. Neutral 3. Disagree	"I'm wondering about the meaning of comics"... What do you want to do about it? "I know it's a section in the newspaper, but I don't know which one, so I'll look it up in the dictionary...OK. Now I know what it means." "Scapegoat is a new word, so I need to look it up in the dictionary. It's a useful word and easy to remember, so I'll write its meaning down..." "...awkwardness is a new word and I need to look it up... I know that "ward" has a different meaning and that is the problem ahhh one of its meaning is a wing of a hospital...umm wardness ...I don't know what it means... the word in question is "awkwardness" which I think is the opposite of wardness, but I have to check it in the dictionary."	Was not specific

It can be noted in the above quote that LSRs, too remained neutral in some of their responses but applied different strategies as they approached the text in reality.

One can conclude by saying that the SRs' neutrality in terms of use of local strategies is lower than that of the LSRs. It is true that LSRs applied 5 global strategies in their actual reading though they failed to report them, but they used 5 local strategies compared to 2 local strategies in the case of the SRs.

4.3.5 Inconsistency (Contradiction):

One of the interesting findings of this study is the inconsistency/ contradiction between some subjects' reading strategies that we see in the previous tables. In this regard, we find that some of the subjects' strategies contradict one another despite the

match between their reported and actual strategies. For example, some subjects reported that they focused on getting the overall meaning of what they read (e.g. case # 13) which matched their actual reading, but we find the contradiction later on when the same subject focused on getting the meaning of each word.

It is interesting to note that contradiction was not limited to LSRs' reading strategies only. In fact, SRs were found to do a similar thing. However, the LSRs' inconsistencies are higher than those of the SRs' (12 compared to 8). Surprisingly enough, all of the SRs' strategies' contradiction is found to be in two areas: looking up new words and getting the overall meaning. They reported that they look up new words. In their actual reading they did so, but at the same time they reported that they focus on getting the overall meaning and applied this strategy in their actual reading. Let's see some examples of such contradictions: (case 9)

Reported strategy	Actual strategy	Notes
When reading silently in English, if I don't understand something, - I look up unknown words in a dictionary... Agree 2.Neutral 3.Disagree -getting the overall meaning of text... 1. Agree 2. Neutral 3. Disagree	"... fumble into some clothes, and make their way to a cup of coffee and the morning newspaper" to start with, I don't know the meaning of "fumble"... *Here is the dictionary if you need to use it as I told you before.* " fumble...fumble... OK I got it..." *In another place, he found* another word " cheerful" " Cheerful" ... I need to look this up in the dictionary." Later he tried to guess " the word prosperity" is a new word ... so I stopped and looked at it again and preferred to finish the sentence and guess its meaning. I guessed it and I think it means "a period of time" and it matches the sentence perfectly... so I'll continue... Then later he said "It's a long paragraph, so I need to read it again" *What seems to be the problem?* "meaning difficulty mostly... so I'll refer to the dictionary and check some	Not consistent

	words before I read it again... I want to check "scapegoats," "humor," and "ridiculous.".	

Another subject's reported and actual reading strategies read:

Reported strategy	Actual strategy	Notes
When reading silently in English, the things that I do to read effectively are to focus on... - I look up unknown words in a dictionary... 1.Agree 2. Neutral 3. Disagree	"old people whose grown children pay little attention to them can chuckle at their neglect and loneliness" reads it twice *You read this sentence twice why?* I'm trying to understand it but still I don't... *What seems to be the problem?* -... "chuckle" I don't know what he means by "chuckle"... *What do you want to do?* Check it in the dictionary... "scapegoats" I don't know the meaning of this word... I'll look it up in the dictionary... *Do you usually check your dictionary?* " I check my dictionary once I read a new word... I feel nervous and worried if I don't do so...this is my habit and I think I feel secure to know every word in the topic ...	Same but inconsistent later on
When reading silently in English, the things that I do to read effectively are to focus on... - getting the overall meaning of the text... 1. Agree 2. Neutral 3. Disagree	*I noticed that you stopped at the word "sip" for a moment and then continued, why?* I didn't know the meaning of "sip", but I continued and guessed its meaning from the surrounding context...	Same but inconsistent with the other strategy

The previous quotes from the SRs' reported and actual reading strategies illustrate their apparent inconsistencies. As we can see, there was no pattern as to when to look up new words and when to focus on getting the overall meaning. We will find later in the quantitative analysis that they seem to follow a certain pattern where they prefer to refer to their dictionaries if they have a comprehension

difficulty and this difficulty is concerning a word meaning; otherwise, they would continue reading and hope for further clarification.

Unlike the SRs, the LSRs accumulated more varieties of contradictions. That is, they contradicted themselves in 12 places and more importantly in more strategies. For example, the SRs' contradiction was limited to two areas (categories 5 and 7), while we find that the LSRs contradicted themselves in categories 3, and 4, 5 and 7, 7 and 9. Although these categories seem similar at first glance, another look reveals that categories number 3, 4 and 5 are repair strategies while the other categories are perceived strategies in which subjects were asked about their perception of what they believed to be more effective. So, we find that the LSRs' contradiction was not limited to the repair strategies (as in the case of SRs) but also included what they perceived to be more effective in terms of reading policy. The following is an illustration of some of the LSRs' inconsistencies: (case 13)

Reported strategy	**Actual strategy**	**Notes**
When reading silently in English, things that I do to read effectively are to focus on... getting the overall meaning of the text... 1.Agree 2. Neutral 3. Disagree - understanding the meaning of each word 1. Agree 2. Neutral 3. Disagree	" this is new *-fumble-* ...I'll look it up in the dictionary" "... here is *scapegoat* again... I don't know its exact meaning, but I'll continue reading...OK I finished this paragraph and I understood the general meaning , so I don't have to check the dictionary."	Inconsistent

The preceding quote illustrates one of the LSRs' contradictions in what he perceived to be an effective reading method. It is clear that the above reader

contradicted himself when he reported that he focuses on getting the overall meaning of the text, but later on he reported another method, namely: understanding the meaning of each word which he perceived as an effective one.

Another example of the LSRs' reported and actual reading strategies further highlights the aforementioned contradiction where this reader (case # 20) reported his repair strategies, which contradicted one another especially in his actual reading. That is, when we examine his reported strategies, we find that he insisted on looking up unknown words if he didn't understand something. He confirmed this policy later on when he disagreed with the statement that says "if I don't understand something,... I keep on reading hoping for clarification further on...". So far, everything seems to be consistent, but in his actual reading, he followed another strategy. He stated that he tries to guess the meaning though he disagreed with this policy in his reported reading strategies.

Reported strategy	Actual strategy	Notes
When reading silently in English, if I don't understand something,... - I look up unknown words in a dictionary... 1. Agree 2. Neutral 3. Disagree When I read silently in English, if I don't understand something,... I keep on reading hoping for clarification further on... 1. Agree 2. Neutral 3. Disagree	"fumble is a new word... so as might have noticed, I consulted the dictionary. I usually check the dictionary and I feel some disappointment if I don't find what I'm looking for is not listed" If you didn't find the word fumble listed, what were going to do? " I usually suggest the meaning, try to guess it from the context. Checking it up in the dictionary helps me to stop worrying about the exact meaning. However, if I couldn't guess it and the word is not listed, then I give up reading." "Cartoons provide scapegoats... I need to check the dictionary to look up the word scapegoats."	Was not consistent

4.3.6 Use of global and local strategies:

The final comparison of SRs and LSRs' reported and actual reading strategies is their use- as a whole- of global and local strategies. The available data indicate that LSRs' use of global strategies is lower than that of the SRs'. That is, when we count their use of global strategies, we find that the SRs slightly outnumbered LSRs in terms of use of global strategies (27 times versus 21 times in the case of LSRs). As noted in the first part of the analysis, both groups used a mixture of both global and local strategies in their actual readings. The finding of this part confirms what has been indicated earlier and further suggests that both groups applied the interactive model in their reading. It appears that Stanovich's (1980) compensatory model of reading was applied in subjects' reading behavior. That is, the findings of this study support that of Stanovich in regards to informants' reliance on either higher or lower processing depending on their area of strength and their need at the time of reading. The following are examples of the SRs' and LSRs' use of global strategies:

SRs' use of global strategies:

Reported Strategy	Actual Strategy	Notes
When reading silently in English, the things that I do to read effectively are to focus on... -getting the overall meaning of the text... 1. Agree 2. Neutral 3. Disagree	I've encountered some difficult words, but I didn't pay much attention to them... *What do you mean?* Their specific meaning was not my concern...I tried to guess their meaning from the context itself *In another place he said:* I skipped the word "scapegoats" *Why?* I skipped it hoping to guess its meaning from the context...I mean I got the overall meaning of the.	Same

SRs' use of global strategies continued:

Reported Strategy	Actual Strategy	Notes
	paragraph and I didn't need to know the precise meaning of that particular word.	

The previous quote, as well as the following quote, illustrate SRs' and LSRs' awareness and application of a global strategy, which is "focusing on the overall meaning" of what they read. So, they didn't stop when they encountered unknown words. They rather continued on in their reading in the hope that they would get the overall meaning.

Example of the LSRs' use of global strategies:

Reported Strategy	Actual Strategy	Notes
When reading silently in English, things that I do to read effectively are to focus on... - getting the over all meaning of the text... 1. Agree 2. Neutral 3. Disagree	" this is new *-fumble-* ...I'll finish the sentence and try to guess its meaning from the context."	Inconsistent

It's worth mentioning, however, that each group seems to use different global strategies in its actual reading though they might differ in which strategy they use more (e.g. in item # 15- have sense of comprehension failure- LSRs used this strategy seven times compared to three in the case of SRs and in item # 3- use of past experience- SRs used this strategy more than the LSRs).

Unlike the use of global strategies, the overall use of local strategies in both groups is equal (13 times in both groups). Items that have been considered as local strategies are: item number 5 (looking up unknown words), item number 8 (focus on pronouncing each word), item number 9 (understand the meaning of

each word), item number 10 (focus on grammatical structure), item number 11 (focus on looking up words), item number 13 (focus on details to read effectively), and item number 16 (give up reading if not understood). Again, in light of Stanovich's model of reading, this use of lower processing is an indication of informants' interaction with the given text.

In the following quotes, we can see examples of the SRs' and LSRs' use of these local strategies. The first quote was taken from one of the SRs' actual reading in which we can see that he concentrated on the grammatical correctness of what he was reading. Amazingly, this strategy seemed to be a part of this reader's reading strategies as his actual reading matched his reported data.

Reported Strategy	Actual Strategy	Notes
When reading silently in English, the things that I do to read effectively are to focus on ... - the grammatical structures... 1. Agree 2.Neutral 3. Disagree	" Cartoons reflect the times and the troubles..." *Why did you stop? What are you thinking of?* "Troubles" Why did he use it as a plural? It's a mass noun and shouldn't be used as a plural. *What do you want to do about it?* "I might underline it...in fact, I'll underline it and read the sentence again. " Cartoons reflect the times and the troubles and worries of people." I suspect that " worries" here is the noun form of "worry." *And in another place he says:* "show people enjoying the good economic situation." ...the sentence should be "show people how to enjoy" rather than "show people enjoying the good economic situation." *Later he says:* "in hard times- time..." again, here he shouldn't have used the plural indicator with a mass noun...	Same

Similarly, the following quote is an example of LSRs' use of local strategies. In this example, it can be noted that this reader was paying more attention to the sentence structure where it seemed to create a reading problem for him. Again, this reader agreed with the importance of focusing on the grammatical structure of what he reads to read effectively.

Reported Strategy	Actual Strategy	Notes
When reading silently in English, the things that I do to read effectively are to focus on... - the grammatical structure... 1. Agree 2. Neutral 3. Disagree	Subject's comment after reading the sentence that says " old people whose grown children have neglected them can chuckle at their neglect" ...well the sentence structure is kind of difficult, so I wanted to make sure that I understood it and read it correctly..."	Same

As I mentioned earlier, I have just looked at their use of global and local strategies as a whole to avoid redundancy since this use was discussed in some detail in the first part.

4.4 Part III Quantitative analysis of the data

4.4.1 Introduction:

In this section, the collected data will be quantitatively analyzed using different statistical methods (e.g. regression, correlation test, percentage, and t-test) and will be represented in graphs and tables as needed. In doing so, more attention will be paid to comparing SRs' and LSRs' results for different variables with some occasional reference to all participants when needed. It should be mentioned, however, that variables' results would be discussed on the basis of their significance. In other words, variables that didn't yield significant results when they were tested will be ignored; and to do so, a 0.10 level will be chosen as a determining point of significance. The current section starts by explaining how SRs and LSRs were selected and how subjects were determined in terms of metacognitive awareness. Following this brief explanation are the results of different statistical tests along with their interpretations. As I mentioned earlier, all variables were tested whether for the whole population of the study or for a specific group (e.g. SRs or LSRs), but only variables that yielded significant results are discussed. Finally, the chapter concludes with a brief summary of the findings.

4.4.2 Selection of SRs and LSRs:

The selection of SRs and LSRs was determined on the basis of the lower and upper 25% quantile of the informants' scores. To do so, the lower 25 quantile

(0%- %25) of the subjects' scores was taken to represent LSRs group and the upper 25% quantile (%75- %100) as a representation of the SRs. The result of the quantile is as follows:

0% 25% 50% 75% 100%

1 5 6 8 13

Based on this distribution, students who scored ≤ 5 were considered LSRs and those who scored ≥ 8 were considered SRs (see Table: 4.3).

Table 4-3: distribution of all subjects' reading comprehension scores

Score	Number of students
1	6
2	3
3	5
4	7
5	14
6	12
7	13
8	11
9	4
10	4
11	4
12	6
13	1

The distribution of all subjects' reading comprehension scores, as we can see in Table 4.1, reveals a normal distribution of these scores. According to Fraenkel et al. (1990), when the majority of "the scores are concentrated in the middle of the distribution, and the scores decrease in frequency the further away from the middle" then the distribution curve is normal (p.148). The mean of all students' scores is (X= 6.5) and

we can see that the majority of the students (50 students) scored around 5 and 8. It's worth mentioning that there were 15 multiple-choice questions; so the highest students scored 13 out of a possible 15 and the lowest scored 1 out of a possible 15. So, with the exception of those who scored 1 and 12, we can say that according to the definition of the normal curve distribution, our informants' reading comprehension scores were normally distributed.

4.4.3 Determination of Subjects' metacognitive awareness:

The same procedure that was used to identify SRs from LSRs was applied again to determine students' metacognitive awareness. First, to distinguish between subjects' metacognitive awareness scores (for each statement, a 1 point was given when a subject matched what appeared to be global strategy, when a neutral answer was chosen a 0 point was given and when a subject chose what appeared to be local strategy a - 1 was given). For example, the following statement says:

"When reading silently in English, I have a good sense of when I do understand something and when I do not..."

1. Agree 2. Neutral 3. Disagree

This statement was considered global strategy. So, if a subject agreed with the statement, then a 1 point was given to him, if he disagreed a -1 point was given, and if a neutral choice was chosen a 0 point was given. However, not necessarily agreeing with the given statement resulted in gaining 1 point. In other words the 1 point was given to subjects' agreement to what appeared to be global strategies like the previous example

and the –1 point was given to choices that appeared to reflect local strategies (either by agreeing or disagreeing). For example:

"When reading silently in English, the things that I do to read effectively are to focus on..."
- being able to pronounce each whole word.

1. Agree 2. Neutral 3. Disagree

Unlike the previous statement, this one appears to highlight a local strategy, so if a subject agreed with it a –1 point was given to him. On the other hand, if he disagreed with it, a 1 point was given; the same procedure was followed in all statements. As far as the neutral response is concerned, a 0 point was given in all cases whenever this option was chosen.

Second, subjects who fell in the lower 25 quintile (-2 to –11) were considered metacognitively less aware (MLA) and those who fell in the upper 25 quintile (7 – 24) were considered metacognitively more aware (MA). Results of this distribution yielded:

0%	25%	50%	75%	100%
-11	-2	3	7	24

Based on this distribution, subjects who scored ≥ 7 were ranked as an MA and those who scored ≤ -2 were ranked as an MLA (see Table 4.4). As we can see, in this table the number of the MA students is slightly higher than that of the MLA (26 compared to 24). However, the number of those who fall in between is 40 students which is also expected to have the majority in the middle. It is worth mentioning, as I mentioned earlier, that the population of this study is small and the results of this distribution as well as the reading comprehension scores could have been different had a larger number of participants been available.

Table 4-4: distribution of all subjects' metacognitive awareness scores

Metacognitive awareness score	Number of students
-11	2
-10	2
-9	1
-8	3
-6	6
-5	3
-4	1
-3	2
-2	4
-1	4
0	6
1	3
2	4
3	8
4	5
5	5
6	5
7	5
8	6
9	2
10	6
12	1
13	1
14	2
17	2
24	1

4.4.4 Subjects' comprehension score in relation to their metacognitive scores:

Having separated SRs from LSRs and the MA from LMA, the researcher wanted to see if there was a correlation between students' comprehension scores and their

metacognitive awareness scores. To do that, the Chi-square test was performed and the result was ($X^2 = 3.29$, p-value = 0.069). Interpretation of this result indicates that the reading proficiency is not independent of the metacognitive awareness since the p-value is small (0.069). In other words, this result suggests that the SRs are metacognitively more aware of their reading strategies than LSRs who appeared to have less metacognitive awareness.

4.4.5 Analysis of the confidence statements:

Table 4-5: Percentage of subjects' responses to statements 1-6 When I read silently in English, I'm

Strategy		Agree	Neutral	Disagree
1. able to anticipate what will come next in the text	(all subjects)*	56	29	16
	(SRs)	43	40	17
	(LSRs)	66	23	11
2. able to recognize the difference between main points and supporting details				
		63	19	18
		70	20	10
		66	14	29
3. relate information which comes next in the text to previous information in the text		70	18	12
		67	23	10
		71	17	11
4. questions the significance or truthfulness of what the author says		57	23	20
		67	17	17
		49	26	26
5. use my prior knowledge and experience to understand the content of the text		79	16	6
		90	7	3
		71	20	9
6. I have a good sense of when I understand something and when I don't		77	12	11
		87	10	3
		71	11	17

The above six statements are related to subjects' perception about their self-confidence. In these statements, the more they agree with the statement the better their self-confidence. We find that when all subjects were included, their perception of their confidence is higher than 60% except in the first statement (the ability to anticipate what will come next). Their disagreements to all statement is not higher than 20% and even far

*All subjects: all 90 subjects were included in this calculations, SRs: only skilled readers, and LSRs: only

less in regards to some statements (e.g. using the prior knowledge). Furthermore, the percentage of their neutral perception is less than 20% to four statements and less than 30% in the other two.

However, when the SRs' and LSRs' perception of the same statements was calculated, different results were found. For instance, the LSRs' perception was higher than the SRs' (60% compared to 43% and 71% compared to 67% respectively) in regards to the following statements:

able to anticipate what will come next in the text; and

relate information which comes next in the text to previous information in the text.

On the other hand, SRs appeared to be more confident in their responses to the other four statements namely:

able to recognize the difference between main points and supporting details;

question the significance or truthfulness of what the author says;

use my prior knowledge and experience to understand the content of the text; and

have a good sense of when I understand something and when I don't.

Interestingly enough, results of the first statement (able to anticipate what will come next in the text) show that 40% of the SRs remained neutral with only 3% less than those who agreed to the statement. Moreover, we find that the difference between LSRs' and SRs' perception of statement number three (relate information which comes next in the text to previous information in the text) and SRs and LSRs' perception of the second statement (able to recognize the difference between main points and supporting details) is only 4% in both statements which is not, I think, that high. Though it might not be that high, one can say that the overall results of the same table indicate that SRs are more confident in

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less skilled readers.

regards to distinguishing between main points and the supporting details, questioning what the authors says, using their prior knowledge, and in realizing when a comprehension failure occurs. On the other hand, LSRs appeared to be more confident than SRs in their perception when it comes to the other statements (anticipating what comes next and relating information that comes next to the previous one).

4.4.6 Analysis of the repair strategy statements:

Table 4-6: Percentage of subjects' responses to statements 7-11 (repair statements) When I read silently in English, if I don't understand something, I

Strategy	Agree	Neutral	Disagree
7. keep on reading and hope for further clarification later on... (all subjects)	62	9	29
(SRs)	60	13	27
(LSRs)	60	9	31
8. reread the problematic part	84	9	7
	70	17	13
	91	3	6
9. go back to a point before the problematic part and reread from there	67	17	17
	70	13	17
	69	17	14
10. look up unknown words in a dictionary	81	14	4
	83	10	7
	83	11	6
11. give up and stop reading...	2	12	68
	0	10	90
	6	17	77

Statements 7 through 11 reflect subjects' perception of their repair strategies when comprehension failure occurs. As can be noted, all results seem to be close to one another (when all subjects were included or when SRs were separated from LSRs) with the exception of the eighth and the last statements (look up unknown words in a dictionary, and give up and stop reading respectively). As far as the seventh statement (keep on reading and hope for further information later on) is concerned, 60% of SRs and 60% LSRs favored it compared to 27% and 31% respectively who didn't favor this strategy. Interestingly enough, it appears that if the comprehension problem is unknown word/s, the chance of consulting a dictionary right away is higher than that of the keep on

reading strategy (83% in statement 10 compared to 60% in statement 7). Results of SRs and LSRs in both statements are the same, which might reflect subjects' reliance on their dictionaries.

Another interesting finding can be seen in the last statement (give up reading) where 0% of the SRs perceived the "give-up" strategy as a favorable one to a comprehension problem compared to 6% of LSRs. To some of the LSRs, this strategy seems to be more than perception where it was applied in reality in one of the subject's actual reading.

4.4.7 Subjects' perception of different strategies in terms of effectiveness:

Table 4-7: Percentage of subjects' responses to statements 12-20 When I read silently in English, the things that I do to read effectively are to focus on

Strategy		Agree	Neutral	Disagree
12. mentally sounding out parts of the words	(all subjects)	37 %	28 %	36 %
	(SRs)	40 %	23 %	37 %
	(LSRs)	6 %	17 %	77 %
13. understanding the meaning of each word		46 %	11 %	43 %
		30 %	10 %	60 %
		23 %	37 %	40 %
14. getting the overall meaning of the text		97 %	2 %	1 %
		97 %	3 %	0 %
		54 %	11 %	34 %
15. being able to pronounce each whole word		48 %	20 %	32 %
		33 %	23 %	43 %
		94 %	3 %	3 %
16. the grammatical structures		40 %	37 %	23 %
		33 %	37 %	30 %
		46 %	17 %	37 %
17. relating the text to what I already know about the topic		72 %	22 %	6 %
		87 %	10 %	3 %
		37 %	34 %	29 %
18. looking up words in the dictionary		68 %	16 %	17 %
		60 %	27 %	13 %
		66 %	26 %	9 %
19. the details of the content		48 %	26 %	27 %
		37 %	37 %	30 %
		63 %	11 %	26 %
20. the organization of the text		30 %	40 %	30 %
		27 %	40 %	33 %
		31 %	37 %	31 %

Statements 12 through 20 contain what we categorize "global strategies" (e.g. relating the text to what I already know" and what we rank as "local strategies" (e.g. mentally sounding out parts of the words, understanding the meaning of each word, being able to pronounce, being able to pronounce each whole word, etc). In regards to the global strategies (getting the overall meaning and relating the text to what I already know), it can be noted that SRs' perception of these two strategies was higher than that of the LSRs (97% compared to 54% and 87% compared to 37% respectively).

As far as the local strategies are concerned, SRs' percentage is higher than that of the LSRs in two of these strategies namely: mentally sounding out parts of the words and understanding the meaning of each word. Other than two strategies, LSRs were found to rate the rest of the local strategies (i.e. being able to pronounce each word, focusing on the grammatical structures, looking up words in the dictionary, the detail of the content and the organization of the text) higher than SRs in term of their effectiveness. Percentage wise, it is worth mentioning that in some strategies the difference between SRs and LSRs is quite small (i.e. looking up words in the dictionary and the organization of the text); while in others, a big difference was found. Another thing that should be mentioned here is the fact that we are looking at their perception of what causes them to read effectively. On this ground, we might say that if subject "A", for example, found that applying a certain strategy such as focusing on the details of the content helped him to read effectively and this strategy doesn't cause him any reading difficulty, then we can't say his reading performance is affected.

Aside from the notion of difficulty and effectiveness, it is clear that the results were in favor of the SRs as they included two global strategies compared to none for the

LSRs and only two local strategies compared to six in the case of the LSRs. This result along with the results of subjects' use of local and global strategies, as indicated in the first and second parts, reflects a specific kind of interaction with the text explained by Stanovich's (1980) Compensatory Model of reading. As a matter of fact, the findings of this study are in line with the findings of Clarke (1986) and that of Carrell (1989). As indicated by Clarke (1986), the language constraints, which is to say the limited control of the target language, causes L2 students to incorporate more lower level strategies. Clarke's remarks in regards to the language constraints do not contradict Stanovich's interpretation of interaction. As a matter of fact, his remark along with the findings of this study, support Stanovich's view of interaction. As mentioned earlier, the SRs used two local strategies compared to six in the case of the LSRs. This might suggest that the LSRs relied on their lower level processing to compensate for their lack of higher level processing while the SRs relied more on their higher information.

Another thing that should be added here is the fact that students may report a certain strategy to be effective but that does not mean that they necessarily use it. In fact they might indicate their knowledge of it, but in reality they don't apply it (Baker and Brown, 1984). Thus, we should refer to Paris et al.'s (1983) categorization of knowledge as being, among other categories, "conditional". In this regard, they say that knowledge refers to the reader's awareness and use of a certain strategy and why.

4.4.8 Subjects' perception of what makes reading difficult:

Table 4-8: Percentage of subjects' responses to statements 21-28 When I read silently in English, things that make reading difficult are...

Strategy		Agree	Neutral	Disagree
21. the sounds of the individual words	(all subjects)	18	9	73
	(SRs)	20	3	77
	(LSRs)	20	9	71
22. pronunciation of the words		47	12	41
		47	10	43
		43	9	49
23. recognizing the words		76	14	10
		80	10	10
		71	14	14
24. the grammatical structures		59	22	19
		57	23	20
		63	20	17
25. the alphabet		4	16	80
		17	83	0
		9	14	77
26. relating the text to what I already know about the topic		31	24	44
		33	23	43
		31	26	43
27. getting the overall meaning of the text		57	12	31
		63	17	20
		54	14	31
28. the organization of the text		57	24	19
		63	23	13
		57	29	14

The above table (Table 4.8) concerns subjects' perceptions of what makes reading difficult for them. Two of these strategies are among what we call global strategies "relating the text to what I already know about the topic" and "getting the overall meaning of the text". As for the first strategy, only a slight difference was found between the two groups; both groups seemed to consider it a less difficult strategy than the other one "getting the overall meaning". In other words, both groups appear to perceive "getting the overall meaning of the topic" as a difficult strategy compared to the "relating the text to what I already know about the topic" strategy. Interestingly enough, percentage of the SRs who perceived it as difficult is higher than that of the LSRs (63% vs. 54%).

As far as the rest of the strategies are concerned, four of them (recognizing the words, the grammatical structure, getting the overall meaning of the text, and the organization of the text) were perceived to be difficult by both groups; one appeared to be in the middle (pronunciation of the words); recognizing the alphabet, and the sound of the individual words were considered easy strategies. As for the grammatical structure and the text organization, I think that they are common difficulties for all Arab students. It is no surprise, I believe, since the two languages- Arabic and English- use different set of grammatical rules (e.g. the latter follows SVO order whereas the former uses VSO) and has opposite directionality (right to left in Arabic vs. left to right in English). Not to mention the nature of the script which is completely different in the two languages. Furthermore, the two languages differ in text organization. For instance, English uses more or less the following style: the topic sentence is usually introduced in the first paragraph or the second, then the supporting details, followed by the conclusion. That is not necessarily the case in the Arabic style where you might read a long introduction before you know what the writer is going to talk about. Taking these differences between the two languages into consideration, it is not surprising that learners face such difficulties. As far as the looking up words and getting the overall meaning of the text are concerned, these difficulties might be traced to previous English teaching methodologies -especially in mid and high schools- where students were taught to pay more attention to finding individual meanings of difficult words rather than getting the overall meaning of the text. Back in my high school years, our concern was mostly devoted to finding words' meaning as we used to stop our teacher regularly to ask about individual words' meanings. Not only that, but also we used to write the meaning of each word in Arabic to

the extent that in some pages you hardly could see the English text. As a result, I don't recall finishing any of the assigned books, which were intended to improve our reading comprehension skills. I think that high and middle school teachers contributed to that extensive reliance on meaning at the word level since they indirectly encouraged us to do so by giving us the Arabic meaning of the English words rather than training us to guess their meaning or the overall meaning of the whole paragraph. Another explanation of such difficulties might be an indication of informants' lack of sufficient vocabulary knowledge in the target language and that could cause, according to Kern (1989), a major problem when reading.

Generally speaking, the available data reveal that strategies that were considered difficult appear to be either of a syntactic/word level (i.e. grammar, pronunciation) or of a meaning level such as relating the text to what they already know.

4.4.9 Subjects' perception of a good reader:

The following Table 4.9 deals with subjects' perception of what, in their perception, a good reader is. As can be seen in this table, statements varied from reader's ability to decode words and sounds to a higher level of interaction such as "understanding the overall meaning or integrating the text with the preexisting".

Table 4-9: Percentage of subjects' responses to statements 29-36 The best reader I know in English is a good reader because of his/her ability to

Strategy		Agree	Neutral	Disagree
29. recognize the words	(all subjects)	89	4	7
	(SRs)	83	3	13
	(LSRs)	89	6	6
30. sound out words		70	12	18
		63	10	27
		69	11	20

31. understand the overall meaning of the text	81 77 83	17 23 14	2 0 3
32. use a dictionary	39 43 34	26 20 31	36 37 34
33. guess at word meaning	71 73 69	16 17 17	13 10 14
34. integrate the information in the text with what he/she already knows	69 77 60	16 13 14	16 10 26
35. focus on the details of the content	47 43 54	28 17 29	26 40 17
36. grasp the organization of the text	67 63 63	18 27 14	16 10 23

Analysis of this table yielded close results in all statements. Furthermore, results were close when including or excluding "all subjects" in our calculation. This result might support our findings in the first part of the analysis as subjects used a mixture of top-down and bottom-up strategies in their actual reading. Subjects highly agreed to three interactive-type statements (i.e. understand the overall meaning of the text, guess at word meaning, and integrate the information in the text to what he/she already knows). By the same token, they agreed to other statements (i.e. recognizing words, sound out words, use a dictionary, focus on the detail of the text, and grasp the organization of the text) all of which can be categorized as "local strategies". SRs' disagreement with two of these strategies (use a dictionary and focus on the detail of the text) is relatively high, 37% and 40% respectively, compared to only one strategy in the case of the LSRs (use of the dictionary 34%).

4.4.10 Informants' self-rating:

In one of the demographic questions, students were asked to rate themselves as readers. That is, on a ten-point scale they were asked to circle the number that best

describes their reading ability. 0 score represents a beginning reader while 10 denotes an advanced and more confident reader (appendix C). T-test was used to see if there is a significant difference between informants' self-confidence and their reading ability. Results of this test show that SRs are more confident than LSRs (t = 1.63, p-value = 0.054). Since the p-value is small, we can conclude that there is a relationship between subjects' scores and their self-rating.

Subjects were asked also in the demographic questionnaire to indicate whether they engage in non-textual reading activity in English language or not. To analyze the gathered information, the two-sample t-test was applied and the results yielded (t=-1.65, p-value =0.052). This indicates that SRs do engage in non-textual (extra reading) more than the LSRs do.

Later, the correlation test was applied to see if there is a relationship between the informants' extra reading and their self-confidence. Following is the result of that test:

Table 4-10: Correlation between subjects' extra reading and self-confidence

Sample	Correlation	Statistic	p-value
All informants	0.77	10.8	0
SRs	0.86	6.69	0
LSRs	0.69	5.8	0

The above table suggests that there is a significant positive correlation between extra reading and self-confidence. The correlation is higher for SRs (0.86) compared to LSRs (0.69). In other words, this test suggests that informants who do outside classroom reading appear to have more self-confidence than those who don't.

It was predicted that there is a positive correlation between informants' scores and their self-confidence. To test that hypothesis, a correlation test was applied for all

subjects and the result is (correlation = 0.23, t-value = 2.16, p-value = 0.016). Since the p-value is very small, the hypothesis is confirmed significantly. The same thing is true for SRs and the result is correlation = 0.24, t-value = 1.28, p-value = 0.099, but this is not the case for LSRs corr=0.20, t=1.18, p=0.12. That is, LSRs self-confidence doesn't affect their scores.

To test the relationship between informants' extra reading and their scores (which is expected to be positive), the correlation test was applied and the result was: correlation = 0.72, t-value = 10.05, p-value = 0. It is obvious that there is a strong positive correlation since the p-value is 0. The same thing is true for SRs and LSRs.

4.5 Conclusions of the analysis

4.5.1 Conclusion of part I:

Analysis of this part showed that there was no clear distinction between skilled and less-skilled readers in term of their use of local and global reading strategies. Results of their actual reading strategies indicated that readers in both groups used a mixture of top-down and bottom-up reading models as they interacted with the given text; and that less-skilled readers- to some extent- were slightly different in their use of effective reading strategies from the skilled readers. Results of this kind of interaction are in line with Stanovich's (1980) view of reading explained in his Interactive Compensatory Model of reading. In this model, individual differences between poor and skilled readers

take the form of their reliance on either their lower or higher information to compensate for any weakness they might have.

Further, analysis of the available transcripts suggests that skilled readers outperformed less-skilled readers in eliciting effective strategies such as comprehension monitoring, recall of past experience, and questioning the presented ideas. This finding is in line with the findings of Jimeneze et al. (1996) and Carrell (1989) presented earlier in the literature review. As I mentioned in chapter II, Jimeneze et al. found that successful Latina/o readers used effective strategies by "Invoking prior knowledge, inferencing, questioning, using context, and monitoring" as opposed to the less successful readers who did not use these strategies except monitoring their problems, nor did "they know how to use knowledge of Spanish to enhance their comprehension of English text and vice versa" (p.106). Variance in skilled readers and less skilled readers' use of effective strategies is in line with the outcome of research in this domain (i.e. Baker & Brown, 1984; Paris, Lipson, & Wixson, 1983; Olashvasky, 1976-1977; Kavale & Schreiner, 1979; Schommer & Surber, 1986). However, some researchers (e.g. Clarke, 1980) point out to interference of reader's L2 as a possible cause of relying on certain strategies over the others. As explained by Clarke (1980), the "limited control over the language short circuits the good reader's system, causing him/her to revert to poor strategies when confronted with a difficult or confusing task in the second language" (p.206.) Others (i.e. Carrell et al., 1993) found out that their subjects' reading strategies differed in Chinese– their mother tongue- but with some exception were the same in their target language (English). Hence, the researcher does not rule out the possible impact of the subjects'

mother tongue as well as that of their target language as a possible cause of such performance.

Results of the study also showed that SRs monitored their comprehension more than did the LSRs. This result was based on the analysis of readers' comprehension monitoring on the paragraph level. Realizing a comprehension failure is important, but of equal importance is the knowledge of what to do about it (knowing "about" and knowing "how" as explained by Wagoner, 1983). Fix-up strategies that had been used by those who appeared to monitor their comprehension in both groups seemed to revolve around, but are not limited to, rereading, concentration and speed adjustment, and lookin up unfamiliar words.

4.5.2 Conclusion of part II:

Analysis of part II showed that SRs' reported and actual reading strategies seemed to match one another rather than to differ. Although the difference between SRs and LSRs' strategies matching was not that high, it was clear that SRs outperformed the LSRs in other areas. For example, differences between subjects' reported and actual strategies were found to be in favor of SRs as well as the number of contradictions between them. Moreover, the number neutrality (i.e. selection of neutral options to certain strategies' statements in the MCQ, but application of these strategies in the actual reading) is higher in the case LSRs. Finally, the overall use of global strategies was found to be slightly higher in the case of SRs though the local strategies' use was equal in both groups.

The finding of this part seems to parallel the findings of previous research (e.g. Carrell, 1989; Block, 1992; Jimmenez 1992. It also goes hand in hand with the findings of Zaburcky & Ranter (1989); Kavale & Schreiner (1979); and Olshavaky (1976-1977) where skilled readers were found to use certain strategies significantly more and were found to do better in giving accurate verbal reports of passage inconsistency.

Analysis of subjects' comprehension monitoring, prediction, imaging, questioning and ideas' connection appear to contradict the reported findings of Knight et al. (1985) and Padron et al. (1986) in regards to bilinguals' use of these strategies. As I mentioned in the second chapter, they reported that none of the bilingual children mentioned the "imaging", "noting/searching for salient details", or "predicting the outcome". However, both groups in the current study demonstrated their ability – in various degrees- to apply these strategies in their actual reading.

Subjects from both groups failed to report certain strategies when they were asked about them in the MAQ; hence, a number of neutral choices in the reported data were found. Interestingly enough, the comparison of subjects' actual and reported data revealed that some subjects were found to apply these reading methods despite that fact that they chose the "neutral" options in the MAQ. It's worth mentioning, however, that the number of the neutral responses was higher in the case of the LSRs. Generally speaking, this failure can be attributed to either their lack of metacognitive awareness or the hidden nature of some of the available strategies that seem to operate automatically when needed (Rumelhart, 1980). The amazing thing is that research in comprehension monitoring appears to limit this automatic processing to skilled readers only (e.g.

Rumelhart, 1980; Anderson, 1980) but the findings of the current study suggest that less-skilled readers seem to share skilled readers in this regard.

As far as the overall use of global and local strategies is concerned, the finding of this part indicate that the SRs were slightly higher in their use of global strategies. This result appears to correspond with Kletzin's (1991) study who found that good readers used more types of strategies and to that of the Carrell (1989) who found that good readers outperformed poor readers in their use of global strategies.

4.5.3 Conclusion of part III:

This part resembled the quantitative analysis of the study as the final part. As mentioned in this part, all 90 participants were included in the analysis. Informants' reading ability (skilled readers vs. less-skilled readers) as well as their metacognitive awareness were determined on the basis of lower and upper 25% quintile. Findings of this part are summarized in the following:

First, the result of the Chi-square which was used to see if there was a relationship between subjects' reading comprehension scores and their metacognitive awareness scores insinuates a positive relationship between subjects' scores and their metacognitive scores; the higher the reading comprehension score the better the awareness. Generally speaking, this suggests that the SRs were metacognitively more aware than the LSRs. A similar finding discovered also in the qualitative analysis was that the differences between SRs' reported and actual reading strategies were fewer than that of the LSRs' (3 compared to 15); that might support the quantitative findings in regards to the LSRs' lack of metacognitive awareness.

Second, it was found that SRs' and LSRs' metacognitive scores correlated positively with their extra reading (0.71 and 0.54 respectively). As can be noted, the correlation was higher in the case of the SRs, which might be an indication of the contribution of the non-textual reading to sharpening subjects' metacognitive awareness.

Other variables yielded interesting results as well. In the confidence variable, for example, the subjects' perceptions of their self-confidence was higher than 60% in most of the statements. However, different results were found in regards to SRs' and LSRs' separate perceptions. For instance, SRs were found to be more confident in regard to their ability to:

- recognize the difference between main points and supporting details;
- question the significance or truthfulness of what the author says;
- use their prior knowledge and experience to understand the content of the text; and
- know when they understand something and when they don't.

Interestingly enough, SRs outperformed the LSRs in the above strategies except the first one. That is, as mentioned in the first part of the analysis, SRs utilized comprehension monitoring, recall of past experience and questioning the presented ideas more than the LSRs did.

On the other hand, the LSRs' perception of their self-confidence was stronger than that of the SRs' in only two places namely: their ability to

- anticipate what will come next in the text; and
- relate information which comes next in the text to previous information in the text.

So, as can be noted, the SRs seem to have more self-confidence in their perception of more global strategies than the LSRs. Not only that, but they also have

more confidence in utilizing these strategies in real situations. These findings are in line with Jimeneze et al.'s (1996) and Carrell's (1989) findings in regard to the less proficient readers' use of fewer effective strategies.

As far as the repair strategies are concerned, results indicated that SRs and LSRs were somewhat close in their perception of what reading strategy they would employ if they don't understand something. Interestingly enough, both groups seemed to rely on their dictionaries to solve a comprehension ambiguity if it concerns an unknown word. That is, 60% of each group reported that they would "keep on reading", but 83% of each group reported that they would consult their dictionaries to "look up unknown words". It might be, as I mentioned earlier in the analysis of previous parts, that the impact of previous education (e.g. middle and high schools teaching methods) contributed to Saudi students' preference/reliance on dictionaries to find out meanings of difficult words.

Amazingly enough, 6% of the LSRs seemed to have a strange option as a solution to their comprehension ambiguity; this option is to "give up reading". Although, this percentage seems to be low, it shouldn't be overlooked for two reasons: first and foremost it didn't seem to be only a perception of a reading strategy as one of the LSRs applied it in reality during the data collection. Second, none of the SRs reported using that strategy nor used it in reality, which opens our eyes to an existing problem that should accounted for.

In terms of informants' perception of "effective strategies", results seemed to be in favor of the SRs. For example, the SRs considered the following strategies to be effective:

- getting the overall meaning; and

In terms of informants' perception of "effective strategies", results seemed to be in favor of the SRs. For example, the SRs considered the following strategies to be effective:

- getting the overall meaning; and
- relating the text to what they already know.

In comparison, the LSRs perceived the two previous strategies lower than did the SRs in terms of their effectiveness (54% compared to 97% and 37% compared to 87%). However, knowledge of a certain strategy or its effectiveness doesn't mean utilization of this strategy as I mentioned in the analysis of this part and referred to Paris et al. (1983) and Baker and Brown (1984). This note is not limited to LSRs only. In fact it applies for the SRs as well.

While the two previous strategies are considered "global strategies", other differences were found in what we might consider "local strategies". For example, SRs' perception was higher than that of the LSRs in the following strategies only:

- mentally sounding out part of the words; and
- understanding the meaning of each word.

But the LSRs perception of the following strategies appeared to be higher than that of the SRs:

- being able to pronounce each word;
- focusing on the grammatical structures;
- looking up words in the dictionary; and
- focusing on the details of the content and the organization of the text.

the words". As far as the meaning difficulty is concerned, they reported that "getting the overall meaning of the text" was a cause for their reading difficulties.

Concerning subjects' perception of a good reader, all informants' results were close. Their perception of a good reader ranged from his ability to decode words and sounds to a higher level of interactive strategies. For example, a good reader was viewed as such based on his ability to do the following interactive strategies:

- understands the overall meaning of the text;
- guesses at word meaning; and
- integrates the information in the text to what he/she already knows.

In a like manner, they perceived a good reader to be such on the ground that he is able to do the following decoding strategies:

- recognizes words;
- sounds out words;
- focuses on the details of the text; and
- grasps the organization of the text.

It was concluded that such perception might be embedded in their actual reading behavior. As I mentioned in the first part of the analysis, both SRs and LSRs applied a mixture of global and local strategies in their actual reading.

Finally, a positive result was found as the subjects' comprehension scores were tested against their self-rating scores. It was found that the SRs appeared to have more self-confidence as readers than the LSRs.

4.5.4 Discussion of the Hypotheses

The Chi-square test which was applied to the gathered data indicated that there was a correlation between students' reading comprehension scores and their metacognitive awareness and that the higher the score the better the students' metacognitive awareness. Quantitatively speaking, H1, which predicted this correlation, was accepted. In fact, it was found in the analysis of the second part that the differences between SRs' reported and actual reading strategies were fewer than those of the LSRs (3 compared to 15) which could be attributed to the LSRs' lack of metacognitive awareness.

As far as the second hypothesis is concerned, the analysis of the qualitative data indicated that SRs had higher similarities and fewer differences in their reported and actual reading strategies when compared with those of the LSRs. Although the LSRs' actual and reported strategies corresponded in some places, the hypothesis didn't rule out that correspondence completely but stated that it would be higher in the case of the SRs. Thus, this hypothesis is also accepted.

Hypothesis three, which predicted that skilled readers would interact with the text and apply the "top-down" model in their actual reading, is rejected. As noted in the analysis of the first part, there wasn't a clear demarcation as to the determination of interaction with the given text as well as to the application of the top-down and bottom-up models since both groups applied a mixture of the two models. In some instances, the SRs applied the top-down model in their actual readings but they also applied the bottom-up model as well. This type of application is known as the "Compensatory" interaction (Stanovich, 1980) and will be explained again as I discuss the fourth hypothesis.

In regard to the fourth hypothesis, which predicted that less-skilled readers would be text bound readers and would incorporate the "bottom-up" model more frequently in

their actual reading, this hypothesis, is rejected since the LSRs were not totally passive readers who didn't interact with the given text. It's true that some of the LSRs showed some kind of this passiveness as they indicated their boundness to the provided information, but so did some of the SRs. As far as the second part is concerned, the same thing that was said about the SRs in hypothesis three could be repeated here. As I said earlier, there was no clear difference between the two groups' use of top-down and bottom-up models and both groups applied a mixture of the two models in their actual readings. It appears that each group was interacting with the text in a manner that suited their need and areas of strength. This type of interaction is best explained by Stanovich's (1980) Compensatory Model of reading. According this model, readers differ in their reliance on either lower or upper information, which is controlled by their individual needs.

Hypothesis five predicted that SRs would have more self-confidence in regard to their reading abilities than that of the LSRs. This hypothesis is accepted. As I mentioned in the analysis of the third part, the result of the t-test which was applied to test this hypothesis shows that there is a correlation between subjects' self-rating and there comprehension scores, and that the SRs were found to be more self-confident than the LSRs.

Finally, hypothesis six is partially accepted. This hypothesis anticipated that skilled readers would be more consistent in their reported reading strategies when matched with their actual ones as opposed to the less-skilled readers who would be less consistent. To test this hypothesis, the researcher looked at similarities, differences, neutrality, and inconsistencies/contradiction in subjects' reported and actual readings. It

appeared that the SRs and LSRs were close in terms of similarities (46 compared 41 respectively). However, the mismatching, the neutrality and contradiction seemed to be higher in the case of the LSRs. In light of these findings, it can be said that this hypothesis was partially but not totally accepted.

Chapter 5

5 Conclusion, Implications and recommendations for future research

5.1 Introduction:

Mainly, this study set out to explore Saudi students' perceptions of their metacognitive awareness as they read in English as a foreign language. Further, it looked closely at the actual and reported reading strategies of skilled and less-skilled readers to see the kinds of similarities/differences between them. Thus, the study employed qualitative and quantitative methods of research in collecting its data. Results of the data analysis were highlighted in the previous chapter.

This chapter starts by highlighting the major findings of the study in its conclusion. Following the conclusion, is a discussion of the implications of the study. Finally, it concludes with the researcher's recommendation for future research.

5.2 Conclusion:

Due to the limitation of this study, interpretation of the findings is limited to its population only. With that in mind, it is obvious that one of the major findings was the subjects' use of mixture strategies in their actual readings. Theoretically speaking, the subjects' application of this mixture is in accordance with the current view of reading which defines reading as an active process (Rumelhart, 1980). More importantly, it appears to be in opposition to those who viewed reading as a decoding process (e.g.

Gough, 1976) as it adds more weight to the scale of interactive models of reading. Specifically speaking, subjects' applications of higher and lower information appear to support Stanovich's (1980) assumption of an integrative compensatory model of reading and contradict that of Mitchell's (1982). Unlike Mitchell (1982) who believes that the interaction between visual and non-visual information is equal, Stanovich believes that this interaction is based on readers' need and area of strength. In other words, he assumes that readers compensate for their weakness in higher information, for example, by relying more on other resources (e.g. their decoding process).

While this finding is in line with Stanovich's model, subjects' reliance appeared to be affected by two variables: namely, the possible transfer of L1 reading strategies to L2. In this regard, all foreign language learners are subjected to its effect in various degrees. The other, however, is exclusive to this group of subjects and to all Arab students pertaining to the uniqueness of the Arabic language orthographically and typologically (VSO vs. the English structural sequence SVO). Aside from the apparent difficulties associated with orthographic differences between L1 and L2 (Grabe, 1991; Hudson, 1998) as well as the typological difficulties (Koda, 1989), it was not possible to determine whether subjects actually transferred some of their L1 reading strategies to their reading strategies in English. More likely, subjects as fluent readers of Arabic, might have transferred some of their L1 reading skills, but because of their lack of fluency in L2, and the possible L1 interference, they demonstrated Stanovich's compensatory reading model. Since language transfer/interference was beyond the scope of this study, one can only speculate that some transfer/interference may have occurred between the two languages. An example of such possible influence, as we noted in the

actual reading analysis, is that some readers had to switch back and forth between Arabic and English and to think in Arabic to understand what they were reading. Thus, further research, as will be suggested later, to investigate this phenomenon, is definitely needed. What is unique about the subjects of this study, however, is their relative reliance on some of the decoding strategies (i.e. looking up unfamiliar words encountered while reading and paying more attention to the grammatical structure of the given passage). This reliance, or reading behavior as it is called by Hulstijn, (1993), was obvious especially in the case of the LSRs' group, but it can be justified if we take into consideration that traditional methods were extensively used in the Saudi intermediate and high schools. To be more accurate, traditional approaches in teaching English were used by English language teachers in Saudi middle and high schools; these approaches tended to put more emphasis on grammar lessons and vocabulary knowledge at the expense of other global strategies (e.g. guessing, understanding the overall meaning, questioning etc...). To be fair and not to put all the blame on middle and high school English teachers, another possible reason for such reliance may be related to Arabic reading text-books in grades 1-12. In other words, the organization of reading lessons in these levels tend to follow the following pattern: reading passage first, followed immediately by a list of unfamiliar words' meanings, and a set of comprehension questions that rarely encourage readers to interact with the text (not to mention that, in most cases, students are required to memorize both the answers to these questions and the words' meanings). So, subjects might have transferred at least this reading strategy into their L2 reading behavior.

Another important finding of this study, as noted in part I and II of the analysis, is the subjects' applications of global strategies (i.e. connecting ideas, predicting what comes next, questioning, imaging). Contrary to the existing research (i.e. Knight et al.,1985; Padron et al., 1986), subjects of this study were found to use these strategies in their actual readings, although the SRs group appeared to outperform the LSRs group in some of these strategies. Another counter evidence to their studies was also found in subjects' fix-up strategies as they did one or more of the following to fix-up their comprehension difficulties: rereading, concentration and speed adjustment, and checking up unfamiliar words.

We noted also that the findings of the MAQ were relatively close between SRs and LSRs. Although this relative closeness is surprising, it is possible that readers are consciously or unconsciously choosing different strategies for L1 and L2 reading. Such differences in using different strategies in L1 and similar strategies in L2 was found in previous research, as mentioned in chapter II (i.e. Carrell et al. 1993). Since the current study was limited to L2 reading, it is hard to determine whether this closeness in subjects' perception is limited to L2 only. Thus, future research will be suggested in regard to this matter.

Finally, previous research on comprehension monitoring (e.g. Rumelhart, 1980, Baker and Brown, 1984) indicated that skilled readers tend to operate in automatic processing until something goes wrong to alert them. Findings of this study propose that this automatic processing is not limited to proficient readers only, but applies to LSRs as well. For instance, the analysis of subjects' neutrality in their reported data to some reading strategies but the application of these strategies in their actual reading was found

in both groups' data not only in the SRs'. Another contribution to the existing research pertains to the current study's methodological aspect. Although limited to a certain group, I think that the combination of quantitative and qualitative approaches in this study has provided tangible evidence of how individual Saudi students' perceptions of their reading strategies is similar to/different from their actual reading strategies.

5.3 Implications:

It is imperative to know when a comprehension failure occurs, but equally important is the knowledge of the available strategies and when to use them to fix this comprehension failure. As mentioned in the literature review section, Baker and Brown (1984) point to the importance of knowing when to use a certain strategy, which strategy seems to be valuable, or even if a remedial action is necessary. Thus, one implication of this study is to teach poor readers how to monitor their comprehension and which strategy they might use and when to use it upon detecting a comprehension failure. Furthermore, the research of El-Hindi (1996) and Moholic (1994) suggests some methods that might enhance readers' metacognitive awareness. El-Hindi (1996), for instance, found that a training program that was given to 43 participants yielded positive results in participants' metacognitive awareness. Similarly, Miholic (1994) suggested an inventory that consists of ten multiple choice questions to increase students' metacognitive awareness which in turn provides firsthand information to teachers concerning their students' needs. Therefore, students' metacognitive awareness can be promoted through direct instruction as argued by El-Hindi (1996) or through other means of instruction

such as Miholic's (1994) metacognitive awareness inventory. A remedial class maybe needed to help students who might lag behind in terms of metacognitive awareness. Ngandu (1977) found that poor readers benefited from remedial classes and became more aware of effective reading behavior. Perhaps reading strategy training programs- especially for poor Saudi student readers- might yield positive results. Remedial classes can be offered for them to increase their metacognitive awareness of their reading strategies and their use of effective strategies.

In this study, results show that both SRs and LSRs tend to consult their dictionaries more often when they have a comprehension problem related to an unknown word/phrase. Saudi students' frequent consultation of an Arabic/English dictionary might be traced, as I noted earlier, to previous teaching methodologies, especially in middle and high schools. This strategy might be favorable when it puts an end to a reading comprehension difficulty or is used every now and then. However, it might hinder readers' comprehension process if it becomes a reading habit (i.e. the reader who was quoted earlier in my discussion of solving vocabulary difficulty as he insisted on finding the meaning of each unknown word). One implication in regard to words' definitions is to lay different techniques on the table for students to choose from. In other words, students' attention could be drawn to trying to resolve obstacles caused by unknown word/s by using different strategies such as using the context to guess the meaning, invoking relevant prior knowledge, inferencing, and direct consultation of their dictionaries. This method, I think, will enhance students' metacognitive awareness, as well as, direct their attention to the availability of other strategies that can be tried out instead of total reliance on dictionaries.

Traditional approaches to teaching English in Saudi mid and high schools, as far as I know, are dominant. We can't undermine the importance of these methods as we all know that acquiring language skills is fundamental for language learning in general and for effective reading in particular (Clarke, 1980). By the same token, it is imperative to arm FL readers with effective reading strategies that create interactive readers rather than passive readers. In my opinion, solving this dilemma starts from middle and high schools by eliminating some of the restriction imposed by the Ministry of Higher Education in requiring certain reading text-books and syllabi that restrict English teachers to traditional approaches to teaching. I think if middle and high schools teachers are unleashed and are encouraged to emphasize both approaches in teaching reading comprehension, their students will develop productive reading strategies. For example, L2 reading teachers might consider giving their students a metacognitive awareness questionnaire similar to that of Carrell's (1989) to have a rough idea about their reading behaviors and then work from there. The same questionnaire or a similar one can be repeated at the end of the term to see if their reading behavior changed. Enhancing L2 students' metacognitive awareness will contribute to their learning progress in general and to their reading in particular (Block, 1992).

It is important that future reading instruction might shift the focus from content to process in countries that are lagging behind in this regard. A case in point is to include comprehension monitoring and fix-up strategies in future reading classrooms. According to Block (1992), "[t]eaching students that problems exist when reading and that there are ways of solving them may be more important than teaching the meaning of specific words, phrases, and concepts" (p. 338).

5.4 Recommendation for future research:

What goes on in the reader's mind is a hidden process and can't be accessed directly. Yet, this internal process is essential to the advancement of reading research. To date, verbal reports seem to be the best way available to find out more about readers' reading process. Without this kind of research, "educators must resort to designing reading programs based on intuitions and guesses about students' problems" Block (1986: 463). Thus, I think that more research concerning L2 students' reading comprehension in general and their metacognitive awareness in particular is needed.

Combining quantitative and qualitative research seems to be fruitful. However, further modification might be needed in the future; for instance, making use of computers software designed for reading to investigate students' reading strategies might be useful. A passage that contains unfamiliar words, for example, could be programmed where informants only move the cursor to the desired word/phrase and click on it to get its meaning without forcing them to refer to their dictionaries. The same software could be programmed to record the frequency of their consultations and which word/s have been checked. Moreover, the same thing can be done to paraphrase complex sentences as well as to record informants' reflection on their reading process. A computer programmer will be needed of course, but I think that integrating technology in future research will minimize researchers' influence, will make the task more enjoyable, and moreover will make data analysis easier and increase its accuracy.

This study focused only on college level Saudi male English majors. Future research might include female subjects as well. An effort like this requires a female researcher to collect the necessary data considering the difficulties facing the male researcher especially in working with female subjects. Two researchers (male and female) could work together in order to come up with the necessary data. Despite the difficulty of recruiting female participants, I think that it would no doubt reveal the hidden picture of their reading comprehension in general and their metacognitive awareness in particular.

Another factor that might be taken into consideration in the future is the number of the informants. That is, more Saudi informants should be recruited as a first step, but future steps might include a random sample of Arab students who are majoring in the English language.

An area of future research that should be considered is to investigate the role of teaching effective reading strategies and metacognitive awareness to Saudi students. Perhaps such investigation can include skilled and less-skilled readers separately or in conjunction with a control group. The effect of instruction versus no instruction in comprehension monitoring is a rich field that might help to improve Saudi students' metacognitive awareness in particular, and that of Arab students in general.

Last but not least, a possible transfer/interference might be attributed to students' L1. Thus, future research might consider including a survey of Saudi students' perceptions of their reading strategies in Arabic and another one for their L2. The step may be taken further to include their actual reading process in both languages.

6 APPENDICES

APPENDIX A

6.1 A letter to the student

بسم الله الرحمن الرحيم

أخي الطالب:

السلام عليكم ورحمة الله وبركاته وبعد:

فهذا الاستبيان الذي بين يديك هو محاولة لفهم طرق وأساليب قراءة الطلبة السعوديين باللغة الإنجليزية، وهو ما سأستخدمه إن شاء الله في أطروحة الدكتوراه المقدمة لجامعة ولاية ميتشقان في الولايات المتحدة الأمريكية.

إن مشاركتك في هذا الاستبيان مهمة جدا، كما إنها سوف تسهم في معرفة وفهم أساليب القراءة التي يستخدمها الطالب السعودي عند قراءته للغة الإنجليزية. فإذا ليس لديك مانع من المشاركة فأرجو الإجابة على هذا الاستبيان، أما إذا كنت غير راغب في المشاركة فيمكنك المغادرة الآن.

إن جميع ما تدلي به من معلمات سيعامل بسرية تامة، وسيستخدم لهذا البحث فقط. كما أود التنبيه إلى أن الإختبار المرفق لن يحتسب في أي مادة من موادك الدراسية فقد أعد من أجل هذا البحث فقط.

أرجو الاستفسار عندما يصعب عليك أي نقطة من نقاط الاستبيان. وفقنا الله وإياك وجزاك الله خيرا على تعاونك معنا.

الباحث

عبدالله مفرح آل ملهي

APPENDIX B

6.2 The Arabic version of the metacognitive questionnaire (MAQ)

بسم الله الرحمن الرحيم

الجزء الأول

معلومات شخصية:

1-العمر: **التخصص:**

2-إسم الجامعة: **الكلية:**

3-هل تقرأ باللغة الإنجليزية قراءة إضافية من غير موادك الدراسية (ضع دائرة على الإجابة المناسبة):

نعم **لا**

إذا كانة الإجابة (نعم)،فما الذي تقرأه من الآتي:

أ.قصص قصيرة

ب.روايات

ج.صحف

د.مجلات

هـ.أخرى مثل .....

4-استخدم المقياس التالي الذي يبدأ بالمستوى المبتدئ (ويمثله الرقم 1) وينتهي بالمستوى المتقدم (ويمثله الرقم 10)، وضع دائرة على الرقم الذي ترى أنه ينطبق على مستوى قراءتك للغة الإنجليزية.

مبتدئ <----------> **متقدم**

1 2 3 4 5 6 7 8 9 10

الجزء الثاني

تعليمات مهمة:

الجمل الآتية تتعلق بالقراءة الصامتة في اللغة الإنجليزية،الرجاء تحديد مدى موافقتك لكل جملة وذلك بوضع دائرة على الرقم المناسب.

الرجاء اختيار إجابة واحدة فقط من الاختيارات

مثال:

أفهم ما أقرأه جيداً عندما تكون هناك ضوضاء و أصوات من حولي.

أوافق	محايد	لا أوافق
1	2	3

فإذا كنت توافق على الجملة فما عليك إلا وضع دائرة حول رقم 1.

وإذا كنت محايد(أي لا تستطيع تحديد اختيار أحد الإجابات) فما عليك إلا وضع دائرة حول رقم 2.وإذا كنت لا توافق على الجملة فما عليك إلا وضع دائرة حول رقم 3.

فلو فرضنا أنك لا توافق على الجملة فإنك تضع الدائرة على الرقم 3. والآن، ليس عليك إلا قراءة الجمل التالية و الإجابة عليها حسب ما ترى من موافقة أو عدم موافقة عليها.

وشكراً لك على إسهامك بالإجابة على هذا الاستبيان، والله الموفق.

الاستبيان

1.عندما أقرأ مقطعا باللغة الإنجليزية قراءة صامتة، فإنني أستطيع أن أتوقع ما سيأتي لاحقا في النص.

أوافق	محايد	لا أوافق
1	2	3

2.عندما أقرأ مقطعا باللغة الإنجليزية قراءة صامتة، فإنني أستطيع التفريق بين النقاط الرئيسية والنقاط المساعدة في النص المعطى.

أوافق	محايد	لا أوافق
1	2	3

3.عندما اقرأ مقطعا باللغة الإنجليزية قراءة صامتة، فإنني أستطيع ربط المعلومات اللاحقة بما سبقها من معلومات في النص.

أوافق	محايد	لا أوافق
1	2	3

4.عندما أقرأ مقطعا باللغة الإنجليزية قراءة صامتة، فإنني أستطيع مناقشة أهمية أو صدق ما يقوله الكاتب.

أوافق	محايد	لا أوافق
1	2	3

5.عندما أقرأ مقطعا باللغة الإنجليزية قراءة صامتة، فإنني أستطيع توظيف معلوماتي السابقة وخبرتي لفهم محتوى النص الذي أقرأه.

أوافق	محايد	لا أوافق
1	2	3

6.عندما أقرأ مقطعا باللغة الإنجليزية قراءة صامتة، فإنني أدرك جيدا متى أستوعب ما أقرؤه ومتى لا أستوعبه.

أوافق	محايد	لا أوافق
1	2	3

7.إذا لم أستطع فهم شيء ما عندما أقرأ قراءة صامتة باللغة الإنجليزية فإنني:

أ. أستمر في القراءة على أمل أن يأتي ما يوضحه لا حقا في النص.

أوافق	محايد	لا أوافق
1	2	3

ب. أعيد قراءة الجزء الذي تعذر فهمه.

أوافق	محايد	لا أوافق
1	2	3

ت. أرجع إلى ما قبل المقطع الذي تعذر علي فهمه، ثم أعيد القراءة من هناك.

أوافق	محايد	لا أوافق
1	2	3

---> تابع للفقره السابعة التي تقول:

إذا لم أستطع فهم شيء ما عندما أقرأ قراءة صامتة باللغة الإنجليزية فإنني:

ث. أبحث عن معاني الكلمات التي لا أعرفها في القاموس.

أوافق	محايد	لا أوافق
1	2	3

ج. أقف وأتخلى عن القراءة.

أوافق	محايد	لا أوافق
1	2	3

8.عندما أقرأ باللغة الإنجليزية قراءة صامتة، فإن الأشياء التي أركز عليها لأقرأ جيدا هي:

أ. ترديد أجزاء من الكلمات ذهنيا.

أوافق	محايد	لا أوافق
1	2	3

ب. فهم معنى كل كلمة.

أوافق	محايد	لا أوافق
1	2	3

ت. فهم المعنى العام للنص.

أوافق	محايد	لا أوافق
1	2	3

ث. القدرة على لفظ كل كلمة بشكل تام.

أوافق	محايد	لا أوافق
1	2	3

ج. التركيبات اللغوية للنص.

أوافق	محايد	لا أوافق
1	2	3

ح. ربط النص الذي أقرأه بما أعرفه عن الموضوع.

أوافق	محايد	لا أوافق
1	2	3

خ. استخراج معاني الكلمات من القاموس.

أوافق	محايد	لا أوافق
1	2	3

---> تابع للفقره الثامنه التي تقول:

عندما أقرأ باللغة الإنجليزية قراءة صامتة، فإن الأشياء التي أركز عليها لأقرأ جيدا هي:

د. معرفة تفاصيل ما يحتويه النص.

أوافق	محايد	لا أوافق
1	2	3

ذ. طريقة ترتيب النص.

أوافق	محايد	لا أوافق
1	2	3

9. عندما اقرأ باللغة الإنجليزية قراءة صامتة، فإن الأشياء التي تجعل القراءة صعبة هي:

أ. لفظ بعض الحروف.

أوافق	محايد	لا أوافق
1	2	3

ب. لفظ بعض الكلمات.

أوافق	محايد	لا أوافق
1	2	3

ت. التعرف على الكلمات.

أوافق	محايد	لا أوافق
1	2	3

ث. التركيبة النحوية.

أوافق	محايد	لا أوافق
1	2	3

ج. أبجدية الحروف الإنجليزية.

أوافق	محايد	لا أوافق
1	2	3

ح. ربط النص الذي أقرأه بما أعرفه عن الموضوع.

أوافق	محايد	لا أوافق
1	2	3

خ. معرفة المعنى العام للموضوع.

أوافق	محايد	لا أوافق
1	2	3

د. طريقة ترتيب (عرض) الموضوع.

أوافق	محايد	لا أوافق
1	2	3

10. يكون الفرد أفضل قارئ باللغة الإنجليزية عندما تكون لديه قدرة على:

أ. معرفة وتمييز الكلمات.

أوافق	محايد	لا أوافق
1	2	3

ب. لفظ (نطق) الكلمات.

أوافق	محايد	لا أوافق
1	2	3

ت. فهم المعنى العام للنص.

أوافق	محايد	لا أوافق
1	2	3

ث. استخدام القاموس.

أوافق	محايد	لا أوافق
1	2	3

ج. تخمين معاني الكلمات.

أوافق	محايد	لا أوافق
1	2	3

ح. دمج المعلومات الموجودة في النص مع ما يعرفه سابقا

أوافق	محايد	لا أوافق
1	2	3

خ. التركيز على تفاصيل محتوى الموضوع.

أوافق	محايد	لا أوافق
1	2	3

د. استيعاب طريقة عرض وترتيب النص.

أوافق	محايد	لا أوافق
1	2	3

APPENDIX C

6.3 The Demographic Questionnaire

1. Age ..... 3. Major.....

2. University ..... 4. College .....

5. Do you read in English, as an extra reading, besides your assigned textbooks? Circle the right answer:

Yes No

- If the answer is yes, what do you read? Mark all that applies.

a. short stories
b. novels
c. newspapers
d. magazines.
e. others, please specify.....

4. Using the provided scale, please circle the number that best describes your level of reading in English. Number 1 refers to beginners while number 10 to advanced readers.

|⇒----------|
1 2 3 4 5 6 7 8 9 10

APPENDIX D

6.4 Metacognitive Awareness Questionnaire (MAQ)

The following statements are about reading silently in English. Please indicate your level of agreement or disagreement by circling the appropriate number: 1 indicates strong agreement, 5 indicates strong disageement. (e.g. 1: strongly agree (SA) , 2: agree (A), 3: neutral (N), 4: disagree (D), and 5: strongly disagree(SD)).

	SA	A	N	D	SD
	1	2	3	4	5
1. When reading silently in English, I'm able to anticipate what will come next in the text	1	2	3	4	5
2. When reading silently in English, I'm able to recognize the difference between main points and supporting details.....	1	2	3	4	5
3. When reading in silently in English, I'm able to relate information which comes next in the text to previous information in the text.....	1	2	3	4	5
4.When reading silently in English, I'm able to question the significance or truthfulness of what the author says.....	1	2	3	4	5
5. When Reading silently in English, I'm able to use my prior knowledge and experience to understand the content of the text I am reading.....	1	2	3	4	5
6. When reading silently in English, I have a good sense of when I understand something and when I do not.....	1	2	3	4	5
When reading silently in English, if I don't understand something,					
7. I keep reading and hope for clarification further on.....	1	2	3	4	5
8. I reread the problematic part.....	1	2	3	4	5
9 I go back to the point before the problematic part and reread from there.....	1	2	3	4	5

10. I look unknown words in a dictionary.....	1	2	3	4	5
11. I give up and stop reading.....	1	2	3	4	5
When reading silently in English, the things that I do to read effectively are to focus on...					
12. mently sounding out part of the words.....	1	2	3	4	5
13. understanding the meaningof the words.....	1	2	3	4	5
14. getting th eoverall meaning of the text.....	1	2	3	4	5
15. being able to pronounce each whole word.....	1	2	3	4	5
16. the grammatical structure.....	1	2	3	4	5
17. relating the text to what I already know about the topic.....	1	2	3	4	5
18. looking up words in the dictionary.....	1	2	3	4	5
19. the details of the content.....	1	2	3	4	5
20. the organizationof the text.....	1	2	3	4	5
When reading silently in English, things that make reading difficult are					
21. the sounds of the individual words.....	1	2	3	4	5
22. pronuncaition of the words.....	1	2	3	4	5
23. recognizing the words.....	1	2	3	4	5
24. the grammatical structures.....	1	2	3	4	5
25.the alphabet.....	1	2	3	4	5
26. relating the text to what I already know.....	1	2	3	4	5
27. getting the overall meaning of the text.....	1	2	3	4	5

28. the organization of the text.....	1	2	3	4	5
The best reader I know in English is a good reader because of his/her ability to...					
29. recognize the words.....	1	2	3	4	5
30. sound out words.....	1	2	3	4	5
31. understand the overall meaning of the text	1	2	3	4	5
32. use a dictionary	1	2	3	4	5
33. guess at word meaning	1	2	3	4	5
34. integrate the information in the text with what he/she already knows	1	2	3	4	5
35. focus on the details of the content.....	1	2	3	4	5
36. grasp the organization of the text ... figure, etc.	1	2	3	4	5

APPENDIX E

6.5 The Reading Passage

Art and humor[4]

Millions of people struggle out of bed each morning, fumble into some clothes, and make their way to a cup of coffee and the morning newspaper. They need something cheerful to remind them that the rest of the day will be less difficult than getting up. This need may be the reason that many of them turn their half-opened eyes to the comics section of the newspaper as they sip their first cups of coffee of the day.*

Cartoons reflect the times and the troubles and worries of people. They give people an opportunity to laugh at themselves and at familiar situations. In times of prosperity, for example, cartoons show people enjoying the good economic situation. They also make fun of the problems that people make for themselves-like making a problem out of which type of car to buy.* In hard times -time of economic troubles-people want someone or something to blame their trouble on. Cartoons provide scapegoats. They also help people to see the humor in not-so-funny situation. For example, a cartoon might say that the government of a country is responsible for the bad economy and also show the government people as a group of ridiculous people. Being able to use the leaders as scapegoats and to laugh at the leaders somehow makes people feel better about their situation.*

Cartoons also make people laugh at their own personal worries. Young people who are not always sure of how to act can always smile at their awkwardness. Old people whose grown children pay little attention to them can chuckle at their neglect and loneliness. Students who have studied too little before an examination can laugh at their anxiety.* Everyone's problems are made bigger-than-life in the comics. Perhaps the problems seem funny because there is humor in something that is real being made unreal.

A cartoon combines art and humor. When it is skillfully done, a simple line drawing and a few words can make people laugh. their troubles seem less important, and they enjoy life more fully.*

---

[4] Adapted from Zukowski/Faust, J. et al. (1983). Between the lines: Reading skills for intermediate-advanced students of English as a second language. Orlando, Florida: Holt, Rinehart and Winston, Inc.

* Indicates the pre-marked places where subjects were asked to reflect on their reading process.

APPENDIX F

6.6 The Reading Comprehension Test

Name:_____

University:_____ College:_____

READING COMPREHENSION

This is a test to show how well you read in English. There are three reading passages each followed by some questions about the passage. You should read each passage carefully and then try to answer the questions following that passage. If you do not know the answer at first, you may read the passage again, but do not spend too much time on the passage or you will not have enough time to finish.

EXAMPLE:

While I was getting ready to go to town one morning last week, my wife handed me a little piece of red cloth and asked if I would have time during the day to buy her two yards of cloth like that. I told her I would be glad to do it. And putting the piece of cloth into my pocket, I took the train for town.

D. The person telling the story is ...

a) a married lady
b) an unmarried lady
c) a married man
d) an unmarried man.

You know that the person telling this story is a married man because he says, "...my wife handed me..." Because c, a married man is the correct answer, a cross has been made in the space next to c for Example D on the answer sheet.

E. When was the author given a piece of red cloth?

a) In the morning.
b) At noon.
c) In the afternoon.
d) In the evening.

The passage says, "...one morning last week, my wife handed me a little piece of red cloth..." To show that a, In the morning is the correct answer, a cross has been made in the space nest to a for example E on the answer sheet.

Answer all questions in this manner.
Mark only one answer for each problem.

CONTINUE

. The Giants Causeway has attracted the curiosity of travelers for centuries. It is composed of thousands of strangely symmetrical basalt columns which just out to sea. Legend has it that the Causeway was built by the Irish giant, Finn MacCuil, so as to travel dry-shod across the sea to Scotland. Generations of guides have embroidered the tale until it is hard to disentangle modern invention from ancient folklore. In fact the Causeway is a product of the volcanic activity which altered the face of Ireland, Scotland, Iceland and Greenland many millions of years ago.

Between Runkerry and Causeway Head three caves, Runkerry, Rock Pigeon, and Portcoon, pierce the cliffs. Portcoon is the sole one accessible from the land, but a visit is only for the agile and care is needed at the high tide. A side passage gives access to the main cave. The entrances to the others may be seen from the cliffs with some difficulty but access is only possible from the sea. Runkerry cave is over 700 feet long. These caves were formed by marine erosion along lines of weakness in the basalt. In the old days these caves were very much a part of the Causeway attractions and local boatmen rowed visitors, twenty in each boat, into them when the seas were moderate.

1. The basalt columns were formed by....
   a) glacial action
   b) volcanoes.
   c) Finn MacCuil.
   d) marine erosion.

2. The guides who told the Finn MacCuil tale...
   a) disagrees among themselves.
   b) learned it in Scotland.
   c) never changed it.
   d) kept adding to it.

3. The passage implies that nowadays the caves ...
   a) are more popular than in the past.
   b) are less popular than in the past.
   c) are more easily reached than the past.
   d) have been closed to tourists.

4. Runkerry and Rock Pigeon differ from Portcoon in that they ...
   a) have more than one entrance.
   b) were formed by marine erosion.
   c) cannot be seen from the land.
   d) cannot be entered on foot.

5. According to the story, Finn MacCuil built the Causeway because he ...
   a) had no other way to get to Scotland.
   b) wanted his Scottish friends to be able to visit him.
   c) didn't want to get his feet wet.
   d) wanted to prove his strength.

Until recently there has been little evidence about how the brain functions in cognition and precisely how and which of the 12 billion cells within the brain store memory. One noted explores in his field is Dr. Wilder Penfield who in 1951 began to produce exiting evidence to confirm theoretical concepts which had been formulated about memory functioning. During the course of brain surgery, in treating patients suffering from focal epilepsy, Penfield conducted a series of experiments during which he touched the temporal cortex of the brain of the patient with a weak electric current transmitted through a galvanic probe. In each case, the patient under local anesthesia was fully conscious during the exploration of the cerebral cortex and was able to talk with Penfield.

Penfield found that the stimulating electrode could force recollections clearly derived from the patient's memory. Penfield reported that such recollections stop when the electrode is removed and may re-occur when the electrode is applied again. One of Penfield's significant conclusions was that the electrode evoked a single recollection, not a mixture of memories or a generalization. Secondly, the response of the electrode was found to be totally involuntary, but perhaps the most important discovery was that not only past events are recorded in detail but also the feelings that were associated with these events. An event and the feeling which was produced by the event are in extricably locked together in the brain so that one cannot be evoked without the other.

1. One conclusion reached by Penfield was that ...
   a) the response to the electrode was involuntary.
   b) electrical stimulation caused loss of consciousness.
   c) electrical stimulation caused a lasting improvement.
   d) electrical stimulation can evoke events but not feelings.

2. The passage states that events and feelings....
   a) can be remembered independently of each other under normal conditions.
   b) are inextricably linked.
   c) are stored in different places in the brain.
   d) can be remembered independently of each other only under experimental conditions.

3. The original purpose of the brain surgery performed by Penfield was to ...
   a) treat epilepsy.
   b) Treat memory problem.
   c) Test memory functioning in the patients.
   d) Enable patients to speak normally.

4. When electrode was removed ....
   a) the memory that had been elicited stopped.
   b) The elicited memory became stronger.
   c) The patient's memory problem was cured.
   d) The patient suffered a complete loss of memory.

5. As a result of this experiment, Penfield found that ...
   a) the electrode improved but did not cure epilepsy.
   b) a surgical approach to memory problems is effective.
   c) an electrode can force a patient to remember past experiences.
   d) the electrode had no effect on memory.

Jelly Roll Morton was born Ferdinand Joseph LaMenthe in Gulfport, Louisiana in 1885 or 1886, and raised in New Orleans. From the age of seventeen he began to earn his living as a jazz pianist, travelling throughout the United States. After five years in Los Angeles he went to Chicago in 1923, beginning his publishing and recording activities, as a soloist and a band leader, in the city where most of the best jazz musicians of the time were playing. When the center of jazz activity moved to New York, Morton did too, in 1928. The expiration of his recording contract in 1930, along with the depression, changing jazz styles and the increasing ability of white jazz musicians brought him hard times which were compounded by his uncompromising attitude toward music. Morton moved to Washington, D. C. to mange and play in a small night club but before returning to New York in 1938, he described his own and jazz history to Alan Lomax in a lengthy set of interviews recorded for the Library of Congress. This brought about his "rediscovery"; however, he was viewed more as a historical figure than as the vital musician he still was and had very modest successes in recording, radio and publishing. Poor health and prevailing tastes in jazz limited his success, and he died in 1941 in Los Angles, just before the historical revival movement which later benefited many of his slightly younger contemporaries could rescue him, and before public recognition such as that which came to Louis Armstrong could be of help to him.

1. What was Morton's attitude toward music?
   a) He preferred to write and play the kind of music the public liked.
   b) He preferred talking about the history of jazz to writing jazz.
   c) He preferred playing music to writing.
   d) He preferred to write and play what he felt was good music.

2. Why did Morton move to New York?
   a) He got a job there managing a night club.
   b) Most of his best jazz musicians were there.
   c) He lost his job in Chicago.
   d) He wanted to begin publishing his music.

3. When Morton was "rediscovered," the public felt he was ...
   a) important mainly as a historical figure in music.
   b) important as both a historical figure and vital musician.
   c) too modest about his ability.
   d) the greatest band leader of the day.

4. The author believes that Morton, in his last years...
   a) benefited from the historical revival movement in jazz.
   b) was still a vital musician.
   c) was too modest about his abilities.
   d) changed prevailing tastes in jazz

5. What does the author believe would have happened if Morton had lived longer?
   a) Morton would have changed the prevailing taste in jazz.
   b) Morton would have enjoyed greater public recognition.
   c) Morton would have helped his slightly younger contemporaries.
   d) Morton would have been rescued by slightly younger contemporaries.

END OF TEST

APPENDIX G

6.7 A sample of think-aloud protocol

[Subjects starts reading]

"Millions of people struggle out of bed each morning, fumble into some clothes, and make their way to a cup of coffee and the morning newspaper. Millions of people struggle out of bed each morning, fumble into some clothes, and make their way to a cup of coffee and the morning newspaper."

You read the first sentence twice. Why?

I tried to understand what he meant by "struggle out" and the meaning of "fumble".

Were you able to do that?

Not really, but I got the general idea. I'll continue and see how it works.

OK.

They need something cheerful to remind them that the rest of the day will be less difficult than getting up. This need may be the reason that many of them turn their half-opened eyes to the comics section of the newspaper as they sip their first cups of coffee of the day. There are two words here that I don't know their meanings ... "cheerful," "half-opened eyes," "comics," and "sip."

Ok. What you want to do about them? Or let me put it this way, what do you usually do in such case?

Well it depends. If it is a required course or topic then I have to find out each individual word's meaning and write it down so I can understand what I read.

In our case here let's suppose that you've been asked to read this passage by your teacher. What would you do?

First I'd find out the meaning of these words before I continue.

Please do exactly the way you read if you were by yourself.

[Subject is looking words in the dictionary and writes its meaning in Arabic, then he starts rereading from the beginning]

"Millions of people struggle out of bed each morning, fumble into some clothes, and make their way to a cup of coffee and the morning newspaper. Millions of people struggle out of bed each morning, fumble into some clothes, and make their way to a cup of coffee and the morning newspaper. They need something cheerful to remind them that the rest of the day will be less difficult than getting up. This need may be the reason that many of them turn their half-opened eyes to the comics section of the newspaper as they sip their first cups of coffee of the day."

So, first you located each word in the dictionary, underlined it in the text, and wrote its meaning in Arabic. Is this your reading strategy?

Yes, when I read a required topic.

How about when you read for pleasure?

I sometimes look up words in the dictionary, but not as often as I do in reading a textbook.

But I noticed that you finished the first paragraph before you consulted your dictionary.

You see... I wanted to stop at the mark that you put. That is why I continued. Otherwise, I would have stopped after the second word that I didn't know.

Please ignore these marks and read exactly the way you read, but try to tell me what is going on as you read.

OK.

[Subject starts reading the second paragraph]

"Cartoons reflect the times and the troubles and worries of people. They give people an opportunity to laugh at themselves and at familiar situations. In times of prosperity ... prosperity." I need to check this word.

OK. [checking his dictionary]

It has three meanings, so I'll read the sentence again to see which one would fit... In times of prosperity, for example, cartoons show people enjoying the good economic situation... umm I don't think prosperity means success, so it must be the third definition. Let me read it again... in times of prosperity, for example, cartoons show people enjoying the good economic situation. They also make fun of the problems that people make for themselves-like making a problem out of which type of car to buy. In hard times ...in hard times or time! Is this a typing error here or what?

What do you think?

I think there are some typing mistakes in this passage, like "half-opened," "themselves-like", "troubles-people," and this one "times-time."

But you just mentioned them now. You didn't say anything about them before. Why?

Well, the first three looked like a typing error where the writer typed hyphen between these words.

What makes you think so?

Because in each one the second word is different from the first, but in the last one "times-time" seem to me that the writer put it in or you might be the one who put these hyphens to see what we are going to do.

No... no. I didn't add anything to this passage except the red dots where I wanted you to stop and reflect on your reading process.

Or it could be additional information.

Which one?

The last one "times-time".

How do you solve this confusion?

I'll read the sentence twice. One time as is and the second time without time... I'll delete it and see. "in hard times-time of economic troubles- people want someone or something to blame their troubles on." OK. Now let me read it without time...

"in hard times people want someone or something to blame their troubles on."

What do you think?

The sentence was not affected by the deletion, so is additional information. This additional information explains what is meant by "hard times".

OK. Does this kind of sentences cause any kind of problem for you?

In most cases, yes. I feel that my thinking is interrupted whenever I see extra information in the text.

I see.

"In hard times-time of economic troubles- people want someone or something to blame their trouble on. In reading this sentence, I prefer to read it this way "in hard times... stop for a while and reread it without stopping until the end.

Why?

To think about what I just read before I continue.

OK. Please continue.

"cartoon provide scapegoats... scapegoats... I need to look this word up.

[subject finds the word's meaning and then restart reading]

"Cartoons provide scapegoats." Did I pronounce it correctly?

Pronunciation is not our concern here, but since you mentioned it, does it affect your reading?

Yes, when there is a word like this one which contains more than one syllable, I try to pronounce it correctly.

I see... do you want to continue or you want to add something?

I'll continue... "They also help people see the humor in not-so-funny situations. For example, a cartoon might say that the government of a country is responsible for the bad economy and also show the government people as a group of ridiculous people. Being able to use the leaders as scapegoats and to laugh at the leaders somehow makes people feel better about their situation."

Remember! I want you to tell me about your reading process.

Uhh... this paragraph talks about cartoons and everything is OK. I also remember watching cartoon movies at home.

Did you recall specific moment or experience?

Yes, I imagined myself watching them with my younger brothers.

Did it help your comprehension?

Yes, it did.

Please continue if you don't have anything to add.

"Cartoons also make people laugh at their own personal worries. Young people who are not always sure of how to act can always smile at their awkwardness." I need to look awkwardness"

OK.

Now I'm going to read the sentence again.... cartoons also make people laugh at their own personal worries. Young people who are not always sure of how to act can always smile at their awkwardness. Ok the sentence is clear "old people whose grown children pay little attention to them can chuckle ... here is another word... I need to look it up.

[Subjects consults his dictionary]
Chuckle ... chuckle ... chuckle... here it is. OK. "...can chuckle at their neglect and loneliness. Students who have studied too little before an examination can laugh at heir anxiety. What does he mean by anxiety ... let me see...

[Consults his dictionary again]

Now it's clear... let me continue and see "Everyone's problems are made bigger-than-life in the comics. Perhaps the problems seem funny because there is hum... humor ...humor in something that is real being made unreal. A cartoon combines art and humor. When it is skillfully ... skillfully done, a simple line drawing and a few words can make people laugh. Their troubles seem less important, and they enjoy life more fully.

In this part, I had some difficulties concerning pronunciation of some words. That is why I repeated words like "humor" and "skillfully" trying to pronounce them correctly. Although you told me not to worry about pronunciation, I can't help it. I tend to pay more attention to it more than I should.

Do you think it affects your comprehension?
Yes, it affects my comprehension. I want to read this part again.... Not because I didn't understand the get the general meaning, but I just want to see if I'd be able to pronounce these words correctly and to make sure also that I didn't miss something important.

[subject rereads the last part]

"Everyone's problems are made bigger-than-life in the comics. Perhaps the problems seem funny because there is humor in something that is real being made unreal. A cartoon combines art and humor. When it is skillfully done, a simple line drawing and a few words can make people laugh. their troubles seem less important, and they enjoy life more fully."

Did you find it easier this time?
Much easier than the first time.

So, as a reader, we could say that you tend to repeat what you read at least once?

Yes, in most cases, unless the topic is too easy or I have read it before.

End of protocol.

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