THE RELATIONSHIP BETWEEN VOCABULARY SIZE, READING STRATEGIES, AND READING COMPREHENSION OF EFL LEARNERS IN SAUDI ARABIA

BY

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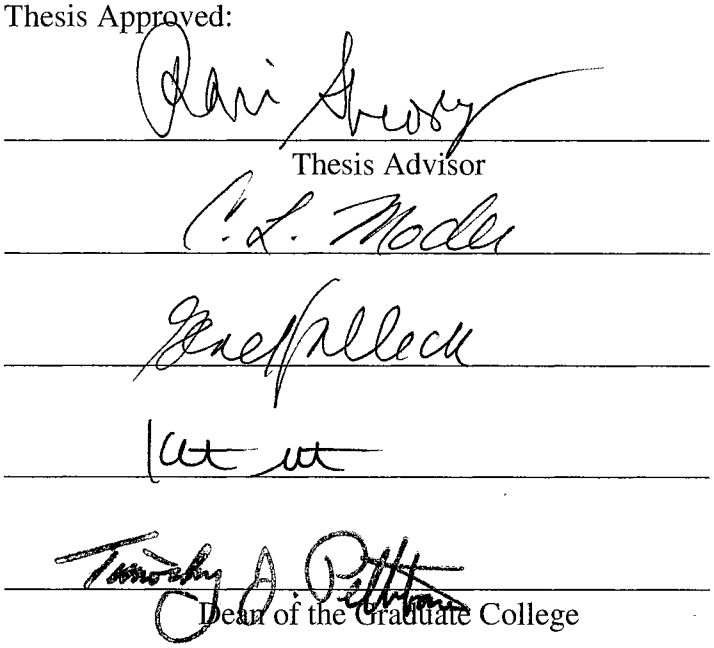

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Introduction

Reading is an essential component of literacy, and a key to the communication of information and ideas. It is almost impossible for people to go about their daily functions in countries where the literacy rate is high without being able to read. In a world which is now often described as a "global village," the crucial importance of reading is not only limited to reading in one's first language (L1), but also extends to reading in foreign languages. Just as reading and writing are the major components of literacy in one's first language, being able to read a foreign language skillfully is part of being considered literate in that language as well.

Second language (L2) learners, teachers, and researchers seem to invariably recognize the substantial role of reading in second language literacy, especially in academic settings (Huckin & Haynes, 1993; Anderson, 1999; Grabe, 1991). In fact, L2 students themselves consider reading to be the most important among the four language skills (Carrell, 1988. p. 1). Similar to one's ability to read efficiently in L1, efficient L2 reading ability helps learners to develop language and academic skills quickly and more efficiently (Anderson, 1999). At the university level, for example, students need to develop and expand their knowledge of certain topics independent from the classroom guidance of their teachers (Cooper, 1984). A student's reading ability in English is also of particular importance primarily because much of the available professional and academic materials relevant to their chosen professions are written in English (Alderson, 1984).

In spite of the fact that reading is a major skill in language learning, there are a number of aspects inherent in the reading process that have made reading difficult to define. As such, there is still no consensus among reading researchers on a comprehensive definition of reading that encompasses the different reading approaches and models designed to describe the reading process. Adding to the difficulty of defining reading is the complexity of reading as a cognitive process (Grabe, 1991). The breakthrough in understanding the reading process came with Goodman's (1967) psycholinguistic model which described reading as "a psycholinguistic guessing game" (p. 126). Prior to Goodman's model, reading was viewed as a simple letter-by-letter or word-by-word decoding of orthographic symbols in a text. Goodman introduced the idea that reading involves the active participation of the reader in reconstructing the writer's message. In Goodman's model, readers go beyond the linguistic cues to predict the meaning of a text based on their background knowledge (Carrell, 1988). Thus, Goodman (1970) defines his psycholinguistic model of reading as a process which, "involves partial use of available minimal language cues selected from perceptual input on the basis of the reader's expectations. As this partial information is processed, tentative decisions are made to be confirmed, rejected, or refined [by the reader] as reading progresses" (p. 260). Explaining and elaborating on one part of this definition, Clark (1979) stated,

> The definition assumes that reading is an active process. The reader forms a preliminary expectation about the material, then selects the fewest, most productive cues necessary to confirm or reject that expectation. This is a sampling process in which the reader takes advantage of his knowledge of vocabulary, syntax, discourse, and the "real world." Skill in reading, therefore,

> depends on the precise coordination of a number of special skills. Providing students with practice in these skills and helping to develop consistent "attack strategies" should be the focus of any reading program (p. 49).

Anderson (1999) also states that, "reading is an active process which involves the reader and the reading material in building meaning" (p. 1). Thus, reading is a multi-skill process whose ultimate goal is text comprehension.

The different views of the nature of reading led to the emergence of several models of reading which attempted to explain the reading process. Prominent models like the bottom-up model (Gough, 1972), the top-down model (Goodman, 1967; Smith, 1971), and the interactive model (Rumelhart, 1977, 1980) have received considerable attention in reading research. Among these models, the interactive model appears to be the most promising in helping to explain the reading process. It is more encompassing of the different types of reading, i.e., L1 and L2 reading because it incorporates both bottom-up and top-down processes and realizes the contribution of both the reader and the text in the reading process (Grabe, 1991). The interactive model description of the reading process is also consistent with L2 reading in that it recognizes language factors which are either taken for granted in the top-down model or are over-emphasized in the bottom-up model. It also recognizes reader variables like background knowledge, prediction, and other global reading processes that are either unaccounted for in bottom-up models or account for everything about reading in top-down models. Given the confounding factor of language proficiency in reading second and foreign languages, usually considered to hinder the transfer of L1 reading skills and strategies to L2 reading

(Clark, 1979b), I believe that interactive models are the most comprehensive in explicating the L2 reading process.

Since research has shown that reading is a complex process that involves different variables such as the reader, the text, and the interaction between the two (Carrell, 1983; and Aebersold & Field, 1997), variables relevant to the L2 reader are usually examined and discussed in the literature to show the important contribution of the reader to the L2 reading process. Some of the commonly explored variables include language proficiency (Alderson, 1984, Laufer, 1992; Carrell, 1991), first language reading ability (Lee & Schalllert, 1997), cognitive strategies (Block, 1986 & 1992), and metacognitive awareness (Carrell, 1989). It is worth noting here that the interactive model's recognition of the importance of bottom-up and top-down processing and the contribution of the reader's background knowledge and reading strategies helps reconstruct a more balanced and comprehensive view of the reading process.

Looking at the reading process from the perspective of the interactive approach, the previous discussion indicates that both language proficiency and reading strategies and skills are contributing factors to L2 reading. However, to truly understand the impact of the most contributing factors in the L2 reading process, L2 reading research needs to examine language proficiency and reading skills and strategies simultaneously. The major problem with examining the impact of language proficiency on L2 reading rests with the different types of language proficiencies which often make it difficult to explore this relationship more closely. Given this difficulty, several researchers have examined the relationship between reading comprehension and vocabulary knowledge, considering

this to be the most relevant linguistic construct to L2 reading (Laufer, 1989, Qian, 1999, 2002). To examine the other contributing variable, i.e., the reading factor, the reading strategies employed by L2 learners during the reading process are usually explored. I believe that examining language proficiency and reading problems simultaneously can show how these factors interact with each other to either facilitate or impede L2 reading. Thus, the current study attempts to explore this tri-dimensional relationship between the vocabulary size, reading strategies, and reading comprehension of EFL learners in Saudi Arabia. This chapter presents a statement of the research problem, the purpose of the study, its significance, its theoretical foundation, the research questions, and a summary of the organization of the study.

Research Problem

A considerable debate about the poor reading ability of second and foreign language learners and whether such inefficient reading ability should be attributed to target language proficiency or reading problems took place in the mid eighties. Alderson (1984) examined the main factors impacting L2 reading. The crux of the debate was whether reading in L2 is a reading problem or a language problem. Language problems were manifested in L2 linguistic proficiency while reading problems were related to the learners' L1 reading ability and strategies. After examining the findings of almost all relevant studies, Alderson briefly stated, "The answer perhaps inevitably, is equivocal and tentative – it appears to be both a language problem and a reading problem, but with firmer evidence that it is a language problem, for low levels of foreign language competence, than a reading problem" (p. 24). Carrell (1991) also investigated the

relationship between first and second language reading comprehension of native speakers of Spanish and English learning other languages at varying levels of proficiency. L1 reading ability as well as L2 proficiency were found to significantly impact L2 reading. While L1 reading ability was a stronger predictor of L2 reading ability than L2 proficiency for second language learners, L2 proficiency was a stronger predictor of FL reading ability.

This diagnosis of second and foreign language reading problems seems to be considered in many subsequent investigations. Recognizing a reading problem, several researchers have argued that reading strategies and metacognitive awareness may impact second language reading ability (Taillefer & Pugh, 1998; Block, 1986; Carrell 1991, and Darabie, 2000). In this line of research, some researchers have also found reading strategies instruction to often improve ESL and EFL reading comprehension (Carrell, 1989; Zhang, 1992; Kern, 1989; and Mustafa, 1998). Clark (1979b) also found L2 learners with better L1 reading skills to be relatively better second language readers when L2 proficiency is held constant. Other researchers have focused on the construct of second language proficiency as the main predictor of reading ability. As the most relevant linguistic construct, second language vocabulary knowledge is usually considered an important variable that affects reading comprehension (Alderson, 1984; Nation & Coady, 1988; Laufer, 1992; Coady et al., 1993; Nagy & Scott, 2000). Grabe (1991) suggests that knowledge of vocabulary and syntax are crucially important to reading comprehension. Some reading researchers and language educators suggest teaching vocabulary to improve L2 learners' reading comprehension (e.g., Nagy, 1988; Coady *et al.*, 1993).

Another group of researchers support the schema theory to explain reading problems of ESL learners. The essential tenet of schema theory is that text comprehension results from the interaction between the reader's background knowledge and the reading text (Carrell & Eisterhold 1983). Schema theory researchers believe that the reading problems of ESL learners could be attributed to their inefficient use of background knowledge and information from the reading context (Carrell, 1983a, 1983b, Carrell and Wallace, 1983). Other researchers suggest that if readers were injected with the appropriate schema for a certain text, they would have a better comprehension of that text (Hudson, 1982).

However, the above discussed factors are by no means mutually exclusive. Anderson (1991) suggests that the use of certain reading strategies could be a matter of vocabulary knowledge and general knowledge. Thus, I suspect that if beginning L2 readers are aware of effective reading strategies but do not have enough vocabulary or lack the appropriate schema for a certain text, they may not succeed in comprehending the text. Given the interdependence of these factors, the current study will investigate the relationship between reading strategies, vocabulary size, and reading comprehension. I believe that both vocabulary knowledge and reading strategies play an important role in the development of second language reading ability. An examination of these interrelated factors among a certain group of learners will definitely illuminate the relationship between these factors and identify the learners' reading problems and needs.

Purpose of the Study

The purpose of this study is to examine the relationship among three variables in the EFL reading process, namely reading strategies, vocabulary size, and the reading comprehension of Saudi EFL learners enrolled in university English or English related programs. As part of examining this relationship, the study will describe the perceived reading strategies of Saudi EFL learners when reading academic texts, and provide estimates of their receptive vocabulary knowledge. The study will also show how these factors relate to some learner variables like gender, the amount of outside reading, beliefs about the role of vocabulary in language learning, and self-rated language proficiency and vocabulary knowledge.

Significance of the Study

One of the main objectives of research in any education-related discipline is to provide information to enhance teaching pedagogy and to improve learning conditions. To improve the teaching of EFL reading in Saudi Arabia, research is needed to understand the learners' reading problems and evaluate their progress as they go through EFL programs in the educational system. In my experience as an EFL student, I noticed the tremendous gap between high school graduates' low proficiency level and that of the higher proficiency expected from EFL university students. Thus, when high school graduates are admitted to English programs at Saudi universities, a majority of the students stumble over the difficult materials they usually encounter in such programs, resulting in a high dropout rate. In most cases, such programs do not have accurate

measures of the different aspects of the students' language proficiency, on which they can base the level and content of the different EFL courses.

Since L2 reading ability is often regarded as the most needed skill for EFL learners in academic settings (Alderson, 1984), the learners' inability to skillfully read L2 materials may hinder the academic and professional development of those whose professions and academic programs require accessing and obtaining information in the target language. Thus, it is important for university EFL programs in Saudi Arabia to accurately estimate high school graduates' reading ability and vocabulary knowledge in order to design appropriate reading courses. The current study will provide estimates of the vocabulary size of Saudi high school graduates who have just enrolled in English and English related university programs. It will also show the general trends in the Saudi EFL learners' perceived use of reading strategies. One positive feature of the current study is that it does not classify the participants according to their performance on measures of language proficiency carried out previously by their institutions. All the variables examined in this study were measured through instruments specifically designed for the purpose of the current study.

According to O'Malley and Chamot (1990), learning strategies research, in general, is comprised of three main types of studies: descriptive, classificatory, and validational. Descriptive studies examine the pattern of strategy use among particular groups of learners. Classification studies categorize the strategies used by a group of learners and provide some classifying categories of these strategies. Validation studies can be either interventionist or correlational studies. Interventionist studies involve

strategy training and measure the effectiveness of such training on learners' performance. Correlational studies, on the other hand, correlate the learners' strategy use with some measure of language proficiency. According to O'Malley & Chamot (1990), the correlation type of strategy research, to which the current study belongs, seems to be the least conducted. In the current study, the EFL learners' perceived use of reading strategies is correlated with measures of language proficiency; namely vocabulary knowledge and reading comprehension ability.

The descriptive nature of the study may illuminate the manner and apparent purpose of teaching EFL reading in the Saudi educational system. It is hoped that such an investigation will also indirectly examine the outcome of the intermediate and secondary English language education in terms of EFL students' reading ability and vocabulary knowledge. Data gathered from the reading comprehension test and the survey of reading strategies may also associate successful comprehension with certain patterns and frequencies of perceived reading strategies. It is also a desire that the current study will assist program developers in Saudi universities to use the findings of this study in designing appropriate reading courses that are based on the students' reading ability and vocabulary size and are aimed at developing their reading strategies.

Since the study will provide estimates of the EFL learners' vocabulary size and reading ability, the findings will help determine the reading and vocabulary needs of university EFL learners in Saudi Arabia. Addressing such needs will not only help these learners succeed in their language learning, but also in their academic and professional future. Moreover, examining Saudi EFL learners' strategy use may raise learners'

metacognitive awareness of some useful reading strategies they might not have come across before responding to the reading strategies survey. Making the learners aware of these strategies would increase learners' involvement in and responsibility for their learning. In essence, this will promote learner autonomy.

Research Questions

This study attempts to answer some specific questions about the nature of the participants' reading comprehension ability and its relationship to both vocabulary size and reading strategies. The study will specifically answer the following five research questions.

1. What are the perceived reading strategies of Saudi EFL learners enrolled in English and technical university programs when reading English academic materials?

2. What is the Saudi EFL university learners' vocabulary size?

3. What is the level of reading comprehension among Saudi EFL learners?

4. What is the relationship, if any, between reading strategies, vocabulary size, and reading comprehension of Saudi EFL learners?

5. What is the impact of learner variables like gender, amount of outside reading, beliefs about the importance of vocabulary in language learning, perceived proficiency level, and perceived vocabulary knowledge on reading strategies, vocabulary size, and reading comprehension?

Theoretical Basis of the Study

In this study, vocabulary knowledge and EFL reading strategies are investigated from an interactive perspective of reading. Interactive models of reading usually incorporate text factors as well as reader factors like background knowledge, reading strategies, language proficiency, motivation, and beliefs into the reading process (Aebersold & Field, 1997). In describing the interactive models of reading, Grabe (1988) states:

> In their simplest forms, such models incorporate both top-down and bottom-up strategies. The models incorporate within themselves the implications "of reading as an interactive process." At the same time they also incorporate notions of rapid and accurate features recognition for letters and words, spreading activation of lexical forms and the concept of automaticity in processing such forms--that is, a processing that does not depend on active attentional context for primary recognition of linguistic units (p. 59).

In addition to emphasizing the complexity of reading and the different factors involved in the process of reading, the interactive approach also recognizes the contribution of both bottom-up and top-down processes and the interaction between the reader and the reading text. This study is also guided by Perfetti's (1995) contention that effective readers use lexical processes to quickly identify words which result in a more effective use of the context. Reviewing relevant research, Grabe (1991) reported the recognized importance of lexical access to automaticity and fluent reading in the reading research.

The study is also based on metacognitive theories which emphasize the importance of planning in strategy use as well as the constant checking of understanding while reading (Baker & Brown, 1984). Pressley and Afflerbach (1995) maintained that recent works show good reading to involve "complex articulation between strategies and knowledge" (p.89). They also presented another recent model of reading, which may serve in establishing the theoretical foundation for the current study. After reviewing 38 studies on reading strategies that employed the use of the think aloud protocol – a process by which a reader is asked to stop reading at various intervals in the process of reading a text to reflect on their strategy use and comprehension – Pressley and Afflerbach (1995) introduced a reading model that defines the elements of a successful reader.

In essence, the model incorporates the features of several reading processing theories; encompasses the multitude of strategies used before, during, and after reading; and views successful readers as "constructively responsive." This model recognizes the role of the reader in interpreting the text as in the reader response theory, the role of background knowledge as in schema theory, the role of monitoring and control of strategies as in metacognitive theories, the role of inferential skills in meaning construction as in models of text inferential processes, and the role of social context as in sociocultural theories of reading.

Given the scarcity of studies examining reading strategies in the Saudi context, reading theories and models reviewed above provide the backdrop to investigating the patterns of reading strategies perceived to be used by Saudi EFL learners. Exploring the relationship between the learners' reading strategies, their lexical knowledge, and their

EFL reading comprehension would add to our understanding of the L2 reading process in general, and Saudi EFL reading in particular. Theoretically speaking, the study recognizes the role of the reader as well as the role of bottom-up and top-down processes and the interaction between the two for successful foreign language reading.

Summary of Organization

After this introduction, Chapter II provides a focused review of the relevant literature. Chapter II reviews several relevant issues including the main reading models, the role of vocabulary in EFL reading, extensive reading and its reciprocal relationship with vocabulary learning, the definition and the classification of reading strategies, the relationship between reading strategies and reading comprehension, and gender differences in the use of reading strategies. Relevant studies to EFL reading in Saudi Arabia are also reviewed throughout Chapter II according to their relevance to the issue discussed. Chapter III comprises the method of the current empirical study. This includes descriptions of the purpose of the study, participants, instrument, procedure, and data analysis. An elaborate description of the adaptation, translation, reliability, and piloting of the reading strategies survey, adapted from Mokhtari & Sheorey (2002), is also provided. The instrument section also provides information on a reading comprehension test, and a new version of the Vocabulary Level Test (Schmitt, 2000) to be used in the current investigation.

The students' performance on the reading comprehension and vocabulary tests allows objective evaluation of reading strategies and their association with skilled and poor readers. The methodology chapter also describes how the data from the three

instruments are analyzed using the Statistical Package for the Social Sciences (SPSS, version 11.0). The results of the study are reported in Chapter IV. This section basically presents the findings of the analyses conducted to address the five research questions. Chapter V discusses the results and their pedagogical and research implications. This section also presents some recommendations for the teaching of EFL reading in Saudi Arabia, recommendations for future research, the limitations of the study, and the research conclusion.

Chapter II

Review of the Literature

Introduction

The current study was designed to examine the relationship among three important variables in L2 reading. These variables are reading strategies, vocabulary knowledge, and reading comprehension. The study was also designed to examine the impact of gender and proficiency related factors on this relationship. Another important purpose was to provide descriptive information about each variable as it pertains to university EFL learners in Saudi Arabia.

Since the current study is theoretically based on interactive models of reading, which recognize the contribution of both the reader and the text to the reading process and the interaction between bottom-up and top-down processes, the first section of the review of the literature reviews prominent reading models. These include bottom-up, top-down, and interactive models. The second section reviews the role of vocabulary in ESL/EFL reading. The third section discusses extensive reading as a tool for the development of several reading skills and strategies. This section also reviews elements of the reciprocal relationship between reading and vocabulary learning. The fourth part of the literature review is devoted to reviewing reading strategies and how they relate to L2 reading ability. A major part of this section focuses on important reading strategies like having a purpose in reading, developing and activating background knowledge, using context clues, summarizing, and using critical reading techniques. The fifth section reviews the literature on the impact of gender on second language learning strategies in general and reading strategies in particular. Finally, I present the need for the current

investigation and the gap it intends to fill in our knowledge about EFL reading at the university level in Saudi Arabia

Models of Reading

The different views concerning the nature and the process of reading have resulted in the emergence of several reading models in the last four decades. Prominent models like the bottom-up model (Gough, 1972), the top-down model (Goodman, 1967; Smith, 1971), and the interactive model (Rumelhart, 1977, 1980; Stanovich, 1980; Carrell, 1983a, 1983b) are usually discussed in the literature on L2 reading. Almost every single reading strategy looked at in the current study seems to be based on some of the theoretical assumptions of these models. In this section, I will briefly discuss the main tenets of these models and how they relate to vocabulary knowledge and reading strategies.

Bottom-up Models

The bottom-up theory of reading was a prevalent theory in the 1960s which was revived by Gough's (1972) views of the reading process. This model is usually described as a linear model. The reader starts with letters in the decoding process and then decodes words and then sentences. It is a data driven process as it mainly uses the textual elements in constructing the meaning of a passage. For fluent readers, this process becomes so automatic that sometimes the reader is unaware of such a process. Since it emphasizes sight reading of words in isolation, rapid word recognition is important to the bottom-up approach (VanDuzer, 1999).

Bottom-up models are hierarchical, specifying that one needs to know all the letters of a word to access the meaning of the word and that one needs to know all the

words in a clause or a sentence to access their total meanings (Paron, 1997). Although this view may not completely encompass what goes on while reading, the bottom-up approach does put more emphasis on knowledge of vocabulary than other models do. Beyond letter recognition, words in bottom-up models seem to represent the basic units of meaning in sentences whose comprehension is a prerequisite for text comprehension.

A second important aspect of the bottom-up model is its focus on orthographic recognition. Second language learners, like the Saudis, whose first languages have different orthographic systems from the target language may have some difficulty in word identification and recognition (Coady, 1979). This observation emphasizes the role of vocabulary knowledge, which facilitates automatic decoding in second language reading. Pressley (2000) suggested that skilled decoders recognize frequent letter chunks, prefixes, suffixes, and foreign root words which free more memory for comprehension. It seems that the more effort put in decoding words, the less processing capacity is left for comprehension. It has also been confirmed that fast decoding improves comprehension (Breznitz, 1997; as cited in Pressley 2000).

One problem with bottom-up models is the way they view the relationship between letters and words. Although Gough (1984) believes that word recognition is mediated by letter recognition, Terry, Samuels, and Laberge (1976; as cited in Samuels & Kamil, 1984) have found frequent words to be processed and identified as holistic units. They found no difference in the processing time between short and long words, which supports a holistic word-recognition processing. Knowledge of vocabulary is certainly operating in the holistic view of word-identification. I believe that the larger the size of vocabulary one has, the faster the lexical access and hence word identification.

Another problem with the bottom-up model of reading is that it does not seem to consider the contribution of the context and the reader's background knowledge to reading comprehension. In other words, the hierarchical nature of the model makes it overlook more global processes that take place while reading. Going beyond the printed letters seems to receive no or little attention in this model. Recognition of such inadequacies of the bottom-up model in explicating the reading process led to the emergence of other models like the top-down model of reading.

The Top-down Model

Goodman (1967) introduced the top-down model of reading, in which reading was viewed as "a psycholinguistic guessing game." Another renowned advocate of the top-down model is Smith (1971). This model is a concept driven model where readers' background knowledge and expectations guide them in their reconstruction of the meaning of the text. The readers start with having certain expectations about the text derived from background knowledge. They then use their vocabulary knowledge in decoding words in the text to confirm, disconfirm, or modify previous expectations (Aebersold & Field, 1997). This process is usually called sampling of the text. Describing the sampling process, Cohen (1990) maintains that the reader does not read all words and sentences in the text, but rather chooses certain words and phrases to comprehend the meaning of the text (p.75).

The top-down model focuses on reading skills like prediction, inferences, and guessing from context. These are some of the strategies examined in the reading test and the reading strategies survey of the current study. Unlike the bottom-up model, texts have no meaning in themselves in top-down theories. It is the reader who reconstructs

the meaning of the text by fitting it into his or her prior knowledge. This prior knowledge assumes an extensive knowledge of word meanings and sentence and discourse structures. Samuels and Kamil (1984) have noted that, "It is more accurate to assert that [Goodman's] model always prefers the cognitive economy of reliance on well-developed linguistic (syntactic and semantic) rather than graphic information" (p.187). This would certainly entail the existence of a well-developed linguistic knowledge, of which lexical knowledge may be the most important. This also indicates that the top-down model assumes that readers would have no decoding problems to use the text as a prompt for activating and implementing global and top-down processes and strategies. Thus, some reading researchers (e.g., Eskey, 1988 & Stanovich, 1980) believe that the top-down model of reading seems to explicate the reading process of fluent readers but not poor or beginning readers.

I personally believe that the top-down model presupposes quite an extensive knowledge of vocabulary. In the process of predicting and sampling, readers would guess the meaning of words based on their context and, therefore, they would not need to read all the letters in a recognizable vocabulary item. Such ability will require both advanced recognition knowledge of vocabulary and a familiarity with the topic of the text. Yang (1997) found automated recognition of vocabulary items to be the focus of vocabulary acquisition in early second language acquisition and not semantic relationships as the top-down model of reading suggests. Going beyond the printed letters is one of the main strengths of the top-down model. However, not focusing on other bottom-up processes and their interaction with top-down processes, or taking other lower processes for granted is an obvious weakness of the model.

The Interactive Model

The inadequacy of both the bottom-up and top-down models in explicating the reading process has led to the emergence of the interactive approach to reading. The model espouses that neither bottom-up nor top-down models can by themselves describe the reading process. Introduced by the writings of Rumelhart (1977) and Stanovich (1980), the interactive model suggests an interaction between bottom-up and top-down processes. Each type of processing is seen to contribute to the reconstruction of the message encoded in the text (Eskey, 1988, p. 93). In his interactive compensatory model, Stanovich (1980) suggests that poor readers tend to resort to high level processes more often than skilled or fluent readers. The use of top-down processes seems to compensate for poor readers' lack of recognition skills or bottom-up processes.

The interactive model also incorporates several major findings from research on schema theory. Anderson and Pearson (1984) describe the schema as "an abstract knowledge structure" (p. 259). A schema is usually described as a kind of prior knowledge that readers use to put the information from the text in a certain perspective to better comprehend the text. Some schema researchers suggest that comprehension of texts involves using the text as a guide to the kind of background information that needs to be activated for comprehension (Carrell, 1983a). Bensoussan (1998) found that 23% of EFL learners' incorrect answers to comprehension questions were attributed to activating inappropriate schemata. Carrell (1987) describes two types of schemata- a content schema and a formal schema while Cohen (1990) suggests the existence of three types of schemata, namely content (subject, culture, etc), language (vocabulary, cohesive

structures, spelling, and punctuation), and textual (rhetorical structure of different genres).

Eskey (1988) maintains that knowledge about language is part of the schema that can be readily available for fluent native speakers and thus activated automatically. In the realm of second language reading, Eskey believes that rapid and accurate decoding is an important skill for L2 readers. This accurate decoding will certainly allow other important higher and top-down processes to operate. What L2 readers usually need to use the text in such a way is linguistic knowledge, of which vocabulary knowledge is paramount. Such knowledge enables the readers to use the text efficiently in the process of comprehension. Clark (1979) has also suggested the existence of a linguistic threshold after which L2 learners may read L2 texts as efficiently as they read their L1 texts.

Stanovich (1980) and Carrell (1984) believe that bottom-up and top-down processes compensate for each other in the process of reading. When a reader lacks the appropriate content schema for a certain text, she will rely more heavily on bottom-up processes to compensate for the necessary background knowledge. The opposite could be true about some readers who lack the bottom-up processes necessary to comprehend a text. It is incorporated in the interactive approach assumption that good readers are good at both decoding and interpreting the text (Eskey, 1988). This approach also endorses the idea that having automatic recognition skills of letters and words will free the reader's mind to make connections between the parts of the text, interpret the text more accurately, and comprehend what they are reading. Such interaction between high and low level processes seems to take place simultaneously.

I believe that the above discussion of the major reading models suggests that vocabulary knowledge is an important component of these models. In the bottom-up model of reading, rich vocabulary knowledge makes decoding and word recognition quicker and more efficient. Reading fluency and automatic decoding would not be achieved without a strong knowledge of the meaning and form of words in the text. In the top-down model, vocabulary knowledge is part of the content and linguistic schema required for successful reading. In the interactive model of reading, vocabulary knowledge seems to be the most important factor as it relates to both top-down and bottom-up processes. Eskey & Grabe (1988) maintained that although vocabulary knowledge is regarded as an important component of all reading models, it is also recognized as "a prerequisite to fluent reading" in the interactive model of reading (p. 226).

The interactive model of reading described thus far shows clearly that several types of prior knowledge contribute to successful and fluent reading. I adopt this position in the current study. To explore different aspects of the interactive model in the EFL reading of Saudis, several global, problem-solving, and support strategies as well as the vocabulary size of the readers need to be considered when examining their reading comprehension.

Since the current study is founded on interactive theories of reading, aspects of both the top-down and bottom up models of reading will be examined here. The study will look at higher level reading processes and strategies like activating background knowledge, guessing word meaning from context, predicting the content of a reading

passage, and reading important parts of a reading text and ignoring less important ones, etc. The study will also examine aspects relevant to EFL learners' language proficiency as manifested in the relevant construct of vocabulary knowledge. This will be achieved by estimating the learners' English vocabulary size which usually reflects their lower level identification skills. The different aspects of the reading process will be examined in light of the EFL learners' reading comprehension ability. Thus, the study may present evidence regarding the type of reading processes the learners in the current study seem to be using or lacking. This review, therefore, looks at the contribution of every variable examined in the current study and how it affects reading comprehension. In the remaining parts of this chapter, relevant aspects of the interactive model to the current study will be reviewed. In the following section, the bottom-up aspect of reading is reviewed by exploring the impact of vocabulary knowledge on L2 reading.

Role of Vocabulary Knowledge in L2 Reading

As has been noted earlier, some second language researchers seem to consider reading as the primary skill in second language learning, especially in academic settings (Huckin & Haynes, 1993, Anderson, 1999, and Grabe, 1991). The inability to skillfully read L2 materials may hinder the academic and professional development of those whose professions and academic programs require accessing and obtaining information in the target language. The important role attributed to L2 reading promotes researchers' interest in examining factors that may relate to fluent and successful L2 reading. In this section, I will discuss the construct of target language proficiency as manifested in L2 vocabulary knowledge. Although the focus of the discussion will be on the role of L2

vocabulary knowledge in L2 reading, I will briefly discuss other linguistic factors like L2 syntactic knowledge.

The primary debate concerning factors that may influence foreign language reading was introduced by Charles Alderson in 1984. Focusing on the reader's contribution to EFL and ESL reading, Alderson (1984) examined the main factors that may impact L2 reading. The question was whether inefficient reading in L2 is a reading problem or a language problem. Language problems were manifested in inadequate L2 linguistic proficiency while reading problems were related to the learners' L1 reading ability and strategies. Alderson presented the two different views of L2 reading researchers on what may result in an efficient L2 reading ability, i.e., inefficient reading ability or low level language proficiency. Some L2 reading researchers (e.g., Coady, 1979) seemed to subscribe to the *reading universal hypothesis* which suggests that the reading process is the same whether one is reading in his L1 or L2. Some other researchers (e.g. Yorio, 1971) attributed the problem to poor target language proficiency. The later view was supported by some empirical studies like Yorio (1971), and Alderson, Batien, and Madrazo (1977, as cited in Alderson, 1984) that have found L2 proficiency to be the more accurate predictor of the ability to comprehend reading texts in the target language than L1 reading ability. Alderson (1984) examined all relevant views and studies and stated that the problem "appears to be both a language problem and a reading problem, but with firmer evidence that it is a language problem, for low levels of foreign language competence, than a reading problem" (p. 24).

The Threshold Hypothesis

Alderson's conclusion was consistent with the language threshold hypothesis (Clark, 1979). According to this hypothesis, L2 readers need to reach a certain level of competence in L2 for their L1 skills and strategies to transfer to L2 reading. Grabe (1991) also suggested that knowledge of vocabulary and syntax are crucially important to reading comprehension. The RAND report (2002) included vocabulary and linguistic knowledge as one of the most important elements after automatic decoding in individual variation in children's L1 reading comprehension. Recognizing the significant role of context in the acquisition of vocabulary, Nagy (1995) maintains that, "Effective use of context to disambiguate words, or to infer the meanings of unfamiliar words, depends on a variety of types of knowledge--world knowledge, linguistic knowledge, and strategic knowledge."

Aspects of Linguistic Proficiency in L2 Reading

When reviewing the role of linguistic proficiency in foreign language reading, I felt that language proficiency is usually equated with knowledge of grammatical structures and how it impacts the readability of the text rather than with vocabulary knowledge. This could be the result of the commonly discussed neglect of the study of vocabulary before the 1980s (Meara, 1982). However, I believe that a good knowledge of vocabulary can help readers develop a better knowledge of grammatical structures and other language patterns beyond the sentence level. Recognizing the role of lexical knowledge in the acquisition of L2 structures, Ellis (1997) stated, "Learning discourse involves sequencing the lexical units of the language: phrases and collocations. Learning grammar involves abstracting regularities from the stock of known vocabulary" (p 126).

Although aspects of syntactic knowledge may have some impact on L2 reading at certain levels of language proficiency, it is beyond the scope of the current study to provide a detailed review of how this linguistic aspect influences L2 reading. Instead, I will focus on the more significant and less researched role of vocabulary on L2 reading. Comparing the situation of foreign language speakers to native readers who may not have difficulty mastering L1 grammar structures, Yorio (1971) stated,

> With the foreign speaker, the situation is similar. Depending on his degree of proficiency, he will at least recognize a certain number of grammatical structures. Eventually, it will be possible for him, due to the systematic nature of language, to master grammatical structures almost in the same way that a native speaker does. The situation is by no means identical, but it shares some essential features. His acquisition of vocabulary may, however, be a more difficult process, because of differences in the nature of lexical and grammatical systems.

Some researchers also believe that vocabulary or lexis should be included in the form-focused instruction to supplement the dominant grammatical perspective of the movement (Haastrup & Henriksen, 2001).

Second language learners and researchers seem to invariably recognize the role of vocabulary in L2 learning in general and L2 reading in particular. Research has confirmed that second and foreign language learners consider vocabulary the biggest obstacle in reading when compared with syntactic and textual difficulties (Cziko, 1978). Zheng (2002) found that EFL learners in China believe that vocabulary knowledge plays a tremendous role in their reading comprehension. This belief seemed to weaken as the students acquired the 3000 most common words of English vocabulary. Krashen (1989)

also suggests that language learners are aware of their need for vocabulary, and therefore attribute their linguistic deficiencies to inadequate vocabulary. As a consequence, those learners usually carry dictionaries around while learning a second or a foreign language. In fact, most first and second language reading researchers consider vocabulary knowledge an important variable that affects reading comprehension (Alderson, 1984; Nation & Coady, 1988; Laufer, 1992; Alderson, 2000, Pressley, 2000, and Nagy & Scott, 2000).

From my personal experience, I believe that the public school EFL curriculum in Saudi Arabia is loaded with grammatical explanation at the expense of vocabulary and reading instruction, which results in the students' failure to acquire enough vocabulary and to develop reading skills. A student's limited vocabulary size may well lower his or her linguistic competence in almost all language skills. Therefore, I think providing learners who have limited vocabulary size with extensive grammatical instruction may not prove useful. Such learners lack the basic units of meaning on which grammatical rules would operate.

In fact, the impact of syntactic knowledge in reading has not been completely substantiated in either old or recent investigations. Ulijin (1978, as cited in Alderson, 1984) attributed reading comprehension problems in a foreign language to lack of knowledge in word meanings and subject schemata and not to inadequate grammatical knowledge. In the foreign language arena, Khaldieh (2001) has also investigated the role of knowledge of both *iʿraab* (grammar and parsing) and vocabulary in the reading comprehension of proficient and less proficient American learners of Arabic as a foreign language (AFL). Khaldieh found vocabulary knowledge to have a significant effect on

AFL reading comprehension but not *i'raab*. Thus, the researcher suggests that reading comprehension is independent of knowledge of *i'raab* and depends mainly on vocabulary knowledge.

In the L1 language instruction arena, Layton *et al.* (1998) provided their students with syntactic training focused on semantic features of words. Although the study found that syntactic awareness could be improved through training, improved syntactic awareness did not seem to affect reading ability. In her review of several first and second language studies, Bernhardt (2000) maintained, "syntactic complexity does not necessarily predict text difficulty" (p. 797). Although the focus of the above discussion was on the important role of L2 vocabulary, it should not be taken to mean that grammatical knowledge has no impact on L2 reading. The crux of the discussion is that although both grammatical knowledge and vocabulary knowledge have their recognized role in L2 reading, it is the latter that more accurately predicts L2 reading ability.

Vocabulary Size and L2 Reading

Vocabulary knowledge seems to have an obvious and distinct role in L2 reading comprehension. Nation and Coady (1988) emphasize the fact that although vocabulary knowledge is not the only factor contributing to reading comprehension, vocabulary can be an "accurate predictor" of the difficulty of a certain text. In fact, ESL vocabulary researchers sometimes debate the amount of vocabulary second language readers need to achieve adequate comprehension of reading texts. The required vocabulary size seems to differ according to the genre of the text. Hu and Nation (2000) have found that adequate comprehension of fiction works requires knowing 98% of the words in that text. Laufer (1997) presented results from her previous studies proposing a vocabulary threshold of

3000 word families for effective reading and incidental vocabulary learning from context. Nation (2001) believes that language learners need a minimum vocabulary size of 2000 word families and a good knowledge of academic vocabulary to cover about 90% of unsimplified English texts. Even with this vocabulary size, the learners may need to deal with a number of unfamiliar words, comprising 10% of the words in the text. Although the ratio of the required vocabulary differed according to the nature of the text, e.g., fiction works call for the use of a larger variety of vocabulary items, a minimum vocabulary size of 3000 word families seems to be the threshold for successful L2 reading.

Estimates of the needed vocabulary knowledge promote the belief that vocabulary is an important factor in understanding the reading problems experienced by second language learners (Laufer & Sim, 1985). The lack of L2 vocabulary knowledge is considered a major constraint on correct guessing from context, which negatively influences L2 reading ability (Cziko, 1978, Laufer, 1997). Laufer and Sim (1985) investigated the linguistic threshold hypothesis for adequate reading comprehension. They conclude that when it comes to foreign language learning vocabulary knowledge is the most needed followed by subject knowledge and syntactic knowledge. According to Qian (2002), Laufer's research on the relationship between vocabulary knowledge measured by receptive vocabulary size and reading comprehension shows a high correlation between these two constructs ranging from (.50) to (.75). The variation in the correlation coefficients might have been caused by differences in research methodology and participants' characteristics in the different studies. Investigating the impact of breadth and depth of vocabulary on ESL reading, Qian (1999) found a high correlation (r

= .82) between the scores on the Vocabulary Levels Test and scores on the reading subset of the TOEFL. Using a more heterogeneous group comprising learners from different L1 backgrounds, Qian (2002) also found a strong correlation (r = .74) between these two variables.

These old and recent research findings show a very strong relationship between ESL/EFL students' vocabulary size and reading comprehension. The impact of vocabulary is so profound that researchers were able to provide estimates of the size of vocabulary needed for successful comprehension. An important implication of these findings is that ESL/EFL students' language proficiency at the word level should receive the most attention at beginning and intermediate levels of language learning for their reading skills to develop.

It should be noted here that I am neither advocating the idea that vocabulary is all there is to L2 reading, nor am I assuming that the relationship between vocabulary and reading is a simple one. However, adequate vocabulary knowledge seems to be a prerequisite for more high level reading processes like activating appropriate background knowledge and guessing words successfully from context. The researcher is guided here by Perfetti's (1995) contention that effective readers use lexical processes to quickly identify words which results in a more effective use of the context. Perfetti stated:

> Helping students develop text problem solving skills, e.g. using context to figure out interpretations, intentions, conclusions, etc. is a good idea. But getting good at word identification is an important goal in setting the stage for the successful use of such comprehension strategies. (p. 112)

Within the realm of second language reading research, incidental learning of new vocabulary depends almost completely on guessing the meaning of new words from context. However, the use of this reading strategy would require a vocabulary size of at least 3000 words (Laufer, 1997, 1992). Helping EFL learners acquire the most common 3000 words would provide them with the necessary tool to start learning words from context and to approach FL reading texts in a way that is similar to how L1 learners approach their primary school texts. After all, effective reading not only depend on understanding the context of the text, but also on "fast context-free" recognition of words (Perfetti, 1995, p.108). In fact, learners beyond the linguistic threshold may utilize the text and, therefore, apply global reading strategies like guessing from context and using background knowledge more efficiently (Hudson, 1982).

Recognizing the importance of lower level decoding processes, Uljin and Salager-Meyer (1998) have also suggested that improving the word-identification skills of low proficiency readers is more helpful than developing more global reading skills like guessing from context. While discussing first language reading, Pressley (2000) argues that instruction on developing reading comprehension should improve word-level competencies, activate and build background knowledge, and encourage the use of comprehension strategies. Reviewing thoughts on the role of automatization of decoding in reading, Ulijin and Salager (1998) stated, "The incapacity to automatize word encoding, i.e., the lack of speedy access to receptive vocabulary, results in a slow reading rate which in turn affects reading comprehension" (p.81). In discussing the implications of interactive reading models for ESL reading, Grabe (1988) considered "the need for a massive receptive vocabulary that is rapidly, accurately, and automatically accessed- a

fact that may be the greatest single impediment to fluent reading by ESL students" (p. 63). The above discussion suggests that although successful and appropriate use of the context and the activation of background knowledge may be among the most important reading strategies for upper intermediate and advanced ESL/EFL learners, it should not receive the total attention in solving the reading problems of beginning readers.

Vocabulary Instruction and L2 Reading

What also emphasizes the important role of vocabulary in reading in a foreign or a second language is the positive impact that some vocabulary instruction studies have found on reading comprehension. Such instruction aimed basically at improving an important aspect of the students' language proficiency, i.e., vocabulary knowledge. Finding an apparent and a strong association between knowledge of the 2000 most common words in English and reading comprehension, Coady *et al.* (1993) maintain that individually instructing ESL learners on the most common 2000 words is most valuable. One of their conclusions was that vocabulary instruction could result in enhanced reading ability.

Paribakht and Wesche (1997) also found their reading plus vocabulary instruction group to outperform their reading only group in the depth of vocabulary knowledge. The researchers found that the reading only group's knowledge of the tested vocabulary was at the recognition level while the reading plus group reached a higher level of vocabulary knowledge. This gain was attributed to the different types of vocabulary exercises which promoted different mental processes. Although the above review of vocabulary instruction is limited to two major contributions, it shows clearly that more focused vocabulary instruction and exercises usually results in better reading ability and efficient

vocabulary knowledge. Such instruction should not be used as necessary and sufficient tools to improving reading ability, but should be used in conjunction with other sound reading instruction and activities.

EFL Vocabulary Learning in Saudi Arabia

EFL programs, where the second language input is limited, need to compensate for the limited exposure to the target language. If language programs fail to help the learners get the input they need, the teaching of all language skills may be affected. The teaching of EFL vocabulary in Saudi Arabia is no exception. In a qualitative study recognizing the importance of the vocabulary threshold in ESL/EFL reading, Al-Akloby (2001) investigates the teaching and learning of vocabulary in public high schools in Saudi Arabia. Although the study was limited to three high schools in a medium sized city in the Southern region of Saudi Arabia, Al-Akloby pointed to sources of vocabulary learning failure in the Saudi curriculum and textbooks, namely, inadequate use of vocabulary learning strategies, insufficient presentation of vocabulary items, a vocabulary presentation that is limited to pronunciation and meaning, and ineffective use of vocabulary recycling and testing. In spite of their having positive attitudes towards English learning, EFL high school students were observed to have low motivations.

In another relevant study, Al-Bogami (1995) examined the vocabulary knowledge of 72 students at both intermediate and secondary schools in Riyadh, the capital city of Saudi Arabia. The vocabulary test used in the study was based on the students' textbooks, *English Pupils' Book.* The total average score on these tests ranges from 35.8% for intermediate students and 39.6% for secondary school students. Since the tests were based on vocabulary taught in the students' textbooks, the researcher concluded that

knowing only one third of the vocabulary taught to EFL Saudi students is indicative of poor English vocabulary knowledge.

In another study, Al-Hazemi (1993) examined the vocabulary size of military cadets at King Abdulaziz Military Academy in Saudi Arabia. He used Meara and Buxton's Eurcentres Vocabulary Test (EVST). The test was based on the frequencies of the most common words in English. Unlike the multiple-choice format of the vocabulary test used in the current study, the EVST has a yes/no format. Such tests ask test-takers yes/no questions about whether they know the word in question or not. To control for guessing, the test has some English words and some words that fit the organization of English but are not real English words. Al-Hazemi maintained that although a 1993 syllabus document showed that the Ministry of Education hoped that public school students would leave high school with a vocabulary size of 3,000 words, the scores of his postsecondary school subjects were below the 1000 word level. In fact, the highest ten scores among Al-Hazime's 137 subjects ranged from 737 words to 917 words.

The above review shows that only two studies have looked at the vocabulary knowledge of EFL learners in Saudi Arabia. One of these studies (Al-Bogami, 1995) examined the vocabulary knowledge of intermediate and high EFL learners at different levels of proficiency using a self-designed vocabulary test. Using a somewhat standardized test, the other study (Al-Hazemi, 1993) was limited to examining the vocabulary knowledge of military cadets beyond the high school level. These studies may not provide comprehensive estimates of vocabulary size of high school graduates in Saudi Arabia. The two studies were also limited in their scopes to examining the

vocabulary size of male students, and therefore, did not provide any information on gender differences in Saudi EFL learners' vocabulary knowledge.

Among other things, the current study is an attempt to fill this gap. Testing Saudi EFL learners' vocabulary knowledge will provide estimates of the vocabulary size of a wider sampling of public schools graduates at the end of six years of EFL instruction. Administering the test at both males' and females' higher education institutions in different parts of Saudi Arabia will provide data representative of the vocabulary size of EFL learners in Saudi Arabia. Moreover, the findings of the above mentioned investigations show a dire need for some statistical data that show how the outcome of EFL education in Saudi Arabia in terms of vocabulary gains would compare with more standardized measures of vocabulary knowledge like the Vocabulary Levels Test.

The findings of the current study may also explain potential reading problems relevant to the vocabulary size needed for reading unsimplified English texts. By providing statistics and measures about Saudi EFL learners that are common in the field of vocabulary and reading research, language educators in Saudi Arabia may use the findings of the current study to relate to the huge body of research on L2 reading and to improve L2 reading instruction and vocabulary acquisition conditions.

In discussing the role of vocabulary in L2 reading, I presented the main debate of whether L2 learners' low reading ability could be attributed to poor linguistic proficiency or to reading problems, including poor L1 reading skills. Although inefficient reading is considered both a reading and a language problem, reviewing the threshold hypothesis and some other relevant studies indicates that poor linguistic proficiency may be the main problem for beginning L2 readers. Among the different aspects of linguistic proficiency,

vocabulary knowledge was consistently found to be the more accurate predictor of L2 reading ability. At beginning and intermediate levels, inefficient vocabulary knowledge seems to be more detrimental than inefficient grammatical and discourse knowledge of L2 reading. The vocabulary instruction studies reviewed had also lent support to the important role of vocabulary knowledge in L2 reading. And as the last section has shown, studies on the vocabulary knowledge of Saudi EFL learners showed the need for a more comprehensive examination of the learners' vocabulary knowledge.

Based on the empirical evidence presented above, a good knowledge of English vocabulary will certainly improve L2 learners' reading skills, which may also improve other language skills. Considering studies on the simplification of texts, Nation (1990) asserts that a vocabulary size of 2000 to 3000 words would allow second language learners to express themselves effectively while writing. He also thinks that language learners should shoot for the 2000 words level if they want to speak English. Even listening to English may require a vocabulary size of about 1000 to 1500 words (Nation, 1990). I also believe that a solid knowledge of the basic units of meaning in a certain language would help learners benefit from other forms of instruction including grammatical, and discourse instruction.

In short, the above review showed that sufficient vocabulary knowledge would allow EFL learners' access to higher level reading strategies necessary for more efficient reading. However, since the review might have emphasized focused vocabulary instruction as a direct tool of expanding EFL learners' vocabulary knowledge, I will review, in the following section, research findings on extensive reading as another

important tool for both vocabulary learning and the development of reading skills at higher language proficiency levels.

Extensive Reading

Interest in extensive reading seems to coincide with the advent of the communicative approach to language teaching. Thanks to the writing of Steven Krashen (e.g. Krashen, 1989 & 1993), extensive reading was viewed as one form of second language input, i.e., one of the sources through which second language learners are exposed to the target language. The basic assumption is that second and foreign language learners will learn aspects of the target language including vocabulary by reading more and more texts in that language. In this section, I discuss issues related to the advantages of extensive reading over intensive reading in the development of reading skills and the role of extensive reading in vocabulary acquisition.

Different terms are used in the literature to refer to the concept of extensive reading including *pleasure reading, free reading, silent sustained reading,* etc. However, the term *extensive reading* seems to be more inclusive of the other more specific terms. It is also more commonly used in the fields of first and second language reading. Richards *et al.* (1992) define *extensive reading* in the *Dictionary of Language Teaching & Applied Linguistics* as "reading in quantity and in order to gain a general understanding of what is read. It is intended to develop good reading habits, to build up knowledge of vocabulary and structure, and to encourage a liking of reading" (p. 133).

In Saudi Arabia there seems to be an emphasis on teaching intensive reading skills, i.e., "close and deliberate analysis of short passages" (Nation, 2001, p.149). The

EFL textbooks usually present reading lessons in the form of reading passages followed by comprehension questions and vocabulary exercises. According to Aebersold and Field (1997), intensive reading is the common approach to teaching reading in most L2 classrooms and textbooks. As indicated by the small vocabulary size of the EFL learners at both intermediate and secondary schools in Saudi Arabia, intensive reading instruction does not seem to develop adequate reading skills. The classroom time seems to be disproportionately spent on developing intensive reading skills at the expense of extensive reading. The problem with intensive reading instruction is that it may well turn texts into vehicles for language study and exercises rather than carriers of information.

In ideal situations, EFL readers should develop both intensive and extensive reading skills. In fact, extensive reading may become more important at higher levels of language proficiency. In a recent experiment, Bell (2001) looked at both the reading speed and reading comprehension of two groups of learners who went through either an intensive or extensive reading program. Extensive reading was provided in the form of graded readers. Treatment results showed that learners from the extensive reading group significantly outperformed the subjects in the intensive reading group both in reading speeds and reading comprehension scores. Cohen (1990) also considered reading a lot of materials in the target language as a method to solve the problem of reading word-by-word.

Some researchers have taken the position that extensive reading is sufficient for the development of reading ability as well as other language skills (Krashen, 1993). Other researchers believe that extensive reading should be regarded as a

teaching/learning procedure and not as a component of reading (Susser & Robb, 1990). The position taken in this study is that extensive reading is an important component of reading instruction, perhaps as important as intensive reading. Williams (1986) suggests that an hour should be spent on extensive reading for every hour spent on intensive reading. Thus, some of the studies that advocate extensive reading and language skills are concerned about the amount of attention intensive reading has received at the expense of extensive reading (Hamp-Lyons, 1983).

Proponents of extensive reading (e.g., Day and Bamford, 1998) usually suggest that by allowing the students to read what they like and providing a positive classroom environment, the extensive reading approach to reading instruction could foster positive attitudes towards reading and language learning and motivate second language learners to read and learn more. However, this does not seem to work in all contexts. Grabe (1995) maintained that one major problem with extensive reading is the lack of motivation on the part of EFL learners and some teachers to spend class time on silent sustained reading or to assign outside reading. The success of such programs seems to depend on how reading is regarded in a specific culture. However, if EFL learners realize that extensive reading of sound materials could solve most of their reading problems, they may seriously consider the use of this strategy.

Although pleasure reading is not uncommon in Saudi Arabia, it is almost entirely limited to reading Arabic newspapers and magazines. Pleasure reading does not seem to have its deserved share of people's spare time, as it does in some Western cultures. The very recent spread of literacy and the popularity of other forms of entertainment seem to

render reading unimportant among young people in Saudi Arabia. The reading of newspapers and magazines in Arabic for pleasure or information does not seem to transfer to reading extensively in a second language even among those majoring in foreign languages. The current study will either confirm or disconfirm this hunch as EFL learners in Saudi Arabia are asked about the amount of time they spend on outside reading in English.

A major debate within vocabulary research concerning the optimal way of vocabulary learning exists. Researchers are divided into believers and doubters in Krashen's claim that extensive reading is a necessary and sufficient requirement for vocabulary acquisition (Mason & Flahive, 1998). Thus, some researchers advocate direct instruction of vocabulary while others support the use of extensive reading as a tool for the incidental learning of vocabulary. Some other researchers (e.g., Nagy, 1988; Schmitt, 2000) seem to recognize both word-focused activities and extensive reading as important tools for the acquisition of L2 vocabulary.

Proponents of vocabulary instruction maintain that only small vocabulary gains are obtained from reading. Laufer (2001) surveyed some extensive reading studies and concluded that reading may not be the "main source of L2 learners' vocabulary" (p 46). Laufer went further to suggest that word-focused activities are superior to reading for the acquisition of L2 vocabulary. The bulk of Laufer's argument is based on the fact that L2 learners could not read the same amount of texts that L1 learners read, something in the range of a million words per year. It should be noted here that most advocates of explicit vocabulary instruction do recognize the importance of extensive reading. However, some

vocabulary researchers (e.g., Schmitt, 2000) believe that explicit vocabulary instruction may be more important at early stages of second language learning. Even for beginning readers, the linguistic level of extensive reading can be controlled to render comprehensible input by using graded readers instead of authentic materials. Although vocabulary knowledge *per se* was not tested, some extensive reading experiments which employed graded readers with ESL learners like those by Tudor & Hafiz (1989) and Hafiz & Tudor (1989) found positive effects on the learners' reading and writing skills. Improvement in writing skills were also observed among EFL learners in Pakistan upon their completion of an extensive reading program (Hafiz and Tudor,1990).

Several old and recent second language vocabulary and reading studies have provided evidence for the importance of extensive reading in the acquisition of second language vocabulary. A classical study was conducted by Sargi *et al.* (1978) and involved the reading of the novel *A Clockwork Orange*. The English novel has 90 Russian slang words. Although the test was not expected, the learners were able to recognize 75% of the Russian words. A more recent and well conducted study on the role of extensive reading in vocabulary learning is Horst, Cobb, & Meara (1998). This study uses EFL students in an intensive English program to show that learners can recognize the meaning of new words through extensive reading. The subjects read a simplified novel and showed more incidental word leaning. Both a pre- and post-test were used to control for previously known words. The study found that learners with larger vocabulary size learned more vocabulary incidentally. Extensive reading was, therefore, viewed as one strategy for vocabulary growth.

Horst, Cobb, & Meara (1998) suggest that although the huge volume of reading for L1 learning would result in incidental vocabulary learning, for beginners and intermediate ESL or EFL learners to read millions of words is not possible. Thus, some vocabulary researchers suggest that important vocabulary items should be made salient in reading passages, which may enhance their chance of being acquired by second language learners (Hulstijn, 1992). Nagy (1988) introduced a more balanced view of vocabulary acquisition and reading. He discussed the importance of vocabulary strategies and how and when they should be used. He also emphasizes the fact that for the learners' vocabulary to grow they need more chances to learn words from natural context. Nagy also reported that out-of-school reading and other opportunities of extensive reading activities are claimed to result in vocabulary growth. The article seems to strike a balance between the proponents of extensive reading and those advocating vocabulary instruction.

Although some researchers seem to subscribe to either the extensive reading approach to vocabulary learning or to the vocabulary instruction approach, the balanced approach seems to be the most promising. It may be true that vocabulary gains from reading may not be huge at certain times. However, it is important to realize the importance of this strategy for the development of language skills in general and vocabulary knowledge and reading skills in particular. Zimmerman (1997) found extensive reading and vocabulary instruction to be more effective than relying on extensive reading alone.

Considering relevant studies, Nation (2001) maintained that, "extensive reading benefits quality of language use, language knowledge, and general academic

performance" (p. 150). Furthermore, Kim & Hall (2002) found participation in an interactive book reading program to develop aspects of ESL Chinese children's pragmatic competence. For the acquisition of vocabulary, extensive reading may be the main technique ESL/EFL learners need to develop once they reach a reasonable level of vocabulary knowledge, i.e., beyond the 3000 word families. Moreover, realizing the limitations of class time, extensive reading will help L2 learners to be more independent readers, especially in an EFL context like the Saudis' where exposure to target language input is so limited.

The current study will examine the amount of time EFL learners spend on reading outside materials in English and how this relates to their vocabulary size and reading comprehension ability. It is hoped that the findings of the current investigation will convince EFL educators in Saudi Arabia about the importance of extensive reading to the development of both EFL reading skills and language proficiency. In the following section, I review the literature on reading strategies and how they relate to reading comprehension ability.

Reading Strategies

The Importance of Reading Strategies

The recent focus on learning processes in language learning has led to an examination of the different leaning processes including the strategies learners use to develop and control their learning. Reading strategy research is part of this type of research. It emphasizes the reading process rather than the product of reading, i.e., reading comprehension. After considering the importance of vocabulary knowledge and decoding skills to second language reading, I examine in this section reading strategies as

another important aspect of reading. In fact, some reading researchers have attributed comprehension problems of students who have sufficient vocabulary knowledge and decoding skills to insufficient strategies and involvement in the reading process (Ryan *et al.;* as cited in Garner, 1987). Thus, in the current study, I look at the reading process as manifested in EFL reading strategies in light of the product of reading. After describing the reading strategies profiles of Saudi EFL learners, I hope the study will shed some light on some of the reading strategies associated with successful comprehension.

According to several EFL reading studies conducted recently in Saudi Arabia (e.g., Al-Arfaj, 1996; Al-Samani, 1999; & Al-Akloby, 2001), EFL learners seem to have positive attitudes towards learning English and reading EFL materials. These findings may well suggest that the low EFL reading proficiency problem may not relate to attitudinal factors. The problem, therefore, may well be attributed to a poor linguistic or strategic knowledge. Based on previous research, Sheorey and Mokhtari (2001) maintain that it is commonly believed that an awareness of reading strategies and comprehension monitoring is an important characteristic of good readers. They claim that to comprehend a text readers need to use their metacognitive knowledge about reading and "invoke conscious and deliberate strategies" (p. 433). This may mean that if the readers are not aware of certain reading strategies, they will not use these strategies while on the reading task. Thus, good readers both know and utilizes appropriate reading strategies.

If the current study, however, shows that EFL learners in Saudi Arabia are aware of most of the reading strategies associated with successful reading, the problem could lie in the students' inability to execute these strategies appropriately. Another reason for investigating reading strategies is that learning about readers' metacognitive knowledge

will help educators develop these readers into active, and what Pressley and Allferbach (1995) called "constructively responsive readers", i.e., responding to comprehension problems as they arise (Sheorey & Mokhtari, 2001). In the following section I cite some common definitions of reading strategies and describe the coding scheme employed in examining the reading strategies in the current study.

Definition of Reading Strategies

Several definitions of reading strategies are available in the literature on reading. According to Garner (1987), reading strategies are "generally deliberate, planful activities undertaken by active learners, many times to remedy perceived cognitive failure" (p. 50). Carrell, Gajdusek, & Wise (1998), on the other hand, defined reading strategies based on the writing of several reading researchers as "actions that readers select and control to achieve desired goals or objectives" (p. 97). Although the latter definition is more comprehensive, both definitions seem to capture the concept of a reading strategy as it is used in the current study.

The above definition encompasses what a reading strategy refers to in the current study. However, it is important to note that a distinction is usually made between reading strategies and reading skills. Some researchers suggest that most strategies are used deliberately while skills are somewhat automatic (Carrell, Gajdusek, & Wise, 1998). Cohen (1990) distinguishes the two by regarding a skill as a "general class of behaviors, while a strategy is the specific means of realizing that behavior" (p. 83).

The Different Classification of Reading Strategies

Some reading researchers classify reading strategies according to the time they are used, i.e., before, during, or after reading. Some other researchers categorize reading

strategies as either global or local according to the part of the text they focus on (e.g., Young & Oxford, 1997). A common distinction is also made between cognitive and metacognitive strategies. Garner (1987) states that, "if cognition involves perceiving, understanding, remembering, and so forth, then metacognition involves thinking about one's own perceiving, understanding, and the rest" (p. 16). Flavell (1979) maintained that "cognitive strategies are invoked to make cognitive progress, metacognitive strategies to monitor it" (p. 909). Moreover, Sheorey & Mokhtari (2001) suggest that the metacognitive knowledge of readers includes awareness of an array of reading strategies.

The classification scheme used to classify the reading strategies explored in the current study follows Mokhtari & Sheorey's (2002) Survey of Reading Strategies (SORS). According to Sheorey & Mokhtari (2001), the SORS is intended to give the researchers an idea about the *perceived* use of reading strategies and the frequency of use by post-secondary students while reading academic English materials encountered in college. The survey includes three types of strategies: global, problem-solving, and support strategies. Global and problem-solving strategies are similar in concept to cognitive and metacognitive strategies respectively. Mokhtari & Sheorey (2002) describe these types of reading strategies as follows:

1. Global strategies (GLOB) are those "intentional, carefully planned techniques by which learners monitor or manage their reading" (p. 4). These include (1) having a purpose in reading, (2) using background knowledge, (3) skimming, (4) reviewing text characteristics, (5) distinguishing between parts of the text that need careful reading and those which do not, (6) using tables and figures in the text, (7) using context clues, (8) using typological aids in the text, (9) critically

reading the text, (10) checking comprehension as one reads, (11) guessing what the material is about, (12) checking one's guesses about the text, (13) looking for main ideas, (14) distinguishing main ideas from supporting ones, and (15) connecting the meaning of known words to those whose meanings are unknown.

2. Problem-solving strategies are "actions and procedures readers use while working directly with the text. These are localized, focused techniques used when problems develop in understanding textual information" (p. 4). These strategies include (1) reading slowly and carefully, (2) adjusting reading speed, (3) paying closer attention to what is being read, (4) stopping to think about what has been read, (5) visualizing the information in the text, (6) rereading to increase understanding, (7) guessing the meaning of unknown word, and (8) getting back on track upon losing concentration, (9) reading word by word, and (10) checking words roots and prefixes. One of these strategies, i.e., reading word by word, may not be a useful reading strategy, but I thought it is a commonly used strategy that reflects the subjects' vocabulary size.
3. Support strategies are "basic support mechanisms intended to aid the reader in comprehending the text" (p. 4). These include (1) taking notes while reading, (2) translating difficult parts into the reader L1, (3) reading aloud (4) highlighting important information in the text, (5) using the dictionary, (6) paraphrasing difficult parts, (7) finding relations between the different parts of the text, and (8) asking oneself questions that the text should have answered. I added three support strategies for my conviction of their importance in EFL contexts. These

include (9) summarizing the reading text, (10) discussing and checking comprehension with others, and (11) making a list of the new words.

More information about the original strategies and the ones added to the survey will be provided in the method section in Chapter III.

Relationship between Reading Strategies and Reading Ability

Whether higher level of vocabulary knowledge and reading ability will affect EFL learners' awareness and utilization of reading strategies or vice versa has not been reported fully in the literature. Honsefeld (1977) reported a study in which learners with high and low reading ability were asked to self-report as they read unassigned texts. The study found that those with high reading ability tended to keep the meaning of the passage in mind, read in broad phrases, skip words and have a good self-concept as readers. Low reading ability students, however, lost the meaning of sentences as they decode them, read word-by-word, or in short phrases, rarely skipped words, turned to the glossary for the meaning of new words, and had a poor self-concept as readers. Evidence of the impact of target language proficiency on the type of reading strategies used by EFL learner was also found in the Saudi context. Alseweed (2000), for example, found the level of language proficiency to influence the type of word-solving strategies used by senior EFL university students in Saudi Arabia.

Emphasizing the tendency of young and poor L1 readers to use different monitoring and compensatory strategies while reading, Garner (1987) cited Ryan et al. (1982) who maintained that "comprehension problems among poor readers who can

decode successfully are due to their less strategic involvement in the process of reading." (p. 29). Garner's conclusion was that "young children and poor readers are not nearly as adept as older children/adults and good readers, respectively, in engaging in planful activities either to make cognitive progress or to monitor it" (p. 59).

Kozminsky & Kozminsky (2001) have also examined the relationship between background knowledge, reading strategies, and reading comprehension. Examined reading strategies were limited to summarizing, self-questioning, clarifying and predicting. Among ninth grade academic subjects, the researchers found a correlation of $r = .46$ between general knowledge and reading comprehension and a correlation of $r = .77$ between reading strategies and reading comprehension. However, these findings were not consistent throughout the different groups of students (vocational, semi-academic, academic, and disabled). Thus, the researchers suggested that the examined factors seem to influence the reading ability of each group of students differently. A recent study that used native and ESL university students' self-rated proficiency as the factor through which reading proficiency is assessed is Sheorey and Mokhtari's (2001). The study found significant differences between high and low ability students in their use of cognitive and metacognitive strategies. There were no significant differences observed in the use of support strategies.

Anderson (1991) also examined the reading strategies of Spanish speaking students enrolled in intensive ESL classes as they took a reading comprehension test and two tests on two academic passages. A simple regression showed that there existed a significant relationship between the number of strategies reported to be used in the think

aloud protocol and the reading comprehension scores, i.e., reporting the use of more reading strategies was associated with higher reading comprehension scores. No specific strategies were found to relate to successful reading comprehension. The study also showed that no specific strategy or groups of strategies contributed more to successful comprehension of the texts (p. 468). Thus, the case was made that it is not the number or the type of the strategies the reader knows that improves reading comprehension but how effectively they use these strategies.

Although the above reviewed studies show that better readers tend to be more strategic readers, there seems to be no simple or linear relationship between the use of reading strategies and reading comprehension. After enumerating several early case studies showing differences in strategy use between high and low ability readers, Carrell, Gajdusek, & Wise (1998) maintained that these differences are not fixed or consistent. Barntmeier (2000) has also found no relationship between the types of strategies second language learners use and their level of reading comprehension. This view entails that using or reporting the use of good reading strategies does not always result in successful reading comprehension.

This may suggest that an awareness of reading strategies is not an objective by itself. In this respect, Cohen (1990) states, "It depends on who is using them [reading strategies], with what text, at what point in the text, under what circumstances, and with what purpose in mind" (p. 84). Anderson (1991) also suggested that the use of certain reading strategies could be a matter of vocabulary knowledge and general knowledge. Thus, even if beginning learners are aware of effective reading strategies but do not have

enough vocabulary or lack the appropriate schema for a certain text, they may not succeed in comprehending the text. Based on an empirical study, Ridgway (1997) also suggests that a lower linguistic threshold may exist for background knowledge to influence comprehension. This shows the need for investigating reading strategies in light of vocabulary size and reading comprehension, one of the main objectives of the current study. Another aspect investigated here is the frequency with which reading strategies are reported to be used. Successful reading comprehension may not only relate to the number of reading strategies the student uses but also to the frequency with which they use these strategies.

Although the perceived reading strategies of the different reading proficiency groups are considered in the current study, no significant differences in strategy use among these groups or significant high correlations between strategy use and reading comprehension are expected. However, given the homogeneity of the participants in the current study, which reduces the chance of variation caused by unknown variables, tendencies to use certain strategies more or less frequently by the different reading proficiency groups may be indicative of a relationship between reading strategies and reading proficiency. Although the studies reviewed have not identified specific strategies that are consistently associated with efficient reading comprehension, a close examination of reading research and reading models reveals the importance of some reading strategies. Some of these strategies are reviewed in the following section.

Some Important Reading Strategies

In this section, I review the literature on some of the reading strategies investigated in the current study. These strategies were chosen for their importance to the reading process. They are mainly based on either one of the reading models reviewed earlier or on one of the recent language learning approaches. These strategies include having a purpose in reading, using background knowledge, context clues, critical reading, and summarization.

Setting a Reading Purpose

The idea of having a purpose in reading can certainly be traced to the notion of task-based instruction. We learn language by using the language to achieve something. One of the main problems of EFL and ESL learners while in intensive or foreign language programs is that they usually approach the reading text with the purpose of learning more words and language forms. According to Long and Crookes (1992), the objective of the task needs to be informational and not linguistic. Nelson (1984) maintained that second language texts are not read with a clear purpose, even in English for Specific purposes (ESP) courses, which would not make them completely communicative (p. 188). The basic premise is that we use language to communicate information. Having a purpose in reading a certain passage usually means being interested in its informational content. Thus, I believe that having an informational gap before reading will definitely promote purposeful reading.

Helping ESL/EFL learners to have a practical learning purpose usually results in more learner involvement in the learning or reading task. It is usually recommended that the purpose of reading be established and discussed before reading and should not be promoted by comprehension questions after reading the passage (Knutson, 1998). Reading with a purpose may also develop other cognitive reading strategies and skills. Blanton & Wood (1991) suggested that having a purpose in reading improves comprehension in three ways. First, it improves comprehension and recall of reading materials. Second, it activates the appropriate background knowledge. Third, it guides the readers' selection process in reading, i.e., a student with a purpose in reading would know what information is important to this specific purpose and what is not and read the text accordingly.

Several studies have explored the impact of having a purpose in reading on reading comprehension. Swanborn and Glopper (2002) examined how the purpose of reading a text impacts incidental vocabulary learning of six graders. Recognizing the neglected role of purpose in incidental word learning from context, the researchers conducted an experiment where learners read for pleasure, to gain information about a certain topic, or for text comprehension. Interestingly, the study found that any kind of purpose promotes incidental word learning. Reading to learn about the text topic was found to yield 10% incidental word learning. Students reading for pleasure learned 6 % while students reading for comprehension learned 8 % incidentally. Although the students' reading ability was a major factor in the number of words learned, the purpose of reading seems to have a large impact on incidental vocabulary learning from context. Barnes & Ginther (1989) also examined the influence of having a purpose and using

schemata on reading comprehension. The researchers found a strong influence of comprehension ability and purpose on reading comprehension. Schemata, however, do not seem to have a similar impact on reading comprehension.

The idea that the teacher should encourage learners to establish a purpose during pre-reading activities is usually discussed in the literature (Aebersold & Field, 1997). Reading teachers are also advised to choose reading materials that match learners' interest. Although interest in reading a certain text or topic may be different from having a purpose in reading that text, I suspect that if reading materials are compatible with readers' personal interest, it would be much easier for reading teachers to establish a reading purpose for their students.

Having a purpose in reading is believed to be the way to independent reading. However, some language learners, especially EFL learners, may not have an obvious purpose in reading L2 texts other than the general vague purpose of learning more language. One of the reading strategy statement explored in the current study examines whether EFL learners in Saudi Arabia perceive having a purpose when they read EFL materials or not. The findings, therefore, will inform EFL reading teachers about how the learners perceived their implementation of this strategy. If the current study shows a lack of purpose, EFL teachers may need to reassess their pre-reading instruction and activities in terms of establishing a specific purpose for reading EFL materials.

Background Knowledge

The importance of activating one's background knowledge while reading has been discussed in the literature under schema theory (Anderson and Pearson, 1984). Carrell & Eisterhold (1983) define background knowledge as "previously acquired knowledge" (p. 556). As has been discussed before, this background knowledge could be linguistic (language), content (topic or culture), or formal knowledge (textual or structural) (Cohen, 1990; Carrell, 1983b, 1987). In the second and foreign language context, numerous studies (e.g., Johnson, 1981 & 1982; Carrell & Eisterhold, 1983; Haus and Levine, 1985; Lee, 1985; and Floyed & Carrell, 1987) have found a significant relationship between background knowledge about a certain text, whether about topic or culture, and the readers' comprehension of that text. In fact, Carrell (1983a) maintains that "If a reader is not actively using his or her background knowledge, a significant part of the reading process is not taking place, and the construction of meaning suffers" (p. 200).

After examining 38 primary reading research studies of native speakers of English, Pressley and Afflerbach (1995) maintained that using background knowledge about the text was the most "apparent" in the readers' reports and evaluation of the texts they read (p. 30). As vocabulary knowledge represents an important element in reading comprehension, i.e., word knowledge, background knowledge seems to represent the other type of knowledge needed for successful comprehension, i.e., conceptual knowledge. So, readers need their vocabulary and linguistic knowledge as well as their knowledge of the world to make sense of the text. In fact, it is sometimes suggested that

readers will resort to their background knowledge more frequently to compensate for any failure in decoding words and sentences (Stanovich, 1980).

The basic idea of background knowledge is that readers relate the meaning of a certain text to what they already know about the topic described or discussed in the text. By activating the appropriate background knowledge, the reader will have the context through which she can better grasp the meaning and the ideas discussed in the text. By so doing, readers are receiving input from the text and matching it to what they already know about the topic or the culture. This fact is easily observable even in one's first language. Some specialized texts are difficult to understand in spite of the fact that the words and sentences are all known to the reader. Looking at L1 readers, Kozminsky & Kozminsky (2001) examined the relationship among background knowledge, reading strategies, and reading comprehension. Among ninth grade academic subjects, the researchers found a moderate correlation ($r = .46$) between general knowledge and reading comprehension.

However, some reading researchers suggest that native and nonnative speakers activate and utilize the appropriate background knowledge differently. Carrell (1983a) looked at three aspects of background knowledge, context, text transparency, and text familiarity. She found non-native speakers to differ from native speakers in utilizing their background knowledge. The study found that even intermediate and advanced learners restrict themselves to the text, i.e., focusing only on the decoding of words. Even when sufficient background information is given, ESL learners did not utilize such

information to process the text by making meaning predictions and using other top-down processes (Carrell, 1983a).

The problem with the findings of this interventionist study is that they contradict both previous (e.g., Yousef, 1968) and subsequent studies (e.g., Floyed & Carrell, 1987) linking building and activating appropriate background knowledge to successful reading comprehension. I suspect that if a more relevant measure of ESL reading ability were used, more consistent results might emerge. I also think that language proficiency might have played a role in the students' inefficient use of the provided background knowledge. Ridgway (1997) suggested the possible existence of a lower linguistic threshold for this background to operate effectively. This may require the examination of this strategy in the light of some relevant linguistic factors like vocabulary knowledge and reading comprehension.

Another type of content schemata that sometime poses comprehension problems is cultural background knowledge, i.e., knowledge about the target culture of the reading passage. According to Reid (1993), the mismatch in cultural schemata between that of the writer and the reader could make the text for readers who lack this type of schemata difficult. Pritchard (1990) found cultural background knowledge not only to impact the product of reading, i.e., reading comprehension, but also the process of reading, i.e., the metacognitive strategies readers use. Yousef (1968) found that when the question asked about American literature is a specific one that is based on everyday life, his Middle Eastern students' answers were based on their own cultural and behavioral code. Instructing these students on aspects of the American culture was found to reduce such

resistance to the target culture. Providing EFL readers with the necessary cultural background will, no doubt, play a facilitative role in comprehension and make the reading task easier (Carrell, 1983b). I also believe that the recognized superiority of authentic texts in language learning emphasizes the need for providing ESL/EFL learners with pre-reading instruction and activities that are targeted towards building the appropriate cultural background knowledge.

The important role of general background knowledge in reading L1 materials emphasize the fact that providing and activating the appropriate linguistic, content, and formal schemata are even more important in ESL/EFL classes. Although the effect of background knowledge is not measured here, I hope that the current study will illuminate the relationship between the implementation of this strategy and the EFL learners' reading ability and vocabulary size.

Summarizing

Reading research seems to support the idea that summarizing what is read is an effective tool in improving text comprehension (Garner, 1987; Casazza, 1993). Cohen (1990) suggests making ongoing summaries of the reading to aid comprehension of the different pieces of information in the text (p. 89). Anderson (1999) also considers summarization a useful technique to teach reading comprehension. The value of this strategy lies in the fact that students need to understand differences in information status in order to demonstrate text comprehension.

Summarization is both a cognitive and metacognitive activity. According to Carson (1993), summarization research is usually based on research on cognitive processes and schema theory. To Garner (1987), summarization is both a cognitive strategy of synthesizing information and a meatcognitive strategy of monitoring comprehension or "cognitive progress" (p. 56). Garner suggested that text summarization requires distinguishing main ideas from subordinate ones, applying rules to produce the gist of the original text, and producing the final oral or written summary. To some reading researchers, the process of summarization involves both reproduction of the original text and a construction of the new text or summary (Carson, 1993, p 89). Another important aspect of summary writing as a comprehension strategy is that it could develop other important reading shills like critical reading. According to Carson (1993), reading to write helps students transfer only important information for the purpose of the summary and synthesize previous knowledge (p. 100). Readers will be evaluating, synthesizing information as well as skillfully producing a coherent synopsis. Although summarization is a demanding skill, teachers need to develop this strategy in their students to help them get the complete meaning of the reading text.

Summarization exercises are also relevant to the depth of processing hypothesis (Craik & Lockhart, 1972). Oded & Walters (2001) examined the influence of two tasks, summary writing and listing examples from the text, on EFL reading comprehension. Writing summaries was found to result in better reading comprehension. These results support the depth of processing hypothesis in that summary writing is more cognitively demanding than the listing exercise, and hence results in more comprehension. The greater processing required in the writing of a summary of main ideas will help produce a

better comprehension of the text. Thus, Oded & Walters (2001) suggest that the summary task should be viewed as an instrument of learning rather than a testing procedure. The basic assumption is that when less successful readers develop the reading strategy of summarization, they will grasp the meaning of the text more efficiently. In addition to improving the comprehension of main and subordinate ideas in a certain text, depth of processing may well improve recall of information for future study.

In ESL, language proficiency is usually considered to have a direct impact on summary writing (John & Mayes, 1990; as cited in Carson, 1993). Looking only at one subject, Sargi (1993) found high language proficiency not to guarantee successful summary writing. Sargi also found similarities in the way college students write summaries in their first and second language. Thus, development gaps in this process were observed and the case for direct instruction was made. Summarization studies cited in Carson (1993), indicate that several factors impact the writing of good summaries. These include the two relevant factors of reading proficiency and sensitivity to important parts of the text, as well as the type of the summaries, i.e., whether it is a writer-summary or a reader-summary. The writer-summary is usually written for the writer to read in the future while a reader-summary is written for other people to read.

The above review indicates that summarization is an effective reading strategy as it focuses on both the general meaning of the text and the information status in that text. The current study may further illuminate the relationship between using summarization as a support strategy and the EFL learners' reading ability, on one hand, and between summarization and vocabulary size on the other. Given the cognitive demand of this

strategy, it is unlikely that EFL learners will choose to use it unless it is part of their language learning program. Therefore, if the current study finds summarization to be perceived as a low frequency strategy, and that vocabulary size and reading ability do not influence the perceived low use of the strategy, the case for more instruction and training on this strategy could be made.

Using Context Clues

Learning vocabulary through context has proven to be an important method of learning words for both native and nonnative readers. The superiority of context learning has come from the argument that L1 learners' vocabulary growth is attributed in most cases, if not all, to the fact that learners acquire new vocabulary from context. Rott (1999) found two encounters with unfamiliar words during reading to significantly affect learners' vocabulary growth. Moreover, two or four exposure frequencies resulted in fairly similar word gain, but six exposures produced significantly more vocabulary knowledge. Although the process of learning words from context is regarded as a difficult one for L2 learners, the gains that one may get out of this process are worth the while (Nagy, 1997). These findings as well as findings of some extensive reading studies lead me to believe that if two encounters with a word in context may make a difference in the learner's vocabulary knowledge, learning vocabulary from context should be an integral part of any language program.

Another advantage of learning vocabulary from context is that it helps readers understand the frequent variation in meanings and word senses associated with most high frequency words, and assess the importance of certain words to the general meaning of

the text. According to Nagy (1997), contextual variation can be categorized as sense selection or reference specification. Sense selection refers to selecting one sense of a word's different senses according to the context in which it occurs. In this case, the context helps the reader decide on one of the somewhat different senses of the word. Reference specification, however, refers to specifying the referent of the word in a particular context. For example, if a pronoun is used, the context will help the reader figure out the referent of such pronoun. Again, using context clues may help readers assess the importance of certain words in grasping the meaning of the text. Thus, developing the use of this reading strategy is of crucial importance to L2 readers. According to Oxford and Scarcella (1994), learners should know when to ignore words they do not understand, and when to guess the meaning of words from context.

In addition to their importance in reading for meaning, the strategies of guessing meaning from context, examining word roots and affixes, and using context clues to better understand the reading message are among the most important vocabulary acquisition strategies (Nation, 1990). All these strategies are among the reading strategies examined in this study. The strategy of using word roots and affixes was added to the survey of the current study to look at almost all context-based strategies as they relate to both vocabulary and reading comprehension. Nation (1990) believes that although instructing the students to guess the meaning of words from context, to use word parts, and to use the dictionary may take some time, mastering these strategies will "more than repay the time invested in them" (p. 130).

As has been established in the section on extensive reading, the effectiveness of using guessing from context strategies is contingent upon having decent vocabulary knowledge beyond the 3000 words level (Laufer, 1992; Nation, 1990). Examining knowledge of vocabulary is closely relevant here as the more words are known in a text, the richer is the context, and the greater the chance to make correct guesses about word meanings. Five of the comprehension questions used in the reading comprehension test of the current study were mainly focused on examining the ability to guess words from context. Other questions examine skimming, scanning, and inferencing abilities. The study will, therefore, show whether the learners' reading ability to guess the meaning of certain words correctly from context can be correlated with their perceived use of relevant strategies and their vocabulary knowledge.

Critical Reading

One of the most important objectives of reading is that the reader arrives at the complete meaning of the text. Thus, reading researchers distinguish between three different levels of reading comprehension: literal, inferential, and critical. The highest level of reading comprehension is reading critically or what Alderson (2000) called reading "beyond the lines" (p.8). Richards *et al.* (1992) defined critical reading in the *Dictionary of Language Teaching & Applied Linguistics* as "reading in which the reader reacts critically to what he or she is reading, through relating the content of the reading material to personal standards, values, attitudes or beliefs" (p 92). After reviewing the literature on critical reading strategies, Garcia (2002) found these strategies not only to

include self-questioning and monitoring, and inferring and drawing conclusions, but also to include using background knowledge, using cognates, translating, and code-switching.

However, since the other indirectly related strategies to critical reading may be recognized for their own importance, it should be noted that an essential aspect of critical reading is that the reader evaluates and questions some of the writer's propositions. This evaluation indicates an understanding of what these propositions and ideas entail (Mohamad, 1999). Thus, critical reading is deemed more important in L2 contexts. Using this reading strategy is believed to ease the cumbersome transition from reading in the language classroom to reading of authentic everyday materials (Levine *et al.*, 2000). Autrbach & Paxton (1997) also found encouraging L2 learners to critically reflect on what they read to make reading an enjoyable task and to increase the students' metacognitive awareness.

Although the above reviewed studies clearly show the importance of using critical reading strategies, especially by L2 readers, some researchers suggested that some ESL students are not competent critical readers. This is usually attributed to the idea that those learners come from cultures that value written texts (Alford, 2001). These readers will, therefore, be reluctant to question or judge the propositions of a written text. Although this is likely in Saudi Arabia as young learners usually grow up reciting and memorizing verses of the Holy Quran, the language proficiency of the subjects in the current study may play another major role in hindering EFL learners from using critical reading strategies.

Looking at these factors together, I have a hunch that this strategy will be among the least frequently used reading strategies by EFL Saudi students. Since some relevant aspects of the subjects' linguistic ability are measured by the vocabulary test and the reading comprehension test, the current study may either confirm the impact of language proficiency on the use of such strategy or argue for more instruction on the use of such reading strategy. Some researchers also think that the reading curriculum should be strategically based on critical literacy (Alford, 2001) to help the students go beyond the confines of the text and read not only what is between the lines but also what is beyond the lines.

The critical reading strategy of questioning and evaluating pieces of information that readers encounter in a certain text may require both high language proficiency and training in critical reading skills. Since this strategy requires the involvement of the reader's different sources of knowledge, the classroom environment should be conducive to the development of such a strategy. In this line of research, Levine *et al.* (2000) found computerized classes to promote EFL critical literacy skills and strategies more than the traditional reading classes. Significant differences were found in the students' scores in skimming for main ideas, and recognizing the purpose of the author and his or her conclusion. Crismore (2000) maintained that ESL and EFL university students are incompetent critical readers when it comes to reading academic and electronic texts. Thus, Crismore suggests asking the students to read assigned materials twice, once for understanding, and once for evaluating and writing response notes. If the current study finds critical reading strategies to be perceived as low frequency strategies, the reading

EFL curriculum in Saudi Arabia may need a prompt reassessment to include this crucial aspect of reading.

The previous review shows the importance of reading strategies within the current understanding of second language teaching and learning. This importance indicates the need to explore EFL learners' deployment of reading strategies. Looking at these strategies in light of the EFL learners' vocabulary knowledge and reading comprehension ability will inform EFL reading researchers and teachers about the intricate relationship between these elements of foreign language learning.

Since the participants in the current investigation come from both male and female institutions, I will review in the following section gender differences among second language learners as they relate to reading strategies and reading comprehension.

The Impact of Gender on L2 Reading and Reading Strategies

First language research usually supports the tendency that males and females use language differently to communicate (Bonvillain, 2000; Tannen, 1994; and Coates, 1993). In the area of second language learning, research seems also to support the existence of gender differences in learning second and foreign languages. Although gender differences *per se* have not been the main focus of most SLA investigations, female learners do seem to acquire second languages faster (Larsen-Freeman and Long, 1991). Female learners also seem to have an advantage over males in terms of their verbal ability, hence promoting the belief that they make better language learners. Farhady (1982) examined the listening comprehension of 800 subjects and found significant gender differences favoring female learners over males. Eisentine (1982) also

found females to outperform males in distinguishing dialects. Again, Boyle (1987) found female EFL Chinese students in Hong Kong to outperform males in ten general English tests. Although perfect consistency in research may not be found, Ellis (1994) maintained that the greater success of females in foreign and second language learning could be attributed to their more positive attitude towards language learning.

Gender differences among language learners in vocabulary knowledge, learning and reading strategies and reading comprehension ability are of great relevance to the current study. The survey nature of some learning strategy research seems to allow for the comparisons between males and females in their reported use of these strategies. Studies on language learning strategies have explored the variable of gender as it relates to ESL and EFL learners' general learning strategies profiles (Oxford and Nyikos, 1989; Kaylani, 1996; Ehrman and Oxford, 1989; Politzer, 1983; Green & Oxford,1995; and Sheorey, 1999). These investigations were based on the realization that learners' strategies are crucial to the understanding and enhancement of learning.

Gender in Language Learning Strategies Research

Research on language learning strategies seems to explore the variable of gender more extensively than L2 reading research. This research seems to support the tendency that females use more learning strategies with more frequency regardless of their cultural background. Most of the studies that found striking gender differences in language learning strategies usage were conducted with learners from mixed language backgrounds and cultures. Using the SILL (Strategy Inventory for Language Learning), Green and Oxford (1995) surveyed the learning strategies of 374 EFL students at the University of Puerto Rico who were at different levels of language proficiency. They found that

among the 15 strategies that showed statistically significant differences between males and females, 14 strategies were used more frequently by females.

In another large-scale study, Oxford and Nyikos (1989) used the SILL to explore, among other things, gender differences in the strategy use of 1200 male and female FL students. About 95% of the subjects were native speakers of English taking foreign language courses in a Midwestern university. Females were found to use the strategies loading on three main factors of the survey more frequently. These factors include social interaction strategies, rule practice strategies, and general study strategies. Male students, on the other hand, did not show any statistically significant differences in their use of the strategies loading on the remaining two factors. Ehrman and Oxford (1989) also found females to report significantly greater use of learning strategies in four strategy categories: general study strategies, functional strategies (authentic language use), searching and communicating meaning strategies, and self-management strategies. Politzer (1983) also found that females used social learning strategies and interaction with others outside of class significantly more often than males.

Another important issue is that female and male learners may differ in their implementation of certain strategies. To pinpoint the reasons behind females' more frequent use of learning strategies, Oxford *et al.* (1988), reviewed available literature on learning strategies. One of the reasons they provide is females' greater social orientation, which makes them more cooperative and more sensitive to matters of interpersonal relationships. The review also proposes that females' use of certain types of strategies show their concern with social approval and willingness to fit within conventional norms. The researchers recommend that gender differences need to be explored by language

educators to fully understand the learning process and to provide relevant teaching materials and instruction. Since there seems to be an apparent tendency within language learning strategy research for female learners to be somewhat more strategic, I will turn now to discussing gender differences within reading strategy research.

Gender in L2 Reading Strategies Research

Unlike the case with language learning strategy research, only very few studies have explored the relationship between gender and reading strategies. Reviewing L2 reading strategies research, Brantmeier (2002) maintained that only three studies have looked at the learner variable of gender as it relates to L2 readers comprehension strategies. In this section I present some of the observed gender difference in L2 reading strategies and L2 reading ability research.

Noticing the lack of this kind of study in reading and strategies research, Young and Oxford (1997) looked at gender difference in NL and FL learners' use of local and global reading strategies, and in their reading recall scores. Reading strategies were elicited after reading every passage through a think aloud in which the participants reported the reading strategies they used while reading. Although there were no significant differences between males and females in their reported use of local and global strategies use, certain strategies were reported to be used more frequently by either males or females. Females were found to report using vocabulary problem solving strategies, and to acknowledge lack of background knowledge more frequently. Male learners, on the other hand, reported using reading monitoring strategies, paraphrase, and state understanding of words more frequently. Considering some previous research on listening strategies (e.g., Bacon and Finemann, 1990), the researchers seem to endorse the

tendency for female learners more frequent use of global strategies. No significant differences were found in the reading recall scores.

Emphasizing the important role of using and modifying strategies according to the reading task, Schueller (1999) investigated the impact of gender and proficiency on pre-reading strategy instruction on both top-down and bottom-up strategies. Since previous research seems to suggest that females tend to use more global or top-down strategies while males tend to use more local or bottom-up strategies, Schueller investigated whether this tendency would hold when males and females were instructed on these strategies. Two treatment groups received training in either top-down or bottom-up reading strategies. Interestingly, the students in the top-down treatment group performed better than the bottom-up and the control groups on the recall and multiple choice tests. Within the top-down group, subjects with higher language proficiency benefited from strategy instruction more than lower proficiency subjects. The researcher also found female learners to benefit more from the treatment overall.

Brantmeier (2000) also looked at gender differences of learners of Spanish as a second language in their reading comprehension of gender-oriented passages, i.e., female-oriented passages would deal with female issues and activities and vice versa. The study found an interaction between the gender of the learners and the content of gender-oriented passages. Males outperformed females on the recall task and multiple-choice questions for the male-oriented passage, and females did better on both tasks for the female-oriented passage. Although the study shows no significant differences in overall reading strategy use, males reported using more global strategies while reading

the male-oriented passages. The study found no apparent relationship between the type of strategies the students used and the level of their reading comprehension.

Another study that also examined gender differences in the use of reading strategies is Sheorey and Mokhtari (2001). The researchers looked at the reading strategies of native English speakers and ESL students' reading strategies. This study is closely relevant to the current investigation, which uses an adapted version of Sheorey and Mokhtari's NNS survey of reading strategies. However, looking at the means of strategy use, Sheorey and Mokhtari (2001) found American female university students to use reading strategies more frequently than males. However, the researchers stated that because of the unequal numbers of females and males in the study, gender differences were not statistically significant.

A study I conducted (Al-Nujaidi, 2000) looked at some of the underlying factors that characterize the vocabulary learning strategies among Saudi university EFL learners. Factor analysis showed the vocabulary strategies of the 261 EFL learners to load on six factors. These factors include strategies involving relations and associations, definitions and wordlists, manipulation of linguistic systems, word remembering and rehearsing, word contextualization, and meaning discovery strategies. Male and female learners show significant differences in using contextualization and definition and wordlist strategies. Males used definition and wordlist strategies more frequently while females use contextualization strategies more frequently than males. Given the strong relationship between vocabulary and reading, gender difference in the perceived use of vocabulary learning strategies may suggest the existence of gender differences in the perceived use of reading strategies by Saudi EFL learners.

As nonworking females in Saudi Arabia usually manage things at home, the Saudi culture may provide females with more opportunities to read and develop reading skills and strategies. Bacon and Finnemann (1992) found female learners of Spanish as a foreign language to use a private/non-oral mode more than male learners. This includes comparing Spanish with English, guessing what may be going on, writing words and phrases over and over, translating what is read or heard to English, writing the English words above the Spanish ones, keeping the dictionary close by, and rehearsing in ones' head before speaking. This finding led the researchers to suggest that females tend to be more cognitively active to comprehend input. This learning style may lead to the use of more strategies compatible with better reading, which may explain females' tendency to use more reading strategies and their positive response to reading strategy instruction. In a similar cultural setting to the current study, Hassan (1994) found female students at a Kuwaiti university to benefit more than male students from instruction on reciprocal reading strategies, especially those relevant to reading awareness.

In a study similar to the current study in terms of the cultural setting and the range of subjects' ages, Kaylani (1996) also found female Jordanian high school seniors to use memory, cognitive compensation, and affective strategies more frequently than males. The variable of gender was found to account for 15% of the variation in the students' learning strategies. Female students also used strategies taught to them by their teachers more than males. One explanation offered by the researcher was that female students seek social approval more than males and therefore follow the teacher's advice on how to study as a way of gaining this approval. Responsiveness and obedience to teachers and parents would usually result in social approval and a good reputation, which in turn

would make such females potential candidates for marriage partners. This explanation may hold in all the Arab cultures in general and the Saudi culture in particular. In some cases, a female's academic success and superiority may be considered as an attractive feature in a potential wife.

Gender and Reading Strategies Research in Saudi Arabia

Exploring gender differences may not be easy in educational systems where learners are segregated by gender. Saudi Researchers usually conduct their research with same-sex students. Thus, studies that compare the reading strategies of male and female EFL learners in Saudi Arabia, for example, are almost nonexistent. Several studies, (e.g., Matar, 1990; Al-Arfaj, 1996; Al-Melhi, 1999; and Alseweed, 2000), have explored the reading strategies of EFL students in this part of the world. Each of these studies dealt with either male or female university students in Saudi Arabia. Another relevant study is Al-Akloby (2001) which investigates the process of teaching and learning vocabulary at secondary schools in Saudi Arabian public schools. Al-Akloby's subjects were 52 male second-year secondary students. This shows clearly that exploring gender differences was beyond the scope of most studies conducted in Saudi Arabia. To my best knowledge, except for the Al-Nujaidi's (2000) study, no reading or vocabulary related study has examined gender differences among EFL learners in Saudi Arabia.

Alseweed (2000) looked at the word solving strategies of male university EFL learners in Saudi Arabia both before and after strategy instruction. The subjects of this qualitative study were 19 male senior university students. The study seems to indicate that training on word solving strategies may increase the use of these strategies. Inappropriate use of certain strategies like misidentifying new words with known words,

insufficient use of background knowledge, inappropriate skipping of words was found to distinguish high and low proficiency students. Interestingly, Alseweed found resorting to the dictionary to be the most popular word solving strategy among low proficiency students while guessing from context to be the high proficiency students' first choice. However, the learners seem to prefer dictionary use to any other context based strategy when they were given the choice. Although these results are very interesting, gender differences in the use of certain reading strategies needs to be accounted for. Al-Nujaidi (2000) has shown a significant difference between males and females in the use of contexualzation strategies. This tendency, if substantiated, could inform both reading teachers and curriculum developers about the amount of reading strategy instruction they need to provide.

Matar (1990) investigated the relationship between reading strategies and inferential reading comprehension among Saudi female university students. The study found L2 proficiency to have an impact on reading ability, and the use of task-related reading strategies to aid comprehension. Although the study provided useful insights about the cognitive strategies used by the subjects while performing an inferential reading task, the study could not provide any cross-gender differences in reading strategy use.

Al-Melhi (1999) mainly looked at reported and actual reading strategies and the metacognitive awareness of male EFL senior university students. The analyses of the subjects' actual reading suggested that they applied a mixture of global and local strategies in their reading. The study also found L2 proficiency to have an impact on the students 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. The results of the study were also limited to Saudi EFL male students. Since their subjects were males, Al-Melhi (1999), Al-Arfaj (1996), and Al-Seweed (2000) investigations of reading strategies and word solving strategies did not explore gender differences in strategy use.

Although it was beyond the scope of the reviewed studies to provide information on gender differences as they relate to EFL reading in Saudi Arabia, studies that have considered gender seem to show striking differences. In fact, some striking gender differences were found in my examination (Al-Nuajidi, 2000) of vocabulary learning strategies. Female and male learners showed significant differences in their perceived use of contextualization and definition/wordlist strategies. Males perceived using definition strategies more frequently than females while females perceived using contextualization strategies more than males. The researcher attributed these differences to the fact that women in the Saudi culture spend most of their spare time at home which may increase their use of strategies related to reading, watching, or listening to expand their English vocabulary. And as this brief review has shown, language learning and reading strategies research seems to support the tendency that males and females use learning and reading strategies differently.

Although the reading strategies of Saudi EFL learners have been the subject of more than one investigation recently, none of these studies have looked at the patterns of reading strategy use of both male and female students, and possible gender differences in the use of certain strategies. The current study attempts to fill this gap in L2 reading strategies research related to Saudi Arabian subjects. Since the English curriculum and textbooks at the intermediate and secondary schools are almost identical for both boys

and girls, the possible existence of gender differences in L2 reading ability and reading strategies may well inform L2 reading and EFL teaching and learning in Saudi Arabia.

As has been discussed throughout this review, the current study will fill an obvious informational niche in EFL reading in Saudi Arabia. The study will hopefully provide useful information on Saudi freshmen EFL learners' reading strategies profiles, vocabulary size, and reading comprehension ability. The study will, therefore, provide descriptive information about each of these important variables. To my best knowledge, no previous study has attempted to look at these factors together in a single investigation. Thus, the study is unique in looking at the correlation and the interaction between these variables. The participants also come from a stage in the educational system that reflects the outcome of pre-university EFL education, a unique group that might not have been studied thoroughly before.

Another major contribution of the current investigation is examining gender differences as they relate to EFL reading. As this review has shown, there seems to be a scarcity of this kind of research within the whole field of second language reading research. In fact, I am almost certain, that this type of investigation does not exist in the Saudi context. Thus, the study will hopefully contribute useful information on the impact of gender on EFL reading in general, and EFL reading in Saudi Arabia, in particular.

Chapter III

Methodology

Purpose

The purpose of the current investigation is manifold. First, the study describes the reading strategies of EFL learners in Saudi Arabia and assesses the participants' vocabulary size and reading comprehension ability. Since many L2 vocabulary and reading studies suggest a significant impact of vocabulary knowledge (Coady et al., 1993; Laufer, 1997, Qian, 2002) and reading strategies (Honsefeld, 1977; Anderson, 1991) on L2 reading comprehension, the current study examines this relationship in an EFL context in Saudi Arabia. The study also examines the impact of some learner variables including gender differences on this relationship. More specifically, the study addresses the following five research questions.

1. What are the perceived reading strategies of Saudi EFL learners enrolled in English and technical university programs when reading English academic materials?
2. What is the Saudi EFL university learners' vocabulary size?
3. What is the level of reading comprehension among Saudi EFL learners?
4. What is the relationship, if any, between reading strategies, vocabulary size, and reading comprehension of Saudi EFL learners?
5. What is the impact of learner variables like gender, the amount of outside reading, beliefs about the importance of vocabulary in

language learning, perceived proficiency level, and perceived vocabulary knowledge on reading strategies, vocabulary size, and reading comprehension?

Participants

The participants in this study were 226 EFL Saudi first-year university students. They came from male (N=109; 48.2%) and female (N=117; 51.8%) higher education institutions in the central region of Saudi Arabia. The participants in the current study include both male and females learners from seven different institutions. The gender and mean age of the participants are reported in Table 1. Ten participants did not indicate their age.

Table 1: Participants' Age

Group	N	*Min.*	*Max.*	*M*	*SD*	Range
Females	112	17	35	18.82	1.95	18
Males	104	17	42	19.84	2.93	25
Total	216	17	42	19.31	2.52	25

The participants were enrolled in seven different institutions as shown in Table 2. One of these institutions, King Saud University, has both male and female sections at the College of Languages and Translation. These are listed separately in Table 2. The participants were either enrolled in teacher-education programs, languages and translation programs, or English related programs. Apart from the 31 (13.7%) College of Technology students, the academic major of the rest of the participants is English. Unless they choose other jobs, they may well teach English in intermediate and secondary schools when they graduate from their respective academic programs. The participants were taught English as a foreign language for six years at intermediate and

secondary schools before enrolling in university programs. Although they sometimes belong to the same university, male and female students are segregated and taught by same-sex professors.

Table 2: Participants' Higher Education Institutions

School		Number of Participants
College of Education – Shagra	(Females)	32 (14.2%)
College of Arts – Riyadh	(Females)	41 (18.1%)
College of Education- Buridah	(Females)	21 (9.3%)
King Saud University- Translation	(Females)	23 (10.2%)
Imam University- Qasim	(Males)	40 (17.7%)
Imam University- Riyadh	(Males)	19 (8.4%)
College of Technology	(Males)	31 (13.7%)
King Saud University- Translation	(Males)	19 (8.4%)
Total		226 (100 %)

Instrumentation

The instrumentation of the current investigation comprised three basic measures. First, a reading strategies survey was used to examine the students' awareness of common reading strategies and their perceived frequency of use. The second measure was a reading comprehension test administered to assess the learners' reading comprehension ability. The third measure was a vocabulary size test which assessed the students' knowledge of English vocabulary at three different word frequency levels.

The Reading Strategies Survey

The first part of the instrument was a survey of reading strategies. A reading strategy is defined here as any action a reader takes to overcome a problem in comprehension, or to monitor and aid comprehension. Pressley & Afflerbach (1995) introduce reading strategies in the form of answers to questions like "what decisions can reader make when they read? What can they decide to do in order to come to terms with

text? How do readers control the reading of the text?" (p. 15). The reading strategies survey used in the current study was adapted from Mokhtari & Sheorey (2002) *Survey of Reading Strategies* (SORS). The SORS is based on Mokhtari & Reichard's (2002) *Metacognitive-Awareness-of-Reading-Strategies Inventory* (MARSI). According to Mokhtari and Sheorey (2002), the SORS is intended to "measure the type and frequency of reading strategies that adolescent and adult ESL students perceive they use while reading academic materials in English" (p. 4). Since the SORS was based on the MARSI, the reliability and internal consistency of the MARSI was used to describe the reliability of the SORS. The alpha coefficient for internal consistency and reliability for the MARSI was .93. The subscales of the MARSI also show high internal consistency and reliability, with an alpha coefficient of .92 for the global subscale, .79 for the problem-solving subscale, and .87 for the support subscale (Mokhtari & Reichard, 2002). To avoid problems in comprehending the strategy statements, the survey was translated into Arabic. In the following section, I describe the adaptation of the SORS for the current study survey, the process of establishing translation authenticity, and the pilot testing of the survey.

Adaptation of SORS

The original SORS has 30 reading strategy statements. Two strategies were removed from the SORS. Since the participants may perceive having a purpose only sometimes when they read EFL academic materials and because of its implicit assumption that EFL learners read with a purpose in mind, the SORS strategy *"I think about whether the content of the text fits my purpose"* was removed. Another strategy, *"when reading, I think about information in both English and my mother tongue"* was

also removed because it seemed redundant with the using of background knowledge strategy. Based on my previous research on vocabulary learning strategies (Al-Nujaidi, 2000) and my experience as both an EFL student and teacher in Saudi Arabia, I added ten strategy statements (29-38) to the SORS for their potential common use by the participants in the current study and for piloting purposes (Appendix A). Two of the added reading strategies were about summarizing texts for comprehension, and discussing the information in the text with others to check understanding. These strategies are also included in MARSI.

After the initial piloting with EFL learners and the examination of the survey translation, three of the added strategies were removed. One of these strategies was strategy 37 "*when reading, I draw diagrams or pictures representing the information in the text to understand it.*" This strategy was removed because it may only be utilized by students majoring in scientific or technical fields. Strategy 31, "*I try to distinguish between important and unimportant words in understanding the general meaning of the text*", was also removed for the large discrepancy it produced while establishing the authenticity of the translation, i.e., the strategy statement elicited different responses when given in Arabic and English. This strategy was also implicit in the "*using context clues*" strategy. Strategy 36, "*when the text becomes difficult, I read silently*", was also removed because the students were supposed to read silently when they normally read. This is not a strategy that is used only upon having a problem in comprehension. Although it was not included in the initial pilot, the strategy of "*analyzing word roots and affixes to know their meanings*" was added to the final survey, as another strategy that emphasizes the use of linguistic context clues. After removing 3 strategies and adding

one strategy to the adapted survey, the final modified survey included 36 strategy statements (Appendix B). Twenty-eight strategies were original SORS strategy statements. More information about the original and the added strategies is provided in the description of the subscales of the survey.

The 5-point scale used in the SORS was modified to a 6-point scale to avoid a middle point, which participants usually choose if it is available. Option (1) on the scale stands for non-use of the strategy while option (6) stands for high use of the strategy. Other frequency options fall between the two ends of the scale. The means of strategy frequency were analyzed as follows: a mean of 4 and higher was considered high use of the strategy, 3-3.99 represented medium frequency of use, and 2.99 and below was considered low usage. The participants were constantly reminded of the fact that their accurate and honest responses were important for the reliability of the findings.

Establishing Translation Authenticity

After the adaptation of the SORS, it was important to translate the survey into Arabic, the participants' first language (Appendix C). This step was taken to ensure the subjects' understanding of the items on the questionnaire. The translation of the survey went through different stages. Using my expertise as a professional English-Arabic translator, I first translated the adapted survey into Arabic. Second, I consulted with several bilingual experts who praised the translation. Third, to confirm that the Arabic version of the survey would elicit the same information as the English version, I sent both the initial English and Arabic versions of the survey (38 items) separately to native speakers of Arabic pursuing graduate degrees in applied linguistics in the United States (n=6), and Saudi professors who had graduated from American or British universities

(n=2). They were asked to complete each survey as if they were participants in the study. The two administrations were one week apart. This period was short so that the verification group would not have a long period of time between the two administrations which might result in changes in their perceptions about some of the strategies. However, the period was not so short that it would allow them to remember their responses to the previous version of the survey. Responses to the two versions of the questionnaire were analyzed to check their compatibility with each other. Thirty-one strategy statements elicited consistent responses, i.e., responses to the Arabic and English versions were almost the same. Seven items of the initial 38 strategy statements produced somewhat inconsistent responses. These items were discussed with the participants who had provided inconsistent responses.

The examination of response inconsistency revealed that, in general, the Arabic translation did not seem to pose a problem in understanding the reading strategies elicited in the survey. Because they responded to both versions of the questionnaire, one important source of confusion to the participants was taking the strategy statements in the Arabic questionnaire to refer to reading Arabic texts. To correct this in the main study, I alerted the participants to the fact that the strategy in each statement is concerned with reading English texts. Another potential problem with the survey was that some participants appeared to confuse the two ends of the scale. Thus, the survey was modified so that the participants would be clear about which end of the scale represents 'high' strategy use and which end represents 'no' use of the strategy in question. This was achieved by including adverbs like 'always', 'usually', 'often', 'sometimes', 'rarely' and 'never' under the number representing them against several items in the survey.

These steps were taken to ensure that all items on the survey would elicit only the information they were supposed to elicit.

An additional response inconsistency was related to the participants' confusion about some statement in the English version of the survey. The confusion some of the participants had in understanding the English strategy statements, emphasized the importance of the translation. If such items were confusing to a participant who had had 10 years of experience with English texts as a graduate student at U.S. universities, the strategy statements might well cause more confusion and misunderstanding for high school graduates. Thus, the initial verification of the translated survey by educated native speakers of Arabic shows the importance of using the participants' native language in presenting these statements in the main study.

After the processes of adaptation and translation were completed, the survey was piloted with 60 Saudi EFL first-year university students enrolled in the English department at Al-Imam Mohammad Bin Saud Islamic University in Riyadh, Saudi Arabia. The participants represented a small sample of the survey population of the current study. Descriptive statistics were reported to examine the perceived patterns of strategy use among the participants in the sample (Appendix D). Except for five strategies, the pilot study found the participants in the sample to perceive using the reading strategies with either high or moderate frequency. Significant gender differences were also found in the participants' use of some reading strategies (Appendix E).

Survey Reliability

When the final modified survey was administered to the participants in the current study, the overall reading strategies survey and the three subscales were examined for

internal consistency and reliability. The alpha test produced a high alpha coefficient of .88 for the overall survey (36 statements). The alpha test also showed high internal consistency and reliability among the items of the subscales. The alpha coefficient was .75 for the global strategies subscale (15 items), .74 for the problem-solving subscale (10 items), and .71 for the support strategies subscale (11 items).

The Modified Reading Strategies Survey

The current study's reading strategies survey had a background component with several items eliciting demographic information about the participants. These items included background information like age, type of intermediate and high school attended (public vs. private), extra English courses, self-rated proficiency and vocabulary knowledge, and the amount of extensive reading. To check how the students regard the role of vocabulary in foreign language learning, the last item on this part of the survey elicits how the students rate four major components of language: vocabulary, grammar, spelling, and pronunciation, in terms of their importance to language learning.

In the second part of the survey, the participants' reading strategies were measured by their responses to a 36-item survey of reading strategies adapted from the SORS (Mokhtari and Sheorey, 2002). Twenty-eight strategy statements on the current study questionnaire came from the SORS, which comprises three subscales of reading strategies: global, problem-solving, and support strategies. After a round of piloting, eight more strategies were added to the original SORS survey. These strategies are presented in the description of the subscales of the survey.

The coding scheme used to classify the reading strategies explored in this study, follows the classification of the SORS. Mokhtari & Sheorey (2002) classify 28 of the

reading strategies explored here as either global, problem-solving, or support strategies. The other 8 strategies were classified according to their definitions and description of each of these subclasses of reading strategies. The different types of reading strategies were described as follows:

1. Global strategies (GLOB) are those "intentional, carefully planned techniques by which learners monitor or manage their reading." In the original SORS survey, there were only 13 global strategies. The internal consistency and reliability of this global subscale in the MARSI was .92. As I mentioned in the adaptation section, I removed one global strategy from the SORS "Checking if content fits reading purpose." I also added three global strategies which makes a total of 15 global strategies on the current study survey as shown in Table 3. The added strategies were (l3) looking for main ideas, (14) distinguishing main ideas from supporting ones, and (15) connecting the meaning of known words to those whose meanings are unknown (Table 3). These strategies were added for their relevance to top-down and interactive models of reading.
2. Problem-solving strategies (PROB) are "actions and procedures readers use while working directly with the text." These are localized, focused techniques used when problems develop in understanding textual information. The original survey has 8 problem-solving strategies. The internal consistency and reliability for this section in the MARSI was .79. I used all 8 problem-solving strategies used in the SORS, as shown in table 3. I added two more strategies: (9) reading word by word, and (10) checking words roots and prefixes (Table 3). Note that although the strategy of *reading word by word* may not be a useful reading strategy, my

experience with Saudi EFL learners indicated that it was a common practice. The pilot study also showed this strategy to be a commonly reported reading strategy among EFL learners in Saudi Arabia. Using this strategy may be indicative of the participants' small vocabulary size and poor reading ability which usually hinders reading in larger chunks and phrases (Honsefeld, 1977).

3. Support strategies are basically support mechanisms intended to aid the reader in comprehending the text. Nine support strategies were included in the SORS. The internal consistency and reliability for this section in MARSI was .87. I used 8 of the 9 support strategies used in the SORS as shown in Table 3. I added three support strategies because of their importance in EFL contexts. These include (9) summarizing the reading text, (10) discussing and checking comprehension with others, and (11) making a list of new words (Table 3). In a previous study (Al-Nujaidi, 2000), I found the wordlist strategy to be a common strategy among Saudi EFL learners.

Some of the reading strategies I added to the SORS, like *summarization* and *discussing information in the text with others to check comprehension* are also found in the MARSI. Based on my previous research on vocabulary learning strategies (Al-Nujaidi, 2000), and experience with EFL learner in Saudi Arabia, some strategies were added for their reported common use among EFL learners in Saudi Arabia. All reading strategies examined in the current study as well as the reading strategy subscales to which they belong are presented in Table 3.

Table 3: The Strategies Comprising the Three Reading Strategies Subscales

Global Reading Strategies
1. Having a purpose in reading
2. Using background knowledge
3. Skimming
4. Reviewing text characteristics
5. Distinguishing between parts of the text that need careful reading and those which do not
6. Using tables and figures in the text
7. Using context clues
8. Using typological aids in the text
9. Evaluating what is read critically
10. Checking comprehension as one reads
11. Guessing what the reading material is about
12. Checking one's guesses about the text
13. Looking for main ideas
14. Distinguishing main ideas from supporting ones
15. Connecting the meaning of known words to those whose meanings are unknown
Problem-solving Reading Strategies
1. Reading slowly and carefully
2. Adjusting reading speed
3. Paying closer attention to what is being read
4. Stopping to think about what has been read
5. Visualizing the information in the text
6. Rereading to increase understanding
7. Guessing the meaning of unknown word
8. Getting back on track upon losing concentration
9. Reading word by word
10. Checking words roots and prefixes
Support Reading Strategies
1. Taking notes while reading
2. Translating difficult parts into the reader L1
3. Reading aloud
4. Highlighting important information in the text
5. Using the dictionary
6. Paraphrasing difficult parts
7. Finding relations between the different parts of the text
8. Asking oneself questions that the text should have answered
9. Summarizing the reading text
10. Discussing and checking comprehension with others
11. Making a list of new words

The Reading Test

The correltional nature of the current study requires that all relevant variables be properly measured in order to ensure the validity of the findings. Thus, a reading test

was specifically designed to tap most aspects of the participants' reading comprehension ability (Appendix F). Because of the expected low reading ability of the participants, standardized reading tests were not feasible options. Also, standardized tests are not designed to provide information about the participants' performance on specific reading skills, which is an important objective of the current study. Instead, a test comprising reading passages that matched both the level and the content of the participants' textbooks was designed by the researcher.

The reading test was the second instrument used in the current study. The test comprised 3 passages. These passages were taken from three different TOEFL preparation books. The first passage was taken from Sullivan & Zhong (1997). It was on *Endangered Species* and was 260 words long. The second passage was on *Honeybee* and had 262 words. This passage was taken from Pyle (1995). The third passage was taken from Rogers (1996). The passage was on *Wooden Houses* and was 217 words in length. A number of comprehension questions follow each passage. Most of the major content vocabulary items in the reading passages were found in the vocabulary lists in the participants' high school textbooks, which would establish the content validity of the reading test.

After examining Saudi secondary school EFL textbooks, it was also confirmed that the readability of the passages on the reading test matched to a large extent the readability of the passages in the textbooks of third-year high school students. Several passages from the students' textbooks as well as the passages used in the reading tests were typed using Word Microsoft to check their readability level. The readability level was about 60 on the Flesch reading ease scale, which almost corresponds to 8th grade

reading level on the Flesch-Kincaid Grade Level. The readability was even slightly higher for the whole test at 66 on the Flesch reading ease corresponding to 7th grade reading level.

After several rounds of piloting with ESL students at intermediate and upper intermediate levels and Saudi EFL students from the target population, the comprehension questions were slightly modified to suit the proficiency level of the students and to avoid questions that are culturally biased. There were 20 comprehension questions. These questions were in a multiple-choice format to tap only comprehension and to save administration time. There were five questions for each specific reading skill or strategy. These skills and strategies include skimming, scanning, guessing word meaning from context, and making inferences.

The definition of each strategy was used as the basis for judging the type of every question. According to Aebersold & Field (1997), skimming is "a quick, superficial reading of a text in order to get the gist of it" (p.74). They also describe scanning as "looking quickly through the text for a specific piece of information" (p. 76). Questions 4 and 5 in the first passage, question 1 in the second passage, and questions 4 and 5 in the third passage (Appendix F) are all skimming questions, while question 6 in the first passage, questions 2, 4, and 7 in the second passage and question 2 in the third passage are scanning ones.

Five questions on the reading test focus on the skill of guessing words from context. These questions indirectly asked the participants to guess the meaning of some low frequency words encountered in the texts by choosing a synonym from 4 options. As confirmed by the piloting of the test, it was highly unlikely that the target participants

would know the meaning of these words, and therefore, they would have to resort to the context to guess their meanings. Questions 2, 3, and 7 in the first passage, question 6 in the second passage, and question 5 in the third passage are all guessing questions (Appendix F).

Another five questions were targeted towards testing the skill of inferencing. Inference questions require "the ability to answer questions relating to the meanings not directly stated in the text" (Alderson, 2000, p. 9). Questions 1 and 8 in the first passage, questions 3 and 5 in the second passage, and question 1 in the third passage are the inference questions used in this test.

The Vocabulary Test

The vocabulary test used in the current study is a new version of Nation's (1990) Vocabulary Levels Test (VLT) developed by Schmitt (2000). According to Read (2000), Nation's test has proven to be a good diagnostic measure of vocabulary size. Read suggests that the VLT is almost the standard test of vocabulary. In the absence of a standard vocabulary test, Schmitt (2000) also contends that it is the closest to a standard vocabulary test. Although the original use of the VLT seems to be diagnostic and instructional, several researchers have used it to explore vocabulary acquisition issues (Read & Chapelle, 2001). Nation (2001) states that, "The test is designed to be quick to take, easy to mark and easy to interpret" (p. 21).

Schmitt (2000) developed two new versions of the VLT, one of which is used in the current study. Nation (2001) commends Schmitt's new versions of the VLT, and considers them a "major improvement to the original test" (p. 416). In fact, Nation included one of Schmitt's new versions of the test in one of the appendices to his new

book *Learning Vocabulary in Another Language*. Referring to this development, Read and Chapelle (2001) also state, "It is only now- nearly two decades after the original test was devised- that two more thoroughly researched versions have been presented for general use by Schmitt and his associates" (p. 18-19).

The format of the test, as described by Read (2000), "involves word-definition matching, where the test-takers need to match the words to the definition." The two versions of the test developed by Schmitt (2000) are different from Nation's original test in that they each have 30 definitions in each section and 60 word options. The original test has only 18 definitions and 36 words. Each group of words belongs to one grammatical category in order to prevent test-takers from using this grammatical aspect and to make them rely on their lexical knowledge only.

Read and Chapelle (2001) described VLT to consider vocabulary as a discrete construct and as a context-independent test that tests vocabulary in isolation without a reference to a linguistic context. It is also selective as it focuses on certain vocabulary items. And thus they call the VLT a trait definition test, i.e., it assesses whether the learners know the words in the test or not. It should be noted here the VLT is a test of passive and receptive vocabulary. It taps even the slightest knowledge of a word meaning, or what Schmitt (2000) calls the "threshold knowledge" (p. 174), and what Nation (2001) calls "partial knowledge of words" (p.21). Although one's passive vocabulary is usually larger than his or her productive vocabulary, a strong correlation has been found among the two (Laufer, 1998).

Several word-frequency and word lists were consulted in the construction of the VLT. The complete VLT test has five sections: the 2000 words, 3000 words, 5000

words, the university world list or academic vocabulary, and the 10,000 words. Only the 2000, and 3000 word levels, and the academic vocabulary were tested in the current study (Appendix G). Because it is recognized as the threshold for reading unsimplified English texts (Laufer, 1997, 1992), and a prerequisite for successful communication (Nation, 2001), the 3000 word level was included in the test. The 2000 word and academic vocabulary levels were also selected because mastery of these two levels, according to Nation (2001), may cover 90% of the vocabulary of authentic English texts, and hence facilitate reading of unsimplified materials. According to Nation (2001), academic vocabulary items are important because they are common to most academic texts and are specialized and limited kind of vocabulary which makes it possible for teachers to help their students acquire them (p. 189-191). The 5,000 and 10,000 word levels were excluded for two reasons. The first reason was to save administration time, and the second was because of my conviction, based on my personal EFL learning and teaching experience in Saudi Arabia, that the target participants may not have an extensive vocabulary knowledge that would reach either the 5,000 or the 10,000 levels. The vocabulary test directions were translated into Arabic to ensure the participants' understanding of the task (Appendix H).

Procedure

The three instruments were administered together in the students' regular classroom at the beginning of the fall semester 2002. Before conducting the study, I obtained written consents from the different organizations to which the target institutions belong. Second, the administration procedure was discussed with the deans of these colleges and department heads. Since it was the first week of school, all institutions were

very cooperative in allowing their students to participate in the study. The instrument was, to a large extent, self-explanatory. Thus, each department assigned the administration job to one of their English graduate students or reading teachers, who were briefed about the procedure of administering the survey and the two tests. Based on the piloting of the tests and the survey, I proposed an administration time of 100 minutes or two class periods. Consequently, all institutions allowed their students to respond to the different parts of the instruments in two consecutive teaching periods, which usually totaled up to 105 minutes. I also alerted the administrators to inform the participants about their time, and the time they needed to spend on every section of the instrument.

The three instruments were stapled together. At the beginning of the administration, the participants completed the reading strategies survey, which usually took from 12 to 15 minutes. The participants then took the reading comprehension test, which took approximately 50 minutes to complete. Finally, the participants took 30-minute vocabulary test. In one of the male institutions, I was able to administer the instrument myself. The time of the two teaching periods was sufficient for almost all the students to complete all parts of the instrument. I was in constant contact with both male and female colleagues who administered the instrument at other institutions and heard no complaints about the clarity of the questions or the time allotted for the completion of the survey and the two tests. When the administration was completed, I collected the completed copies of the instrument from the different institutions.

Data Analysis

Some reliability and internal consistency statistics were run on the overall reading strategies survey and the different subscales. Before embarking

on the analyses pertinent to the different research questions, normality tests were run on all the relevant variables. This was done to specify whether parametric or nonparametric tests were more appropriate for certain analyses. For the correlation size effect, I followed Cohen (1988) who considers correlation coefficients below .30 to represent weak effect, coefficients above .30 to represent moderate effect, and coefficients of .50 and above to represent large effect. This seems to be the common assessment of interpreting correlation effects in the behavioral sciences.

The data were then statistically analyzed to address the five research questions posed at the beginning of this chapter. Descriptive statistics, like means and standard deviations were run to address the first research question, "What are the perceived reading strategies of Saudi EFL learners enrolled in English and technical university programs when reading English academic materials?" Some correlation tests among the different subscales of the survey and the overall survey were also run. A one-way repeated measures ANOVA was conducted to check for significant differences in the participants' perceived use of the three types of reading strategies, i.e., global, problem-solving, and support strategies. A paired-samples *t*-test was also conducted to check which types of reading strategies were perceived to be used more frequently.

Descriptive statistics were also calculated to address the second research question, "What is the Saudi EFL university learners' vocabulary size?" To show the relationship between the participants' performance on the different

levels of the test, the correlations between the different levels of the vocabulary test were also calculated.

Some descriptive statistics were also run to address the third research question, "What is the level of reading comprehension among Saudi EFL learners? These statistics were also used to divide the participants into different reading proficiency groups. The correlation between the different parts of the reading test and the total reading scores were also calculated. An ANOVA was conducted to check for significant differences in the participants' performance on the four reading skills. A paired-samples *t*-test was also conducted to find on which reading skills the participants' performed better.

Several statistics including correlation, independent samples *t*-tests, and the analysis of variance (ANOVA) were used to address the fourth research question, "What is the relationship, if any, between reading strategies, vocabulary size, and reading comprehension of Saudi EFL learners?" Since it was difficult to conduct a regression analysis on these three variables due to the expected high correlation between vocabulary size and reading comprehension which usually cancel each other in the regression model, the *t*-test and ANOVA were used to examine this relationship through possible differences among high, medium, and low vocabulary and reading proficiency groups. Again, differences among these groups on their perceived use of the different types of strategies and of certain important strategies discussed in Chapter II were examined.

More descriptive and correlational analyses were also conducted to address the fifth research question, "What is the impact of learner variables like gender, amount of outside reading, beliefs about the importance of vocabulary in language learning, perceived proficiency level, and perceived vocabulary knowledge on reading strategies, vocabulary size, and reading comprehension?" Although the focus was on examining gender differences as a neglected aspect of EFL reading in Saudi Arabia, different analyses were conducted to address the different parts of the research question. The independent-samples *t*-test was used to examine gender differences while correlation and descriptive statistics including frequencies were used to explore the impact of the other variables on the relationship between vocabulary size, reading strategies, and reading comprehension.

In the following chapter, I will present the results of the current study. As the data analysis section has shown, the analysis of the data follows the order of the five research questions, i.e., analyses are conducted to address the specific research questions.

Chapter IV

Results

To determine the appropriate statistical analysis, the first step that was taken in the analysis of the reading strategies perceived to be used by Saudi EFL learners was to check the normality of the data. Upon examining the skewness level for every item on the survey, the data on the participants' perceived strategy use was found to be normally distributed. The skewness level was not significantly different from normal. A skewness level between (+/- 1.0) would make the variable approximately normal (Morgan, Orlando, Gloeckner, 2001). Except for two items that went slightly beyond the normality limit, -1.02 "reading slowly and carefully" and 1.09, "using pictures and tables" all other items satisfied the normality criterion.

The Cronbach's alpha test was run to measure the internal consistency and the reliability of the questionnaire. The alpha coefficient for the overall survey (36 statements) was high at .88. The test was also run for the subscales of the survey. The alpha coefficient was .75 for the global strategies subscale (15 items), .74 for the problem-solving subscale (10 items), and .71 for the support strategies subscale (11 items).

First Research Question

In order to answer the first research question, "What are the patterns of reading strategies employed by Saudi EFL learners enrolled in English and technical university programs?" descriptive statistics were run to obtain the means of use for every individual strategy. Judgment of strategy frequency was based on means of reported use: 4 and above was considered high reported use, 3-3.99 reflected moderate reported use, and 2.99

and below was considered low use. Fifteen strategies fall in the high reported use category as shown by the first 15 strategies in Table 4.

Table 4: Means and Standard Deviations of Saudi EFL Learners' Reported Strategy Use

No.	Strategy	Type	M	S.D.
1	*Using text features (e.g., tables)*	*GLOB*	*4.95*	*1.22*
2	*Reading slowly and carefully*	*PROB*	*4.84*	*1.33*
3	*Translating*	*SUP*	*4.68*	*1.42*
4	*Rereading*	*PROB*	*4.65*	*1.48*
5	*Using Dictionary*	*SUP*	*4.58*	*1.68*
6	*Underlining and highlighting*	*SUP*	*4.48*	*1.49*
7	*Getting back on track upon losing concentration*	*PROB*	*4.46*	*1.54*
8	*Reading word by word*	*PROB*	*4.42*	*1.47*
9	*Guessing meaning of unknown words*	*PROB*	*4.40*	*1.47*
10	*Using prior knowledge*	*GLOB*	*4.36*	*1.55*
11	*Paying closer attention to reading*	*PROB*	*4.31*	*1.52*
12	*Setting a purpose in reading*	*GLOB*	*4.13*	*1.49*
13	*Checking understanding upon reaching new information*	*GLOB*	*4.06*	*1.41*
14	*Using context clues*	*GLOB*	*4.04*	*1.66*
15	*Adjusting reading speed according to the material*	*PROB*	*4.01*	*1.57*
16	Connecting meaning of known words to those unknown	GLOB	3.94	1.58
17	Visualizing information read	PROB	3.89	1.59
18	Pausing and thinking about reading	PROB	3.80	1.65
19	Looking for main ideas	GLOB	3.80	1.65
20	Guessing the topic of reading	GLOB	3.72	1.72
21	Paraphrasing	SUP	3.61	1.64
22	Checking one's guesses about the text	GLOB	3.60	1.75
23	Constructing wordlist of new words in the text	SUP	3.56	1.87
24	Going back and forth in the text	SUP	3.55	1.66
25	Checking word roots and affixes	PROB	3.50	1.62
26	Taking notes while reading	SUP	3.47	1.74
27	Skimming	GLOB	3.39	1.64
28	Distinguishing between main and support ideas	GLOB	3.21	1.59
29	Asking oneself question	SUP	3.21	1.67
30	Discussing reading with others to check understanding	SUP	3.18	1.62
31	Deciding what to read closely and what to ignore	GLOB	3.13	1.62
32	Reading aloud when text becomes hard	SUP	3.00	1.77
33	*Checking text characteristics*	*GLOB*	*2.88*	*1.64*
34	*Summarizing for better understanding*	*SUP*	*2.78*	*1.67*
35	*Using typological aids*	*GLOB*	*2.67*	*1.75*
36	*Evaluating what is read*	*GLOB*	*2.65*	*1.54*

The majority of the strategies fall in the moderate use range. This category comprises 17 strategies. The low use category comprises the least number of strategies. These are the last 4 strategies in Table 4. Although the high and medium ranges of use comprise strategies from all three types of strategies, the low frequency category has only one global and 3 support strategies. Standard deviations from the means of the participants' perceived strategy use show large variation in the participants' responses to strategy statements.

When the overall mean of reported reading strategy use by individual participants was examined, the highest overall mean was 5.29 while the lowest was 1.61. It should be noted here that those who perceive using all strategies at all times will have a mean of (6.00), and those who never use any of these strategies will have a mean of (1.00). Although there are few cases that belong to the two ends of the scale, the majority of the participants are moderate strategy users. The overall mean for the whole sample, or the mean of the means, was 3.80 with a standard deviation of .70. However, the mean of perceived use does not mean that all participants perceive using the strategy with frequencies around the mean. A strategy like *setting a purpose in reading*, for example, has a high mean of perceived use (M= 4.13) while 5 % of the participants never used it, 8 % rarely used it, and 25 % used it only sometimes.

Relationship among the Different Strategy Categories

The means and the standard deviations were also calculated for the subscales of the survey. The means and the standard deviations of the participants' reported use of global, problem-solving and support strategies are reported in Table 5. All subparts of the reading strategies survey show significantly strong correlation with the overall mean

of perceived strategy use; global $r = .91$, $p < .001$, problem-solving $r = .87$, $p < .001$, and support $r = .87$, $p < .001$. The three types of reading strategies have also shown strong correlations among themselves. The global strategies subscale had a significantly strong correlation with both the problem-solving strategies subscale $r = .72$, $p < .001$, and the support strategies subscale $r = .69$, $p < .001$. Problem-solving strategies had also a strong correlation with support strategies $r = .63$, $p < .001$. This shows a strong relationship among the different types of reading strategies reported to be used by the participants in the current study. The participants also showed more frequent use of problem-solving strategies while they seem to use global and support strategies with similar frequency.

Table 5: Means and Standard Deviations of the three Subscales of Reading Strategies

Type of reading strategies	# of statements	*M*	*SD*
Problem-solving strategies	10	4.22	.83
Support strategies	11	3.69	.82
Global strategies	15	3.63	.76

Examining the means of the different subscales of strategies, problem-solving strategies have the highest mean. The one-way repeated-measures ANOVA was conducted to check difference among the participants' reported use of the three different types of reading strategies. The standard univariate ANOVA indicates a significant difference between the means of the three subscales, $F(2, 450) = 115.86$, $p = 000$. Using the paired-samples *t*-test, I conducted pairwise comparisons of the participants' perceived use of the three different types of reading strategies. Even when the *p* value was adjusted using Holme's sequential Benferroni procedure by dividing the original *p* value (.05) by the number of comparisons (.05/4 = .0125), some significant differences were observed. Supporting the considerable difference in their means, significant differences were found between problem-solving strategies and global strategies $t(225) = -14.95$, $p = .000$, and

problem-solving strategies and support strategies t (225) = 11.31, p = .000. No significant differences were found between global and support strategies.

The analyses conducted to address the first research question showed the participants to perceive using most of the reading strategies with either high or moderate frequency. The overall survey and the subscales were reliable and internally consistent. The participants' responses to strategies making up the different subscales showed significant and strong correlations with their responses to the overall survey and to the other subscales. However, the analysis of variance showed significant differences in the participants' perceived use of strategies on the three subscales. To explore this significant difference, a paired-samples t-test was conducted and showed the participants to perceive using problem-solving strategies significantly more frequently than global and support strategies.

Second Research Question

Before embarking on the analysis of the results of the vocabulary test, a normality test was run to check whether the results of the test were normally distributed or not. The skewness for the 2000 words level was within the acceptable range of 0.95. However, the scores for the 3000 word level and the academic vocabulary level were not normally distributed. The skewness level for the 3000 words level was 1.89, and was 2.0 for the academic vocabulary level, as shown in Table 6. The lack of normal distributions in the scores of these two parts of the vocabulary test required the use of nonparametric tests with any statistic that involved any or both of these variables.

To answer the second research question, "What is the Saudi EFL learners' vocabulary size?" descriptive statistics were calculated to examine the results of the vocabulary test. Descriptive statistics of the three sections of the vocabulary test are reported in Table 6.

Table 6: Descriptive Statistics of the Different Parts of the Vocabulary Test

Vocabulary Level	N	Min.	Max.	*M*	*SD*	Median	Skewness
2000 words level	226	0	30	10.21	6.86	9	.95
3000 words level	226	0	28	4.45	4.66	4	1.89
Academic vocabulary	207	0	28	3.93	4.07	3	2.00

The 2000 Words Level

All participants (N= 226) took the 2000 word level of the test. The mean score of all participants on this part of the test was (10.21) with a large standard deviation of (6.86). Since each item of the test weighs one point, the average number of words known by the majority of the participants is 10 words out of the 30 words tested in this section of the test. This might show that the participants' average vocabulary size estimate was around 680 words (Schmitt, personal communication, 2003). Although a few students were able to respond to the 30 items correctly, some students were not able to answer any item correctly, as can be seen from the range of scores in Table 6. Technical students' average score on the 2000 word level of the test was (4.9), which means that they only know half of the words known by participants majoring in English.

To make sure that there were no significant differences between the students who received their previous education at private institutes (n=15) and those who went to public schools (n=210), the nonparametric independent-samples Mann-Whitney U test was run and no significant differences were found between the two groups in their scores

on the 2000 word level of the test. The nonparametric Mann-Whitney test was used here instead of a *t*-test because of the unequal number of participants in each group.

The 3000 Words Level

All participants (N=226) responded to the 3000 words level of the test. The mean score for this part of the test was 4.45 with a large standard deviation of 4.66. Since the scores for this test were not normally distributed, the median score 4 was also calculated. This means that the majority of the participants know only 4 or 5 words out of the 30 words tested in this section of the test. This may show that the participants' average vocabulary size estimate is about 445 words. This may also suggest that the average vocabulary size estimate may be something between 445 and 680 words. Although a few students were able to respond to 28 items correctly in the 3000 word level, 47 participants (21%) were not able to answer any item correctly. No significant differences between private and public school students were found.

The Academic Vocabulary Level

Since it was the last section of the vocabulary test and the instrument in general, only 207 students completed to the academic vocabulary section of the test. The mean score for this part of the test was 3.93 with a standard deviation of 4.07. Since the scores for this test were not normal, the median was calculated and found to be 3. This means that the average participant knows only 3 or 4 words out of the 30 words tested in this section of the test. Since the academic vocabulary list comprises 570 words (Coxhead, 2000), the participants seem to know 76 academic vocabulary items only. Although a few students were able to respond to 28 items in the academic vocabulary section correctly, 47 participants (21%) were not able to answer any item correctly.

Private school students were found to score significantly better than public school students on the academic vocabulary section of the test Z = -1.97, p= .049. However, 10 of the 16 private school students scored below the overall mean on the 2000 word level. Since the overall performance on this part of the test is low and only a small number of students received their previous education at private schools, this difference is of no consequence to the current study. The two groups are considered homogeneous when it comes to their vocabulary size at the three levels of the test.

Correlation between the Different Levels of the Vocabulary Test

The different levels of the vocabulary test show strong correlations with each other. Since the scores on some of these levels were found to be not normally distributed, the nonparametric test of correlation, the Spearman's *rho* was calculated. Strong correlations were found between the 2000 words level and the 3000 words level *rho*= .57, $p < .001$, and between the 2000 words level and academic vocabulary *rho*= .52, $p < .001$. A strong correlation was also found between the 3000 words level and academic vocabulary *rho*= .72, $p < .001$.

The analyses conducted to address the second research question showed that the participants in the current study have a vocabulary size of 500-700 words. They also showed low knowledge of academic vocabulary. Since the students' performance on the academic vocabulary and the 3000 word level was generally low, and scores of these two levels were not normally distributed, the 2000 word level was used as the main measure of the participants' vocabulary size in most subsequent analyses.

Third Research Question

To answer the third research question "What is the level of reading comprehension among Saudi EFL learners?" some descriptive statistics about the participants reading comprehension scores were calculated. Before analyzing the data, some normality tests were run. The scores for the overall reading comprehension test were normally distributed. The participants' scores on the different subparts of the test were also normally distributed.

The reading comprehension test has 20 items, with 5 items testing each one of the four types of strategies; scanning, skimming, guessing from context, and inferencing. The overall mean of the reading comprehension test was 6.16, which means that the average participant got 6 items correct out of 20 items on the reading comprehension test. Only one student scored 20 on the reading comprehension test. Three students were not able to get any items on the test correct as shown by the minimum and maximum actual scores in Table 7. To ensure that all participants belong to a homogeneous group when it comes to their reading comprehension scores, the nonparametric independent-samples test, Mann-Whitney U was used to compare the private and public school graduates. No significant differences were found between the two groups, which confirmed that the reading scores belonged to a homogeneous group of students.

Table 7: Descriptive Statistics of Reading Comprehension Scores

Reading questions	*N*	*Min.*	*Max.*	*M*	*SD*	*Median*
Scanning	226	0	5	1.90	1.30	2
Skimming	226	0	5	1.74	1.22	2
Guessing	226	0	5	1.26	1.07	1
Inferencing	226	0	5	1.25	1.10	1
Reading score	226	0	20	6.16	3.38	6

The highest mean for the subparts of the reading test was for scanning 1.90, which means that an average participant got about 2 items out of the 5 items in this section right. The second highest mean was for skimming 1.74. The means for guessing and inferencing were the lowest at 1.26 and 1.25 respectively. The standard deviations show a large variation in the participants' performance on both the overall reading test and the four reading skills. The different parts of the test showed significant and strong correlations with overall reading scores, as shown in Table 8. Scanning scores moderately correlate with skimming and inferencing scores, but weakly correlate with guessing scores. There was also a moderate correlation between skimming and guessing (r = .34) and skimming and inferencing (r= .39). The weakest correlation was found between guessing and inferencing scores (r=.27).

Table 8: The Relationship among the Scores on the Different Parts of the Reading Test

Reading skill	Scanning	Skimming	Guessing	Inferencing
Scanning	1			
Skimming	.465**	1		
Guessing	.310**	.339**	1	
Inferencing	.408**	.386**	.266**	1
Total Reading score	.775**	.764**	.634**	.702**

** *Correlation is significant at the 0.01 level (1-tailed).*

The one-way repeated-measures ANOVA was conducted to check differences in the participants' performance on the different reading skills questions. The standard univariate ANOVA indicates a significant difference between the means of the four reading skills, F (3, 675) = 28.55, p = 000. Using the paired-samples t-test, I conducted pairwise comparisons of the participants' performance on the different reading skills questions. Even when the p value was adjusted through Holme's sequential Benferroni procedure by dividing the original p value (.05) by the number of comparisons (.05/6 =

.008), some significant differences were observed. The similarity in the participants' mean scores on scanning and skimming was supported by the pair-samples *t*-test, which showed no significant differences in the participants' performance on these two reading skills. No significant differences were also found between the participants' performance on word guessing and inferencing questions. However, the participants' performance on scanning questions significantly differ from their performance on guessing from context questions $t\ (225)= 6.88, p < .001$, and inferencing questions $t\ (225) = 7.45, p < .001$. Significant differences were also found between the participants' performance on the skimming questions and word guessing questions $t\ (225)= 5.44, p < .001$ and inferencing questions $t\ (225)= 5.69, p < .001$. In general, the participants' performance on scanning and skimming questions was significantly better than their performance on guessing from context and inferencing questions.

After examining the raw and the t-scores of the participants on the reading comprehension test, the participants were divided into 3 proficiency groups according to their performance on the reading test. Those scoring around the mean were considered the middle group. The raw scores were also converted into t-scores to ensure appropriate cut points. Since the middle point in t-scores is 50, all participants scoring at the mean of the row scores got a t-score of 50. Those who scored between 45 and 55 were considered to belong to the middle group. This corresponds to those scoring 6 or 7 on the reading test, as shown in Table 9. Taking the overall performance of the participants on the test as the criterion, scores of 8 or above were considered high scores. By the same criterion, scores of 4 or below were considered low scores. The middle group is sometimes disregarded in subsequent comparisons involving reading proficiency groups. Only

differences between high and low reading proficiency groups are examined in exploring the relationship between reading comprehension and vocabulary size. However, the reading strategies of all three reading proficiency groups were considered in subsequent analyses.

Table 9: Division of the Reading Proficiency Groups

Reading Proficiency	Group	N	Percent	T-scores	Raw scores	Cum. %
Low group	1	74	32.7	0-45	0-5	32.7
Middle group	2	89	39.4	45-55	6-7	72.1
High group	3	63	27.9	56-81	8-20	100.0
Total		226	100.0			

The relationship between the scores on the different parts of the reading test and overall reading comprehension ability was also examined. The results of the independent-sample *t*-test are presented in Table 10. In cases where the assumption of equal variance is not met, the *t*-test value reported is the one that does not assume equal variance. In both cases, significant differences favoring the high reading group were found. The test shows a significant huge difference between the two groups favoring good readers on each and every aspect of reading tested. This confirms that the scores on the overall test are reflective of the subparts of the test and can be used as rigorous measures through which other factors can be examined. Another observation is that the mean difference between good and poor readers was smaller for guessing from context and inferenceing than that for scanning and skimming.

Table 10: *T*-test of Good and Poor Readers' Performance on Subparts of the Reading Test

Subpart of reading test	T-test	Mean difference
Scanning	T (135)= -13.97, p= .000	-2.32
Skimming	T (135)= -13.88, p= .000	-2.22
Guessing	T (135)= -8.40, p= .000	-1.46
Inferencing	T (135)= -11.19, p= .000	-1.71

The analyses conducted to address the third research question showed that the general reading ability of the participants was poor. Although they performed relatively better on scanning and skimming questions, the participants' low reading ability was evident on all reading skills. The differences between good and poor readers in their overall reading ability was supported by the results of the independent-samples t-test which showed significant differences between the two groups in their performance on the four reading skills.

Fourth Research Question

To answer the fourth research question "What is the relationship, if any, between reading strategies, vocabulary size, and reading comprehension of Saudi EFL learners?" the relationship between these variables was examined. Since multiple-regression was not a valid option to examine this relationship due to the expected high correlation between vocabulary size and reading comprehension, every two variables were examined separately. I examine these relationships between vocabulary size and reading comprehension, reading strategies and reading comprehension, and vocabulary size and reading strategies.

The Relationship between Reading Comprehension and Vocabulary Size

To explore the relationship between reading comprehension and vocabulary size, a correlation test involving these factors was run. The reading scores were correlated with the participants' scores on each vocabulary level. A significant and strong correlation was found between reading comprehension and vocabulary size at the 2000 words level, $r = .60$, $p < .001$. Since the scores on the other levels of the vocabulary test were not normally distributed, the spearman *rho* was calculated to examine the

relationship between reading comprehension and vocabulary size at the other two levels. A significant but moderate correlation was found between reading comprehension and the 3000 words level, *rho* = .35, $p < .001$. This could have been caused by the fact that the participants' scores on this part of the vocabulary test were generally low. The correlation was even weaker between reading comprehension and academic vocabulary, *rho* = .28, $p < .001$. The 3000 word level and the academic vocabulary seem to be a little bit beyond the participant's vocabulary knowledge, and hence produce significant but not strong correlations with the reading comprehension scores. The limited range of scores on these two levels of the vocabulary test could have also resulted in the small correlation coefficient.

To explore the relationship between reading comprehension and vocabulary size from another perspective, the difference between good and poor readers in their performance on the vocabulary test was also examined. The parametric independent-samples *t*-test was run on the 2000 words level scores, and its nonparametric counterpart the Mann-Whitney U was calculated for the scores on the other levels of the test. Significant differences were found between good and poor readers in their performance on all parts of the vocabulary test, as reported in Table 11. This confirms the correlational results that a strong positive relationship exists between reading ability and vocabulary knowledge. However, the mean difference between the two groups was smaller at the 3000 words level, and even smaller at the academic vocabulary level. This indicates that the students' performance in general deteriorates as they go through the 3000 words level and the academic vocabulary level.

Table 11: *T*-test of Good and Poor Readers' Performance on Levels of Vocabulary Test

Vocabulary Level	T-test/Mann-Whitney	*H.M*	*HSD*	*L. M*	*LSD*
2000 words level	T (135)= -7.07, p= .000	15.59	7.95	7.50	4.75
3000 words level	Z = -4.53, p= .000	7.29	6.45	2.96	3.16
Academic vocabulary	Z = -3.61, p= .000	5.89	5.54	2.72	2.72

H.M= High group mean, L.M= Low group mean, HSD= high group standard deviation, LSD= low group standard deviation

The Relationship between Reading Comprehension and Reading Strategies

To explore the relationship between reading comprehension and reported reading strategies use, a correlation test involving these two factors was run. The reading scores were correlated with the participants' means of total reported strategy use. A significant but weak correlation was found between reading comprehension and means of overall strategy use, $r = .19$, $p < .005$. The reading scores also had significant but weak correlations with the means of the different types of reading strategies; global $r = .24$, $p < .005$, problem solving $r = .20$, $p < .005$, and support $r = .12$, $p < .05$.

To explore this relationship from a slightly different perspective, a one-way analysis of variance (ANOVA) was conducted to evaluate the relationship between reading comprehension and the use of reading strategies. The independent variable, i.e., reading proficiency, included three levels: a low, middle, and high group. Evaluated one at a time, the four dependent variables were: the overall total of strategy use, global strategies subscale, problem-solving subscale, and the support subscale. As shown in Table 12, the ANOVA was significant for the overall reading strategies and the three subscales. This indicates that students with different reading comprehension ability report using the different types of reading strategies with differing frequencies.

Table 12: ANOVA of Reading Proficiency Groups' Perceived Use of Reading Strategies

Type of strategies		Sum of Squares	*df*	Mean Square	*F*	Sig.
All strategies	Between	6.20	2	3.099	7.20	.002
	Within	1049.73	223	.470		
	Total	110.93	225			
Global	Between	9.43	2	4.71	8.64	.000
	Within	121.62	223	.55		
	Total	131.05	225			
Problem-solving	Between	8.114	2	4.06	6,10	.003
	Within	148.44	223	.66		
	Total	156.55	225			
Support	Between	4.21	2	2.11	3.17	.044
	Within	148.28	223	.67		
	Total	152.49	225			

Follow-up tests were conducted to evaluate the differences among the means. The results of the Scheffe post-hoc test as well as the means and the standard deviations for the three reading proficiency groups are reported in Table 13. For the overall strategy use, there were significant differences between the high reading proficiency group and the two other proficiency groups, but no significant differences were found between the lower proficiency group and the middle group. This pattern was consistent for global and problem-solving strategies. For support strategy use, there were significant differences between the high reading proficiency group and the middle group, but no significant differences were found between the lower proficiency group and the middle group or the high proficiency group, as reported in Table 13. No significant differences were found in the high and low reading groups' reported use of the individual reading strategies comprising the support strategies subscale. Interestingly, the low reading proficiency group also showed more frequent use of support strategies than the middle group. However, the high reading proficiency group always reported more frequent use of all types of reading strategies.

Table 13: Difference among Reading Proficiency Groups in Perceived Use of reading strategies

Reading Group		M	SD	Low	Middle
All strategies	Low	3.699	.660		
	Middle	3.692	.750	NS	
	High	4.065	.616	*	*
Global	Low	3.509	.723		
	Middle	3.498	.784	NS	
	High	3.958	.689	*	*
Problem solving	Low	4.059	.803		
	Middle	4.150	.905	NS	
	High	4.523	.688	*	*
Support	Low	3.636	.770		
	Middle	3.574	.872	NS	
	High	3.901	.784	NS	*

* Significant difference between the means with $p < .05$.

To check whether the impact of reading ability is evident in the participants' perceived use of all strategies, the difference between high and low reading proficiency groups in their perceived use of some important reading strategies was examined. The independent-samples *t*-test showed significant differences between good and poor readers in their perceived use of setting purpose for reading and activating background knowledge strategies, as shown in Table 14. The high and low reading proficiency groups showed no significant differences in their perceived use of using context clues, summarizing, and critical reading strategies like evaluating what is read and asking oneself questions about the text.

Table 14: *T*-test of High and Low Reading Proficiency Groups Perceived Use of Some Reading Strategies

Strategy	High *M*	Low *M*	*T*-test
Setting a purpose	4.56	3.96	T (134) = -2.45, p= .012
Background knowledge	4.68	4.08	T (135) = -2.30, p= .023
Using context clues	4.58	4.21	T (132) = -1.39, p= .168 (NS)
Asking oneself questions	3.44	3.22	T (134) = -.77, p= .443 (NS)
Evaluating what is read	2.75	2.72	T (133) = -.091, p=.928 (NS)
Summarizing	3.18	2.66	T (130) = -1.75, p=.082 (NS)

(NS)= Insignificant difference.

To further explore the relationship between reading strategies and reading comprehension, I examined the relationship between the participants' perceived use of certain strategies and the participants' performance on related comprehension questions. Three strategies, using context clues, guessing unknown words, and examining word roots and affixes, were correlated with the participants' performance on questions requiring guessing from context in the reading test. Except for a significant but weak correlation between the guessing of unknown words strategy and performance on guessing questions r= 16, p = .009, no correlation was found between the perceived use of these strategies and the participants' performance on guessing from context questions. The participants' performance on inferencing questions was not found to correlate with any relevant reading strategy. However, a significant but weak correlation r = 20, p = .001was found between inferencing ability and the strategy of guessing the topic of the text. No correlation was found between the participants' perceived use of the skimming strategy and their scores on the five skimming questions on the reading test.

The analyses conducted to examine the relationship between reading comprehension and the perceived reading strategies showed that participants with high reading ability always report the highest strategy use. This was also consistent when the

overall mean of the three types of reading strategies were examined. However, there were no significant differences between the high and low reading proficiency groups use of support reading strategies. This group of reading strategies comprises strategies that are popular among poor readers and those which are popular among skilled readers.

The Relationship between Reading Strategies and Vocabulary Size

To explore the relationship between reading strategies and vocabulary size, a correlation test was run. The participants' means of reported use of all reading strategies were correlated with their vocabulary size. A significant but weak correlation was found between overall strategy use and vocabulary size at the 2000 level, $r = .25$, $p < .001$. A significant weaker correlation was also found between means of reported use of all reading strategies and vocabulary size at the 3000 words level, $rho = .12$, $p < .05$. No significant correlation was found between overall reported reading strategy use and academic vocabulary size. However, to investigate this relationship more thoroughly, the participants' scores on the 2000 word level were divided into three proficiency groups according to their percentile ranks. The outcome of this recoding of scores produced 3 vocabulary proficiency groups, as shown in Table 15.

Table 15: Division of the Vocabulary Proficiency Groups at the 2000 Word Level

Vocabulary proficiency	Group	N	%	Percentile	Raw scores
Low group	1	99	43.8	0-35.00	0-7
Middle group	2	63	27.9	35.01-65.00	8-12
High group	3	64	28.3	65.01-100	13-30
Total		226	100.0		

The reading strategies profiles of the three vocabulary proficiency groups were examined by conducting a one-way analysis of variance (ANOVA). The independent variable, i.e., vocabulary proficiency, included three levels: a low, middle, and high

group. Evaluated one at a time, the four dependent variables were: the overall total of strategy use, global strategies subscale, problem-solving subscale, and the support subscale. As reported in Table 16, the ANOVA was significant for the overall reading strategies and the three subscales of reading strategies. This indicates that students with different vocabulary size use the different types of reading strategies differently.

Table 16: ANOVA of Difference among Vocabulary Groups in their Perceived Use of Reading Strategies

Type of Strategies		Sum of Squares	*df*	Mean Square	*F*	Sig.
All reading strategies	Between	8.05	2	4.03	8.728	.000
	Within	102.87	223	.461		
	Total	110.93	225			
Global strategies	Between	8.27	2	4,135	7.510	.001
	Within	122.78	223	.551		
	Total	131.05	225			
Problem-Solving strategies	Between	11.33	2	5.67	8.70	.000
	Within	145.22	223	.651		
	Total	156.55	225			
Support strategies	Between	9.57	2	4.78	7.465	.001
	Within	142.92	223	.641		
	Total	152.49	225			

Follow-up tests were conducted to evaluate differences between the means of the different vocabulary proficiency groups. The results of the Scheffe post-hoc as well as the means and the standard deviations for the three vocabulary proficiency groups are reported in Table 17. For the overall strategy use, there were significant differences between the low vocabulary proficiency group and the two other groups favoring the middle and high groups. But, no significant differences were found between the middle proficiency group and the high group. This pattern was consistent for global, problem solving, and support strategies. The high and middle vocabulary proficiency groups

showed more frequent use of all types of reading strategies than the low vocabulary proficiency group.

Table 17: Differences among Vocabulary Groups in Perceived Use of Reading Strategies

Vocabulary Group		M	SD	Low	Middle
All strategies	Low	3.586	.697		
	Middle	3.938	.723	*	
	High	3.989	.603	*	NS
Global	Low	3.420	.744		
	Middle	3.730	.779	*	
	High	3.856	.700	*	NS
Problem solving	Low	3.971	.844		
	Middle	4.413	.836	*	
	High	4.431	.714	*	NS
Support	Low	3.453	.801		
	Middle	3.853	.879	*	
	High	3.880	.714	*	NS

** Significant difference between the means with a $p < .05$.*

Although, the relationship between reading strategies and vocabulary size was not so strong in the correlation test, testing the difference between high and low vocabulary proficiency groups showed significant differences in their reading strategies profiles. This also applies to the relationship between reading comprehension and the use of reading strategies. Although the correlation between these two factors was weak, the analysis of variance showed a significant difference between the different levels of reading comprehension in their use of reading strategies. This indicates that high, middle, and low proficiency EFL students' report using reading strategies differently.

It should be noted here that the vocabulary size groups were, to some extent, consistent with the reading proficiency groups, especially at the high and low levels. About 58% of the high reading proficiency group was among the high vocabulary group while 57% of the low reading proficiency group was in the low vocabulary group. Only 26% of the middle reading proficiency group falls in the middle vocabulary group.

Fifth Research Question

To address the multifaceted fifth research question, "what is the impact of learner variables like gender, amount of outside reading, beliefs about the importance of vocabulary in language learning, perceived language proficiency, and perceived vocabulary knowledge on reading strategies, vocabulary size, and reading comprehension?" several analyses were conducted. I examined the relationship between the study's three main variables and each variable addressed in this research question separately.

Gender Differences

This section is devoted to exploring the relationship between gender and the three main variables of reading comprehension, vocabulary size, and reading strategies. The independent-samples *t*-test was conducted to explore the impact of gender on each main variable.

Gender and Reading Comprehension

An independent-samples *t*-test was conducted to evaluate the relationship between gender and the total reading comprehension scores as well as the subparts of the test. Descriptive statistics including the means and the standard deviations of both males and females as well as the *t*-test of the difference between the two groups in all subparts of the test are reported in Table 18. Significant gender differences favoring females were found in total reading comprehension scores, and all subparts of the test, except for the guessing from context questions. Male and female participants appeared to have comparable guessing from context skills.

Table 18: Gender Differences in Means of Reading Comprehension

Reading ability	Gender	N	*M*	*SD*	T-test
Scanning	M	109	1.66	1.26	T (224)= -2.75, p= .006
	F	117	2.13	1.29	
Skimming	M	109	1.41	1.05	T (224)= -4.01, p= .000
	F	117	2.04	1.29	
Guessing from context	M	109	1.21	1.06	T (224)= -.678, p= .498 (NS)
	F	117	1.31	1.08	
Inference	M	109	1.06	1.05	T (224)= -2.64, p= .009
	F	117	1.44	1.11	
Total scores	M	109	5.32	3.02	T (224)= - 3.72, p= .000
	F	117	6.95	3.52	

(NS)= Insignificant difference

Gender and Vocabulary Size

An independent-samples *t*-test was conducted to evaluate the relationship between gender and the vocabulary size at the 2000 words level. The nonparametric independent-samples Mann-Whitney U was conducted to evaluate the relationship between gender and the vocabulary size at the 300 words level and the academic vocabulary level. Descriptive statistics including the means and the standard deviations of males and females as well as the *t*-test and the Mann-Whitney test of the difference between the two groups at all levels of the vocabulary test are reported in Table 19. Significant gender differences favoring females were found in the participants' vocabulary size at both the 2000 and 3000 words level. No significant differences were found between males and females in their knowledge of academic vocabulary. Male and female participants appeared to have similar academic vocabulary size. Although the female learners' mean scores were higher, their standard deviations from the means were also higher, indicating a larger variation in females' vocabulary scores on all levels of the test. This indicates that females' relatively larger vocabulary size is the result of a group of female participants scoring high on the test.

Table 19: Gender Differences in Means of Vocabulary Size

Vocabulary level	Gender	N	*M*/ M. Rank	*SD*	*T*-test/Mann-Whitney
The 2000 level	M	109	7.77	5.79	T (224)= - 5.48, p= .000
	F	117	12.48	7.02	
The 3000 level	M	109	3.43	3.44	Z= -2.96, p= .007
	F	117	5.39	5.41	
Academic level	M	90	3.37	3.38	Z = -1.40, p= .161 (NS)
	F	117	4.36	4.50	

(NS)= Insignificant difference.

Gender and Reading Strategies

An independent-samples t-test was conducted to evaluate the relationship between gender and the reported use of reading strategies. Descriptive statistics including the means and the standard deviations of both males and females as well as the *t*-test of the difference between the two groups in all types of reading strategies are reported in Table 20. Significant gender differences favoring females were also found in all types of reading strategies as well as the overall total of reading strategies. Although the number of male learners is slightly smaller than the number of males in the sample, standard deviations from the mean were larger for male learners.

Table 20: Gender Differences in Perceived Reading Strategy Use

Type of strategies	Gender	N	*M*	*SD*	T-test/Mann-Whitney
Global	M	109	3.50	.78	T (224)= - 2.51, p= .013
	F	117	3.75	.73	
Problem-solving	M	109	4.01	.88	T (224)= - 3.80, p= .000
	F	117	4.42	.75	
Support	M	109	3.52	.84	T (222)= - 2.88, p= .004
	F	117	3.86	.79	
All reading strategies	M	109	3.63	.72	T (224)= - 3.53, p= .000
	F	117	3.95	.65	

Male and female participants were found to report using reading strategies in general and the three subscales in the reading strategies survey with different frequency.

Except for an insignificant difference favoring males in the use of two strategies; looking for main ideas, and distinguishing between main and supporting ideas, female participants show more frequent use of all the reading strategies on the survey. In fact, thirteen strategies showed significant gender differences favoring female participants. These are reported in Table 21. These strategies included 5 problem-solving strategies, 5 support strategies, and 3 global reading strategies. This analysis shows clearly that significant gender differences favoring female students do exist among EFL Saudi students' reading comprehension ability, vocabulary size, and reported use of reading strategies. Although no significant gender differences were observed in the amount of time the participants devote to extensive reading, 63% of the participants who reported spending an hour or more on extensive reading everyday were females.

Table 21: Gender Difference in the Perceived Use of Some Reading Strategies

No.	Strategy	Strategy type	T-test
1	Having a purpose	GLOB	T (222)= - 205, p= .042
2	Reading aloud	SUP	T (221)= -2.30, p= .023
3	Translation	SUP	T (216)= -2.68, p= .008
4	Discussing reading	SUP	T (221)= -2.10 , p= .040
5	Getting back on track	PROB	T (218)= -2.45, p= .015
6	Adjusting reading speed	PROB	T (221)= -2.60, p= .010
7	Using dictionary	SUP	T (220)= -3.85, p= .000
8	Paying closer attention	PROB	T (219)= -4.18 , p= .000
9	Using pictures/tables	GLOB	T (221)= -2.63, p= .009
10	Pausing to think about reading	PROB	T (219)=-2.92 , p= .004
11	Finding relations	SUP	T (221)=-2.33 , p= .021
12	Guessing topic	GLOB	T (217)= -3.65, p= .000
13	Rereading	PROB	T (222)= -2.27, p= .024

Amount of Extensive Reading

Data analyzed here were elicited from the participants by posing the question "How much time do you spend daily on reading English texts other than your textbooks?" A statement requesting the participants to provide accurate responses

follows the question. The participants' responses to the extensive reading item on the questionnaire slightly violate the normal distribution level with a skewness level at 1.09. Responses to this item on the survey were coded with numbers ranging from 1 "read nothing", to 6 "read two hours or more". The median was 2, which represents 15 minutes of extensive reading everyday on the demographic information section of the questionnaire. When the frequency of the extensive reading item was examined, the majority of the participants either did not spend any time reading outside materials in English, or spent 15 minutes or less on such a task. Only a small number of students (14 %) spent more than half an hour reading outside materials in English, as shown in Table 22.

Table 22: Amount of Time Spent on Extensive Reading

Amount of Time	Frequency	Percent	Cumulative Percent
Nothing	78	34.5	34.7
15 minutes or less	71	31.4	66.2
30 minutes	44	19.5	85.8
An hour	18	8.0	93.8
From an hour to 2 hours	8	3.5	97.3
2 hours or more	6	2.7	100.0

To explore the relationship between the amount of extensive reading and the main variables of the study, the correlations between these variables were calculated. No correlation was found between the amount of extensive reading and either reading comprehension ability or vocabulary knowledge at the 2000 words level. However, a significant moderate correlation was found between the amount of extensive reading and the overall reported strategy use, $rho = .30$, $p < .001$. Significant but weak to moderate correlations were also found between the amount of extensive reading and the different types of reading strategies, global, $rho = .25$, $p < .001$, problem-solving, $rho = .23$, $p <$

.001, and support, *rho* = .31, $p < .001$. To confirm this relationship, the one-way analysis of variance ANOVA was conducted to examine differences between the extensive reading groups in their use of reading strategies. Because of the small number of students who devoted two hours or more to extensive reading, the two groups were recoded as one group. The ANOVA was significant $F(4, 220) = 4.36, p = .002$. A post-hoc Scheffe test showed significant differences favoring the extensive reading groups between the no-extensive-reading group and the group that read for two hours or more. No significant differences were found among the other groups. Also, no significant gender differences were found in the amount of reported extensive reading.

Beliefs about vocabulary in language learning

The participants in the current study were asked to rank vocabulary and three other language components, grammar, spelling, and pronunciation according to their importance to language learning. The participants' rankings of vocabulary in terms of its importance to language learning are reported in Table 23. Six participants did not respond to this question. Analysis of ranking frequency showed that the most important component in language learning is perceived to be vocabulary for 42%, spelling for 28%, pronunciation for 15%, and grammar for 13 % of the participants. The frequency statistics also showed that about 73% of the participants either regard vocabulary as the most important or the second most important component of language learning. There was no relationship between participants' perceptions of the importance of vocabulary and reading comprehension or reading strategies. However, a significant but weak correlation was found between these perceptions and vocabulary knowledge at the 2000 words level, $r = .181, p < .007$.

Table 23: Participant's Perceptions of Vocabulary Importance in Language Learning

Vocabulary Ranking	Frequency	Percent	Cumulative Percent
1	92	41.8	41.8
2	69	31.3	73.2
3	45	20.4	93.6
4	14	6.4	100.0

Perceived Language Proficiency

Descriptive statistics of the participants' self-rated English language proficiency showed a normal distribution with a mean of self-rated proficiency of 3.66 and a standard deviation of 1.33, which almost represents, according to the scales provided in the survey, "above average" language proficiency. The perceived proficiency scale has 6 points, with 1 representing "poor English proficiency" and 6 representing "excellent language proficiency". Although the participants' perceptions of their language proficiency were normally distributed on all levels of the proficiency scale, as shown in Table 24, this did not correlate strongly with other objective tests in the study.

The perceived English proficiency had a weak to moderate correlation with reading comprehension scores, $r = .34$, $p < .001$, vocabulary size at 2000 words, $r = .41$, $p < .001$, and overall reading strategy use, $r = .36$, $p < .001$. Although the relationship between self-rated English proficiency and reported reading strategy use is only moderate, it suggests that language proficiency may have some influence on the way students use reading strategies. However, self-rated language proficiency did not correlate strongly with the scores on the reading or the vocabulary test. The cross-tabulation analysis showed that only 43% of those who rated themselves to have "very good" and "excellent" language proficiency were in the high reading group.

Table 24: Frequency Statistics of Perceived Language Proficiency

Perceived Proficiency level	Frequency	Percent	Cumulative Percent
Poor	7	3.1	3.1
Below average	39	17.3	20.5
Average	66	29.2	50.0
Above average	47	20.8	71.0
Very good	41	18.1	89.3
Excellent	24	10.6	100.0

Perceived Vocabulary Knowledge

Descriptive statistics of the participants' perceived vocabulary knowledge showed a normal distribution, as shown in Table 25. The overall mean was of 3.58 with a standard deviation of 1.26. This mean represents something between average and above average level of vocabulary knowledge. The participants' perceived vocabulary knowledge had a significant strong correlation $r = .76, p < .001$ with their perceived English proficiency. However, perceived vocabulary knowledge had a significant but moderate correlation with reading comprehension $r = 36, p < .001$, vocabulary size at the 2000 words, $r = .36, p < .001$, and overall reading strategy use, $r = .32, p < .001$. This indicates that perceived vocabulary knowledge and objective vocabulary knowledge vary in different ways for the same group of participants.

Table 25: Frequency Statistics of Perceived Vocabulary Knowledge

Perceived Vocabulary knowledge	Frequency	Percent	Cumulative Percent
Poor	8	3.5	3.6
Below Average	35	15.5	19.1
Average	78	34.5	53.8
Above Average	42	18.6	72.4
Very Good	47	20.8	93.3
Excellent	15	6.6	100.0

Cross-tabulation analysis showed that only 40% of those who rated themselves to have "very good" and "excellent" vocabulary knowledge were in the high vocabulary group.

These findings as well as the finings pertinent to self-rated language proficiency indicate that self-rating of language proficiency and other related constructs are not compatible with more objective and relevant measures.

Major Findings

In this chapter, I attempted to conduct all the analyses needed to address the five research questions. Some major findings emerged from the different analyses. I will conclude this section by listing some of these major findings.

1. EFL learners in Saudi Arabia are aware of almost all the reading strategies examined in the current study and perceive using most of them with either high or moderate frequencies. Four strategies were perceived to be used with low frequency among Saudi EFL learners. These strategies include using critical reading techniques like evaluating information in the text, summarizing text to improve comprehension, using typographical aids in the text, and checking text characteristics.
2. EFL learners in Saudi Arabia showed significantly more perceived use of problem-solving strategies than global or support strategies.
3. Although they showed general awareness of the reading strategies examined in the current study, some EFL learners do not use or use only rarely some of the reading strategies associated with skilled readers such as having a purpose in reading.
4. The estimated vocabulary size of Saudi EFL first-year university students is rather small. The vocabulary test at the 2000 and 3000 word levels estimated the learners' average vocabulary size to be approximately between 500 to 700 words.

The learners' academic vocabulary size was also low, estimated to be around 75 academic vocabulary items. Technical students have an even smaller vocabulary size on the 2000 word level.

5. The reading comprehension level of Saudi EFL first-year university students was also low. On average, the participants were only able to answer 6 of the 20 questions on the reading comprehension test correctly. The learners' performance on scanning and skimming questions was better than their performance on questions whose answers require guessing words' meaning from context and inferencing.
6. A significant and strong relationship ($r = .60, p < .001$) was found between EFL learners' reading comprehension ability and vocabulary size. High and low reading and vocabulary proficiency groups differed significantly in their reported reading strategies. The different groups perceived using these strategies with significantly different frequencies. These findings lend support to the recognized impact of target language proficiency, especially that of vocabulary knowledge, on reading and reading strategy use.
7. Gender differences favoring female learners were evident in almost all analyses conducted in the current study. Not only did male and female EFL learners differ in their perceived use of reading strategies, but they also had significantly different reading comprehension abilities and vocabulary sizes.
8. The majority of EFL learners in Saudi Arabia do not voluntarily read English materials out of class.

9. Saudi EFL learners regarded vocabulary as one of the most important factors in language learning.
10. EFL learner's self-rated language proficiency correlated highly and significantly with their self-rated vocabulary knowledge ($r = .76$, $p < .001$). However, the two self-rated measures correlated only weakly with the objective counterpart measures of reading ($r = .34$, $p < .001$) and vocabulary ($r = .36$, $p < .001$).

In the following section, I discuss these findings in light of the purpose of the current study.

Chapter V

Discussion

The previous chapter presented some interesting findings about different aspects of EFL reading in Saudi Arabia. In this section, I discuss the findings of the current study as they pertain to major issues and variables. These include Saudi EFL learner perceived reading strategies, vocabulary size, reading comprehension ability, and the relationship between these three variables. Major issues also include gender differences, extensive reading, learner beliefs about vocabulary, and self-rated language proficiency and vocabulary knowledge. Based on this discussion, some pedagogical implications of the descriptive data on perceived reading strategies, vocabulary size, and reading comprehension, and the relationship between these variables are presented. This section is followed by some recommendations for further research, and the limitations of the current investigation. Finally, the research conclusion is presented.

Perceived Reading Strategies

1. EFL learners in Saudi Arabia are aware of almost all the reading strategies examined in the current study and perceive using most of them with either high or moderate frequencies. Four strategies were perceived to be used with low frequency among Saudi EFL learners. These strategies include using critical reading techniques like evaluating information in the text, summarizing text to improve comprehension, using typographical aids in the text, and checking text characteristics.
2. EFL learners in Saudi Arabia showed significantly more perceived use of problem-solving strategies than global or support strategies.

3. Although they showed general awareness of the reading strategies examined in the current study, some EFL learners do not use or use only rarely some of the reading strategies associated with skilled readers such as having a purpose in reading.

An examination of the perceived use of reading strategies among EFL first-year university students in Saudi Arabia showed, overall, the perceived use of these strategies to be somewhat high (M=3.80), i.e., above 3 on the frequency scale of perceived use which stands for using the strategy "sometimes", and close to 4 which represents using the strategy "often" . Looking at the means of individual strategies gives the impression that EFL learners in Saudi Arabia are strategic readers. They perceived using 15 reading strategies with high frequency and 17 strategies with moderate frequency. Only 4 strategies fall in the low usage range. However, when the frequency of perceived use of individual strategies was examined, some essential strategies were found to be under-used. If confirmed through more reliable measures like think aloud techniques, those students may have the advantage of using a large combination of reading strategies which sometimes result in more effective use of these strategies than using a limited number of strategies.

When the means of the subscales of the survey were examined, the participants showed a greater use of problem-solving strategies. This is consistent with studies that report on perceived actual reading strategy use (Willcut, 2002). It is also consistent with the results of MARSI (Mokhtari and Reichard, 2002) and SORS (Sheorey & Mokhtari, 2001) administrations to both adult and young learners as well as native and nonnative speakers of English. This finding is understandable by the fact that problem-solving

strategies are direct and localized strategies whose use does not put a lot of demand on the reader. For the implementation of such cognitive strategies, readers only need their minds to interact with the text and respond to comprehension problems. A strategy like rereading a certain part of the text or adjusting reading speed may only take the reader to decide to use these strategies. In other words, the reader may only need her mind as a resource to use a problem-solving strategy while the use of global and support strategies may be more demanding.

This finding indicates that not all reading strategies are perceived to be used with comparable frequencies. Constructing wordlists of new words encountered in the text, for example, is a support strategy frequently used by low reading proficiency students to build up their vocabulary. Because of the small number of new words usually encountered, good readers may not resort to this strategy as frequently as readers with limited vocabulary knowledge. As for global strategies, their less frequent perceived use could be attributed to the overall low level of language proficiency among the participants. High proficiency students are usually reported to use more global strategies (Mokhtari & Reichard, 2002; Sheorey & Mokhtari, 2001). In fact, the current study shows that the difference in the means of perceived use of global and problem-solving strategies is similar for high and low reading proficiency students. The main reason for this difference seems to lie in the high reading proficiency students' more frequent use of both types of strategies.

Moreover, global strategies are mainly top-down strategies that require a good mastery of bottom-up processes like identifying and recognizing words and comprehending syntactic structures in order for them to operate and function. For

example, a global strategy like "evaluating what is read" is a critical reading strategy that requires reading beyond the lines of the text. If the reader is struggling to comprehend the lines, she or he does not have the capacity to evaluate and question the information and the ideas in the text. In both the pilot and current study, this critical reading strategy was reported to be used with low frequency (M= 2.65). The majority of the participants perceived themselves to either never or rarely use this strategy.

The reason given here may apply to most strategies falling in the lower perceived use range such as "summarizing texts for better comprehension" and "checking text characteristics, i.e., length, organization, etc." The support reading strategy of summarizing texts is one of the late developing reading strategies that require quite an advanced level of linguistic proficiency. Given the participants' poor vocabulary knowledge, EFL reading teachers may choose not to use such cognitively demanding activity. As for the global reading strategy of "checking text characteristics," readers who expect themselves to stumble over several words in the first line of the text, may not think of using this global strategy. Such readers are usually bound to decoding individual words, which renders examining the text as a whole an unworkable strategy.

One reading strategy that was also perceived to be used with very low frequency is the use of typographical aids (M= 2.67) like italicized words and phrases and words written in bold letters. These aids are usually used to draw the reader's attention to key words and concepts. Two possible reasons may explain such an unexpected finding. First, the participants' limited experience with English texts might not have been broad enough to allow the use of such a strategy. They might have also been limited to textbooks that do not make use of such typographical aids. Second, these kinds of aids

are not so commonly used in Arabic, the participants' first language. Thus, first language interference could have caused the participants to overlook such typographical aids. Except for this strategy, I suspect that the low perceived use of the other strategies falling in the low frequency category could well be attributed to lower language proficiency in general, and poor vocabulary knowledge in particular.

The general trend of high reported strategy use sometimes hides the fact that some important strategies are either not used or used only rarely. Although a quick look at the mean of perceived strategy use would show EFL learners in Saudi Arabia to have a good level of reading strategies awareness, a closer examination of individual strategies may prove otherwise. Some of the examined strategies may require constant use, while others may only be needed with certain texts or upon having a particular problem in comprehension. The strategy of setting or having a purpose in reading, for example, appeared to be one of the strategies reported to be used with high frequency in the current study. However, examining the perceived frequency with which this strategy was used revealed that 5 % of the participants never used it, 8 % rarely used it, and 25 % used it only sometimes. These statistics show that about 38% of the participants are either unaware of this strategy or unaware of its importance. Only 26 % of the participants perceived using this strategy constantly. A majority of those students belongs to the higher reading proficiency group.

Some reading researchers consider *having a purpose in reading* to promote comprehension by promoting the use of several reading strategies (Blanton & Wood, 1991), and to influence incidental learning of vocabulary (Swanborn & Glopper, 2002). The results of the current study showed that those who lacked a purpose in reading were

usually low and medium proficiency students (Table 13). Students at this level of proficiency would certainly need specific instruction and activities in order to raise their awareness of the importance of this strategy. Reading teachers and program developers in Saudi Arabia, therefore, need to introduce and present reading materials in a way that emphasizes purposeful reading. Some information gap exercises may also help in this regard. As an EFL student in Saudi Arabia, I remember the main purpose of reading English texts to be linguistic, i.e., to learn more English words and structures. I also think that this is how most beginning and intermediate ESL and EFL learners view reading materials and assignments in their language learning programs. However, for other strategies to operate, the students' encounter with reading texts and other language activities should be transactional, i.e., readers can do something with the information from the text.

Vocabulary Size

4. The estimated vocabulary size of Saudi EFL first-year university students is rather small. The vocabulary test at the 2000 and 3000 word levels estimated the learners' average vocabulary size to be approximately between 500 to 700 words. The learners' academic vocabulary size was also low, estimated to be around 75 academic vocabulary items. Technical students have an even smaller vocabulary size on the 2000 word level.

Scores on the vocabulary size test suggest that Saudi EFL university students in the sample of the current study are far below the vocabulary size usually required for reading academic English materials. An average estimated vocabulary size that is between 500 and 700 words is not even close to the 3000 words usually required for

reading academic English texts (Laufer, 1997). This finding suggests that Saudi EFL learners, on average, learn only 100 words a year throughout their six years of EFL education at intermediate and secondary schools. Those who might have gone through this educational system would most probably agree with this estimate.

To understand the seriousness of this problem, it is important to note that I have never come across any study that has estimated university EFL learners' vocabulary size to be this small. The seriousness of the Saudi situation will be clearer if we look at estimates of vocabulary size of EFL university learners in other parts of the world. Although they did not use a receptive vocabulary test, Nurweni and Read (1998) found the average vocabulary size of EFL first-year university students in Indonesia to be 1226 English Words. This vocabulary size is double the average vocabulary size of the Saudi EFL university students in the current study. However, the researchers suggested that the vocabulary size of Indonesian students is far below the widely recognized threshold (3000-5000) for reading unsimplified English texts. In a study of female EFL first and second year university students' receptive and productive vocabulary size, Waring (1997) found Japanese students to get 14.62 of the 18 items on the 3000 level of the receptive test correct. Confirmed by the students' performance on the 1000 and the 2000 word levels of the test, Japanese EFL first and second-year university students seem to know more than 2500 words.

The current study also shows the mean vocabulary size at the 2000 word level for technical students (n=31) to be 4.9. This suggests that they only knew 5 words of the 30 words tested in the 2000 word level. Because of the small number of technical students in the current study, their low scores on the vocabulary test did not affect the mean of the

whole group. It is important to note, however, that technical students' vocabulary size is almost half of that of the whole group. This suggests that the participants in the current investigation represent the best EFL proficiency outcome among high school graduates in Saudi Arabia. No wonder they were admitted to English programs. This may also suggest that the average vocabulary size for all EFL students who just graduated from high school is smaller than that found in the current study.

This finding has serious implications for EFL university programs in Saudi Arabia. In some of these universities, admitted students need to attend an intensive English course before they are matriculated in the mainstream English program. However, the learners' problems with vocabulary knowledge may not be adequately solved in one semester even if it has an objective of increasing the students' vocabulary by 1000 words, something that may not be even feasible. This should be a major concern for all university English programs in Saudi Arabia. After all, these are English programs where more than 90% of classroom instruction is in English. If students are admitted with low vocabulary size and the problem persists throughout their academic programs, or is solved only partially, students may graduate with lower than the expected qualifications. I think that an insufficient vocabulary size will not only affect reading ability but also other productive language skills like speaking and writing.

The preceding discussion not only shows that Saudi EFL learners' vocabulary knowledge is inadequate for reading English texts at the university level, but also indicates that Saudi students do not acquire the size of vocabulary that EFL students in other parts of the world seem to acquire before enrolling in university programs. This problem is far more complicated than can be solved by orientation and intensive English

courses. Dealing with the vocabulary problem should start at the intermediate and high school level. Such EFL programs should strongly emphasize vocabulary learning and vocabulary instruction that are supplemented with the appropriate reading materials. These programs should be practical, and therefore, work on increasing EFL learners' vocabulary size to at least a 1200-word range. This would mean learning 200 vocabulary items a year. Appropriate reading materials, like graded readers, could be utilized to achieve this objective. National standards may also be put in place to ensure that Saudi students leave high school with such a vocabulary size.

The same procedure should be considered in intensive English programs. However, vocabulary instruction at this level should be supplemented with large amounts of extensive reading. An important objective of all intensive English courses in Saudi universities should be to equip their students with the 2000 most common words in English. The first two years of university education should also emphasize language instruction, especially vocabulary and reading instruction. Following these tentative plans would certainly increase EFL learners' vocabulary size. Even if the threshold of 3000 words is not precisely reached upon matriculation in mainstream programs, EFL learners will not be far below the desired level. Students may then be able to work individually on minor vocabulary deficiencies.

Reading Comprehension Ability

5. The reading comprehension level of Saudi EFL first-year university students was also low. On average, the participants were only able to answer 6 of the 20 questions on the reading comprehension test correctly. The learners' performance on scanning and skimming questions was better than their performance on

questions whose answers require guessing words' meaning from context and inferencing.

The participants' overall performance on the reading comprehension test was low. These results were not surprising. They were basically reflective of the EFL learners' vocabulary knowledge. Although overall performance on the reading test was low, the students' scanning and skimming abilities were significantly better than their guessing and inferencing abilities. I consider this finding an indication of the student's poor vocabulary size. When the question requires superficial reading or looking for specific information, the students' performance seems to be relatively better. However, when the question requires a deeper understanding of the surrounding context or producing answers that are based on general understanding of the text or certain parts of it, the students' performance was relatively poorer. The participants' vocabulary knowledge seems to be a major obstacle when it comes to responding to guessing from context and inferencing questions. This is even clear in the participants' poor performance on some of the scanning questions whose answers may not require mere word matching.

The different parts of the reading test correlated significantly and strongly with overall reading comprehension scores (Table 8), which shows that students' performance on both easy and difficult questions on the test were indicative of their overall reading ability. To examine the relationship between reading comprehension and the other important variables in the current study, the participants' overall scores on the reading test were used to divide the participants into three reading proficiency groups (Table 9). This was done to check differences between good and poor readers in their vocabulary

knowledge, and to examine the reading strategies profiles of the different reading proficiency groups.

The Relationship between Vocabulary Size, Reading Strategies, and Reading Comprehension

6. A significant and strong relationship (r = .60, p <. 001) was found between EFL learners' reading comprehension ability and vocabulary size. High and low reading and vocabulary proficiency groups differed significantly in their reported reading strategies. The different groups perceive using these strategies with significantly different frequencies. These findings lend support to the recognized impact of target language proficiency, especially that of vocabulary knowledge, on reading and reading strategy use.

The results of the current study show some interesting relationships between the study's three main variables, namely vocabulary size, reading strategies and reading comprehension of EFL learners in Saudi Arabia. In this section, I discuss the relationship between vocabulary size and reading comprehension, reading strategies and reading comprehension, and vocabulary size and reading strategies.

Vocabulary Size and Reading Comprehension

When the relationship between vocabulary knowledge and reading comprehension was examined, a significant strong correlation (r = .60, p< .001) was found between overall reading comprehension scores and the 2000 word vocabulary level. This is consistent with Laufer's extensive research on this relationship which suggests the correlation between vocabulary knowledge and reading comprehension to be between .50 and .75.

Vocabulary scores on the 3000 word level correlated moderately with reading scores, and scores on the academic vocabulary level correlated only weakly with reading. However, the strong correlation found between reading and vocabulary size at the 2000 word level indicates that 36% of the variance in the participants' reading scores is accounted for by their performance on the vocabulary size test at the 2000 word level. This shows beyond any doubt the important role of vocabulary knowledge in reading comprehension. The role of vocabulary is even more important in academic EFL contexts where readers may learn the spoken and written forms of vocabulary items at the same time. Thus, if the first and most important step towards fluent reading, i.e., expanding EFL readers' vocabulary knowledge, is not taken, they may continue to be poor readers, and consequently poor language learners.

To examine this relationship from another perspective, the difference between good and poor readers in their vocabulary knowledge was examined. Significant differences favoring good readers were found in all levels of the vocabulary size test (Table 10). The mean difference between the two groups at the 2000 word level was (8.09) suggesting that good readers knew almost twice as much vocabulary as poor readers. The mean differences between the two reading proficiency groups was much smaller for the 3000 and academic word levels, which indicates that the participants' performance deteriorates as the vocabulary size tested gets larger or becomes more specific. Although the vocabulary size of the whole group is small, significant differences between good and poor readers in vocabulary knowledge were evident.

Reading Comprehension and Reading strategies

When the reading strategies perceived to be used by the three reading proficiency groups were examined, some interesting patterns of perceived strategy use were observed. For overall perceived reading strategies, the high reading proficiency group perceived using reading strategies significantly more frequently than the middle and low groups. No significant differences between the middle and the low group were found. This pattern was consistent with the participants' perceptions of their use of global and problem solving strategies. Although the overall perceived use of problem solving strategies was generally high as discussed under the reading strategies of EFL learners earlier, the high proficiency group perceived using these strategies significantly more frequently.

The participants' perceived use of support strategies reveals an interesting pattern. The low reading proficiency group perceived using support strategies more frequently than the middle group, and less frequently than the high group. No significant differences in reported support strategies were found between the lower group and the other two proficiency groups (Table 13). However, significant differences between the high and middle group in their perceived use of support strategies were found. This finding indicates that the low reading proficiency students may realize their inadequate vocabulary knowledge and other related reading skills, and therefore, rely more heavily on support strategies to compensate for such linguistic deficiencies or perhaps to develop appropriate linguistic skills and expand their vocabulary knowledge. This is consistent with Sheorey & Mokhtari's (2001) contention that ESL students "attribute high value to support strategies" at all levels of language proficiency (p. 431). This absence of

significant differences between the high and low reading proficiency groups in their perceived use of support strategies could be also attributed to the popularity of certain strategies among the participants in each proficiency group. For example, the low reading proficiency group showed more frequent use of support strategies like *making wordlists of unknown words in the text* and *taking notes while reading a text* while the high reading proficiency group used strategies like *finding relations between the different parts of the text, paraphrasing*, and *summarizing* more frequently. However, these insignificant differences between the high and low reading groups found in their perceived use of support strategies should not undermine the fact that the most frequent use of support strategies was reported by the high reading proficiency group.

An examination of the means of perceived use of the different types of reading strategies in general, and support strategies in particular, seems to indicate that the participants in the current study perceive using an appropriate combination of reading strategies. The only impediment to optimal use of these strategies seems to lie in the participants' poor linguistic proficiency. Relatively speaking, the current study shows clearly that more proficient readers perceived themselves as more frequent users of global, problem solving and support reading strategies. The study also shows that readers of lower proficiency may be willing to use most of the strategies but are sometimes limited by their linguistic and reading abilities.

The participants' linguistic deficiency seems to impact both their performance on the reading test and their implementation of some useful reading strategies. For example, the participants in the current study perceived using the strategy of "using context clues" very frequently. However, the participants' performance on the guessing questions in the

reading test was very poor. Also, the participants' performance on questions requiring skimming skills did not correlate with their reported use of the skimming strategy. Except for a weak correlation with the strategy of *guessing the topic of a text*, the participants' performance on inferencing questions did not correlate with any relevant strategy. This may suggest the absence of any strong relationship between reporting the use of a certain reading strategy and the successful application of that strategy. This observation may be attributed to the participants' general low level of reading and language proficiency. The participants do not have the vocabulary knowledge that would allow them to skim, make inferences, or guess correctly from context. According to Laufer (1997), 95 % of the vocabulary in the text needs to be known by the reader for successful guessing from context to take place. It is unfortunate that Saudi EFL learners are aware of the most useful reading strategies but cannot use them or use them unsuccessfully because of their limited vocabulary knowledge.

Although the level of language and reading proficiency is evident in the participants' reported use of reading strategies, this impact is not consistent with all reading strategies examined in the current study. An examination of some important reading strategies discussed in Chapter II shows that high and low reading proficiency students differ in their perceived use of two of these strategies only (Table 13). No significant differences were found in the two groups' perceived use of critical reading, summarizing, and using context clues strategies. The high and low reading proficiency groups' comparable reported use of these strategies indicates that language proficiency may not be the only factor operating in the use of certain reading strategies. This may lead to the conclusion that EFL learners in Saudi Arabia may need instruction on some

important reading strategies like *critical reading, summarizing*, and *using context clues* strategies whose use may well improve reading comprehension. This may also suggest that ESL/EFL learners may need reading strategy training at all levels of language proficiency. However, the focus and type of reading strategy instruction may differ from one level of reading proficiency to another.

Vocabulary size and Reading strategies

The relationship between vocabulary size and reading strategies should be clear by now. The strong relationship between vocabulary knowledge and reading comprehension as well as the substantial impact of reading ability on the patterns of perceived reading strategies were all presented and discussed in the current study. However, to make the relationship between vocabulary knowledge and reading strategies more salient, the participants were divided into three vocabulary proficiency groups according to their scores on the 2000 word level of the vocabulary test. Significant differences favoring groups with larger vocabulary size were found between the low group and the other groups in their perceived reading strategies. No significant differences were found between the middle and high group. This pattern was consistent when the three vocabulary proficiency groups' perceived use of global, problem-solving, and support strategies were examined (Table 16). This consistency clearly shows the substantial impact of vocabulary knowledge on perceived reading strategy use. If this impact can be clearly seen in the current investigation, I suspect that the impact of vocabulary knowledge will be even greater on actual use of reading strategies.

To conclude this discussion on the relationship between vocabulary size, reading strategies, and reading comprehension, the three variables were found to have a strong

reciprocal relationship with one another. Extensive vocabulary knowledge seems to trigger successful use of appropriate reading strategies, which in turn results in better reading comprehension. Unfortunately, the current study shows that EFL learners in Saudi Arabia have insufficient vocabulary knowledge, which negatively impacts all the other variables in this relationship. Thus, working on extending the vocabulary size of EFL learners should be considered one of the major priorities of EFL education in Saudi Arabia.

Gender Differences

7. Gender differences favoring female learners were evident in almost all analyses conducted in the current study. Not only did male and female EFL learners differ in their reported use of reading strategies, but they also had significantly different reading comprehension abilities and vocabulary sizes.

The analysis of gender differences in perceived reading strategies use, vocabulary knowledge, and reading comprehension showed significant differences between male and female EFL learners in Saudi Arabia. Significant gender differences favoring females were found in the participants' performance on the reading test. Female learners outperformed males on all the different types of reading comprehension questions. Except for the guessing from context questions, gender differences were significant for the other types of reading comprehension questions, i.e., scanning, skimming, and inferencing. On average, female learners were able to answer two more reading comprehension questions correctly on the reading comprehension test than did male learners.

The results of the reading comprehension test were consistent with female learners' performance on the vocabulary size test. The mean score for female learners was 12.48 while it was only 7.77 for males on the 2000 word level of the vocabulary test. Confirmed by the participants' performance on the 3000 word level, female EFL learners in Saudi Arabia are estimated to know (200-300) more word families than males. Judging by the standard deviations from the means, female learners had larger variation in their scores in all levels of the vocabulary test. This indicates that although females may generally know more vocabulary, the female group comprises students with small and large vocabulary sizes. Although female learners were found to know approximately 18 more academic vocabulary items, no significant gender differences were found in the participants' knowledge of academic vocabulary. This finding supports Nation's (2001) contention that L2 learners usually do not know most of this specialized academic vocabulary.

Significant gender differences were also found in the participants' perceived use of reading strategies. Using the means of overall perceived use of reading strategies, females perceived using these strategies significantly more frequently than males. Moreover, females' perceived use of all three types of reading strategies was significantly higher than that of male learners. When gender difference in the use of individual strategies was examined, 13 strategies showed significant gender differences favoring female learners (Table 20). Some of these strategies, such as *setting a purpose in reading, adjusting reading speed, discussing the information in the text with others, paying closer attention, finding relation between the parts of the text, rereading, and*

guessing the topic of the reading text, are crucial strategies to the development of reading skills.

Slight and insignificant differences favoring male learners were found in their perceived use of only two related strategies, *looking for main ideas*, and *distinguishing between main and supporting ideas.* This finding is consistent with that of the pilot study, which showed male learners to use the strategy "looking for main ideas" more frequently than females. In the current study, this difference is not statistically significant. However, I think it is interesting to find related strategies that would break the pattern of females perceiving more frequent use of almost all reading strategies examined here. Although these two strategies are useful reading strategies, their frequent use may suggest that male learners seem not to enjoy the reading task and usually want to reach to the gist of the reading as quickly as they can. This is supported by male learners' less frequent use of strategies like rereading, adjusting reading speed, paying closer attention, and discussing reading with others to check comprehension. Thus, I would think that focusing more on just these two strategies may not show these learners to be generally more strategic readers.

Apart from these significant differences, the means of perceived reading strategy use among female EFL learners were higher than those of males for 34 of the 36 reading strategies examined in the current study. Since these significant differences are supported by significant differences in vocabulary knowledge and reading comprehension, there is no way to regard them as mere exaggerations on the part of female learners in reporting their perceived use of reading strategies. This finding is also consistent with the literature on learning and reading strategies (Politzer, 1983; Green and

Oxford, 1995; Young & Oxford, 1997; Sheorey & Mokhtari, 2001). Thus, the current study supports the common tendency that female L2 learners are more strategic learners than male learners.

Female learners' larger vocabulary size and better reading ability could be well attributed to the possible extra reading they do. About 63% of those who spent more than one hour reading outside materials in English are females. From their perceived use of reading strategies, female learners seem also to enjoy reading and reading tasks, and therefore, implement appropriate reading strategies more frequently. This may be also attributed to individual factors that encourage females to make more use of EFL instruction and put more effort in language learning to win parents' and/or teachers' satisfaction and social approval. However, investigating the reasons behind Saudi female EFL learners' larger vocabulary size and better reading comprehension ability needs to be the subject of a more focused investigation.

Extensive Reading

8. The majority of EFL learners in Saudi Arabia do not voluntarily read English materials out of class.

For its reciprocal relationship with vocabulary acquisition, a question about the amount of reading outside English materials was posed to the participants in the current study. Although the mean of reported time spent on reading outside English materials was 15 minutes, the mean was not representative of the real situation with regard to extensive reading. This mean of extensive reading seems to be the result of some students reporting spending more than one hour on outside reading while a large number of the participants reported spending nothing. When the frequency of the time spent on

this activity was examined, it was found that 35% of the participants do not read any English materials outside the classroom. Another 31% read up to 15 minutes a day. Some of the participants were also honest enough to write the phrase "not everyday" in Arabic next to their choice of the amount of time they spent on extensive reading.

Since a large number of the participants either do not read outside English materials or read them inconsistently for short periods of time, no correlation was found between the time spent on extensive reading and the participants' scores on both the vocabulary and reading tests. No significant gender differences were found in the amount of time spent on extensive reading. Female learners, however, reported spending slightly more time reading outside materials in English. This indicates that EFL learners in Saudi Arabia generally do not spend sufficient time reading English materials outside class either to improve their reading ability or for pleasure.

However, a significant moderate correlation ($rho = .30$, $p < .001$) was found between the amount of extensive reading and the participants' overall perceived use of reading strategies. Also, significant weak to moderate correlations were found between the different types of reading strategies; global, problem solving, and support strategies and the amount of time spent on extensive reading. Interestingly enough, the data of the current investigation shows consistently that the more time the participants report spending on reading outside materials, the higher their overall means of perceived strategy use. In addition to its recognized role in increasing one's vocabulary size through incidental vocabulary learning, the current study also suggests that more exposure to English texts may well help L2 readers develop appropriate use of reading strategies. Thus, interesting reading materials should be introduced early in any

ESL/EFL program to reinforce vocabulary instruction and develop general reading skills. Overlooking such an important activity in EFL programs in Saudi Arabia might have restricted the learners' experience with EFL reading to the limited classroom time.

Learner Beliefs about Vocabulary

9. Saudi EFL learners regarded vocabulary as one of the most important factors in language learning.

In order to understand the reasons behind the participants' poor vocabulary knowledge, I explored the learner perceptions about the importance of vocabulary in learning English as a foreign language. This was elicited through an item on the background questionnaire that asked the participants to rank four components of the language, namely, vocabulary, grammar, spelling, and pronunciation according to their importance in learning a foreign language. The largest group of participants, about 42%, ranked vocabulary as the most important component in learning a foreign language. Another 31% ranked vocabulary as the second most important. This indicates that about 73% of the participants regard vocabulary either as the most important or the second most important component in learning a foreign language. These findings show clearly that Saudi EFL learners believe that vocabulary is one of the most important factors in learning another language.

The previous discussion suggests that Saudi EFL learners, like other L2 learners, believe that they need a good EFL vocabulary to succeed in their EFL language learning. This belief is very important to the discussion of improving and expanding EFL learners' vocabulary knowledge, which may result in positive attitudes and motivation on the part of Saudi EFL students to learn more vocabulary and respond to vocabulary instruction.

Therefore, I believe that focusing on vocabulary instruction at secondary and university educational levels would result in higher levels of learners' satisfaction, which may result in higher reading and language achievement.

Self-rated Language Proficiency and Vocabulary Knowledge

10. EFL learner's self-rated language proficiency correlated highly and significantly with their self-rated vocabulary knowledge ($r = .76, p < .001$). However, the two self-rated measures correlated only weakly with the objective counterpart measures of reading ($r = .34, p < .001$) and vocabulary ($r = .36, p < .001$).

The participants' judgments and self-ratings of their vocabulary knowledge and language proficiency correlated significantly and strongly with each other ($r = .76, p < .001$). This may indicate that EFL learners think of their vocabulary knowledge as a reflection of their language proficiency. In fact, self-rated language proficiency showed slightly more correlation with vocabulary size at the 2000 word level than self-rated vocabulary knowledge. These findings indirectly show that EFL learners in Saudi Arabia think of their vocabulary knowledge and EFL proficiency in similar ways.

Looking at the participants' self-rated vocabulary knowledge and their performance on the 2000 word level of the vocabulary test has led to the emergence of an interesting observation. Both self-rated language proficiency and vocabulary knowledge had weak correlations with vocabulary size. Given the general low performance on the vocabulary test, this shows that the participants' perceptions of their vocabulary knowledge were not even close to their real performance on objective vocabulary and reading measures. This finding may alert L2 researchers in general, and EFL researchers in Saudi Arabia in particular, against using self-rated proficiency as a valid measure of

language proficiency or any other related constructs. Using such self-rated language proficiencies may render research conclusions and findings invalid.

The findings of the current study have serious implications for EFL teaching in Saudi Arabia and other EFL and ESL comparable contexts. The poor vocabulary knowledge and reading comprehension ability of Saudi high school graduates already admitted to university English programs need serious consideration by language educators and program developers at both the Ministry of Education and the Ministry of Higher Education in Saudi Arabia. In the following section, I present some of the pedagogical implications of the current investigation.

Pedagogical Implications

1. EFL Teachers in Saudi Arabia should be aware of the reading strategies their students use. Using some of the well-established inventories of reading strategies, like the SORS, they should introduce their EFL students to useful reading strategies. As the current study consistently shows, an awareness of these strategies is usually associated with better reading comprehension. Such an awareness may motivate EFL learners and help them be more independent (Paris & Winogard, 1990), which are common objectives of any sound language program.
2. EFL teachers should also provide EFL learners with instruction opportunities to use essential reading strategies like purposeful reading. They need to make the purpose of reading clear to their students. Whenever possible, using task-based instruction, this purpose should be informational (Long & Crookes, 1992), i.e., students read to do something with the information in the text. EFL teachers may

also use online reading materials and electronic texts that may emphasize the concept of purpose for the readers. Again, pre-reading instruction and activities should be targeted at promoting purposeful reading. EFL learners should always read for something other than learning linguistic aspects of the foreign language.

3. The current vocabulary knowledge of EFL learners in Saudi Arabia necessitates direct instruction of vocabulary. EFL teachers should emphasize vocabulary learning at all levels. This may not mean that vocabulary should be the only focus of language instruction. However, given the impact of vocabulary knowledge on other language skills, vocabulary instruction should receive most attention, especially at early stages. All possible vocabulary learning techniques and materials including graded readers, wordlists, vocabulary cards, definitions, and all pedagogically sound vocabulary activities should be efficiently utilized to expand EFL learners' vocabulary size as early as possible in their EFL education. Delaying grammatical and discourse instruction or reducing them until EFL learners acquire the basic vocabulary may result in their absorbing such instruction in a faster and more inductive way.
4. Developing extensive reading skills should be the objective of all EFL programs in Saudi Arabia. I would like to recommend here using graded readers as reading materials that have a vocabulary focus, like the Oxford Bookworms series. These graded readers are usually recommended for vocabulary expansion (Nation, 2001). They could be used as serious supplements to the EFL curriculum. These readers are graded according to the size of vocabulary they cover. Intermediate and high school EFL curriculua may use up to level 4 of these series which

usually cover up to 1400 English words. University intensive courses may use reading books from level 5 and 6 of this series which cover up to 2500 words. I believe that incorporating graded readers in the EFL curriculum will satisfy two important instructional objectives; expanding vocabulary knowledge, and providing opportunities for extensive reading.

5. EFL learners' poor knowledge of academic vocabulary shows the need for more focused instruction on frequent academic vocabulary items. To prepare EFL learners for reading academic materials in English, EFL teachers at university intensive courses in Saudi Arabia should introduce EFL university students to academic vocabulary. Given the limited number of academic vocabulary- 570 words in Coxhead's (2000) academic word list- EFL teachers may provide discrete vocabulary instruction on the vocabulary items included on the academic word list. In fact, Coxhead (2000) presented several frequency lists within the academic vocabulary list. The first sixty items on Coxhead's academic word list cover more than 3.6 % of any page in an academic text. This list of highly frequent academic vocabulary includes words like *approach, area, environment, assume,* and *consist.* It is really worth spending the time on instructing EFL learners to acquire such limited and frequent vocabulary. Nation (2001) suggests that knowing the most common 2000 English words and academic vocabulary (e.g., Coxhead list) may provide 90% coverage of academic texts.
6. Although extensive reading is recognized for its role in expanding readers' vocabulary and developing appropriate reading strategies and skills, this important language activity seems neglected among EFL learners admitted to

English programs in Saudi Arabia. Therefore, EFL reading teachers at the university level should educate their students about the role of extensive reading and assign large and balanced amounts of outside readings. Using academic incentives like extra credits, reading teachers can make sure that assigned materials are read in their entirety. Apart from instructing EFL learners on important vocabulary items and the use of certain reading strategies, reading classes should only be spent on intensive reading activities and discussion of extensive reading assignments. Extensive reading is believed to provide students with opportunities to apply the skills and strategies they usually learn from intensive reading instruction (Carrell & Carson, 1997).

Recommendations for Further Research

The findings of the current investigation show the need for more research of EFL reading in Saudi Arabia. In this section, I present some of the issues that need more detailed investigations within the area of EFL reading in Saudi Arabia.

1. The perceived high use of reading strategies shown by EFL learners in Saudi Arabia should by subjected to more qualitative investigations. An awareness of reading strategies may not necessarily mean that Saudi EFL learners know how and when to use these strategies. A replication of the current study using think aloud protocols and interviews in examining the reading strategies of EFL learners will provide important and more accurate details about the different aspects of EFL reading in Saudi Arabia.

2. More quantitative studies should also aim at examining the vocabulary size of EFL learners at the different stages in the educational system. Such investigation will provide objective assessments of the outcome of the different programs in Saudi Arabia. Knowing what those learners need is the first step in fulfilling these needs. Quantitative vocabulary studies are also needed to evaluate the vocabulary knowledge of graduates of English programs. Such investigations will help EFL teachers and program designers at the university level provide their students with the tools they need to succeed in their future career as English teachers, translators, or whatever future job they may assume.
3. The significant gender differences revealed by the current study in most aspects of EFL reading call for more thorough investigation of the reasons behind the superiority of females' vocabulary knowledge and reading comprehension ability. Such investigations may also help educators understand some of the major causes behind the poor vocabulary knowledge and reading ability of EFL male learners. More detailed studies should explore whether these gender differences may be attributed to individual factors or to the way English is taught and learned at female and male institutions in Saudi Arabia.

Limitations of the Study

1. The current study attempted to provide general information on some aspects of EFL reading and vocabulary knowledge in the central region of Saudi Arabia. Although regional academic differences may favor this part

of the country, I do not claim that the findings of the current study are representative of the situation of EFL reading in other regions in Saudi Arabia.

2. The current study provided estimates of the vocabulary size of Saudi EFL learners at the university level. However, it is beyond the scope of the current study to discuss any specific vocabulary acquisition problems that might be experienced by EFL learners in Saudi Arabia.
3. The current study employed quantitative methods in examining EFL learners' perceived use of reading strategies. The findings of the current study, therefore, are not based on any in-depth examination of the reading strategies employed by EFL learners in Saudi Arabia. However, owing to the absence of previous statistics about the learners' vocabulary size and reading comprehension, the current study may pave the way for future qualitative studies, and enhance the understanding of foreign language educators in Saudi Arabia of their students' reading problems and needs.

Conclusion

The current investigation lends support to interactive models of reading in their recognition of the importance of both bottom-up and top-down processes for reading comprehension. Both vocabulary knowledge and reading strategies were found to substantially impact EFL reading comprehension. Thus, the current study supports previous research conclusions about the reciprocal strong relationship between vocabulary knowledge and reading comprehension. It also substantiates the common tendency that skillful readers are generally more strategic readers.

Although they seem to be potentially strategic readers, Saudi EFL learners' vocabulary knowledge is significantly deficient. Their poor vocabulary knowledge was found to negatively impact their reading comprehension ability and limit their choice of useful reading strategies. Therefore, the study suggests that EFL educators in Saudi Arabia focus more on vocabulary instruction that is supplemented with sufficient and balanced extensive reading activities. Based on the significant gender differences revealed, the current study also suggests exploring such differences to better understand Saudi EFL learners' reading problems and address them.

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APPENDICES

APPENDIX A

PILOT SURVEY OF READING STRATGIES

Pilot Survey of Reading Strategies

Statement	Scale					
1. I have a purpose in mind when I read. (e.g., after reading the title and the sub-headings, I ask myself some goal questions which specify my purpose in reading.)	1	2	3	4	5	6
2. I take notes while reading to help me understand what I read.	1	2	3	4	5	6
3. I think about what I already know to help me understand what I read.	1	2	3	4	5	6
4. I first skim (read over quickly) an English passage, before checking its content.	1	2	3	4	5	6
5. When apart of the text becomes difficult, I read the part aloud to myself.	1	2	3	4	5	6
6. After I read a text in English, I summarize it to understand it better.	1	2	3	4	5	6
7. When the text becomes difficult, I translate the part I don't understand.	1	2	3	4	5	6
8. I read slowly and carefully to be sure I understand what I'm reading.	1	2	3	4	5	6
9. I discuss what I read with others to check my understanding.	1	2	3	4	5	6
10. I review the text first by noting characteristics like length and organization.	1	2	3	4	5	6
11. I try to get back on track when I lose concentration.	1	2	3	4	5	6
12. I underline or highlight information in the text to help me remember it.	1	2	3	4	5	6
13. I adjust my reading speed according to what I'm reading.	1	2	3	4	5	6
14. I decide what to read closely and what to ignore.	1	2	3	4	5	6
15. When I come across words I don't know, I look them up in the dictionary.	1	2	3	4	5	6
16. When the text becomes difficult, I pay closer attention to what I am reading.	1	2	3	4	5	6
17. I use tables, figures, and pictures in text to increase my understanding.	1	2	3	4	5	6
18. I stop from time to time and think about what I'm reading.	1	2	3	4	5	6
19. I use context clues to help me better understand what I'm reading.	1	2	3	4	5	6
20. I paraphrase (restate ideas in my own words) to better understand what I read.	1	2	3	4	5	6
21. I try to picture or visualize information to help remember what I read.	1	2	3	4	5	6
22. I use typological aids like **bold face** and *italics* to identify key information.	1	2	3	4	5	6
23. I critically analyze and evaluate the information presented in the text.	1	2	3	4	5	6
24. I go back and forth in the text to find relationships among ideas in it.	1	2	3	4	5	6
25. While reading, I check my understanding when I come to new information.	1	2	3	4	5	6
26. I guess what the material is about when I read.	1	2	3	4	5	6
27. When text becomes difficult, I re-read to increase my understanding.	1	2	3	4	5	6
28. I ask myself questions I like to have answered in the text.	1	2	3	4	5	6
29. I check to see if my guesses about the text are right or wrong.	1	2	3	4	5	6
30. When I read, I try to guess the meaning of unknown words or phrases.	1	2	3	4	5	6
31. I try to distinguish between important and unimportant words in understanding the general meaning of the text.	1	2	3	4	5	6
32. When I read a sentence in English, I read it word by word to understand its meaning.	1	2	3	4	5	6
33. I look for main ideas while reading.	1	2	3	4	5	6
34. I try to distinguish main ideas from supporting details.	1	2	3	4	5	6
35. I try to connect the meaning of the words I know to those I do not know.	1	2	3	4	5	6
36. When the text becomes difficult, I read silently.	1	2	3	4	5	6
37. When reading, I draw diagrams or pictures representing the information in the text to understand it.	1	2	3	4	5	6
38. I make a list of the words I do not know in the text.	1	2	3	4	5	6

Thank you for responding to this questionnaire.

APPENDIX B

SURVEY OF READING STRATGIES

Survey of Reading Strategies

- Name(optional): _____

1. Age: _____

2. How long have you been studying English? _____ (years)

3. Compared to your classmates, how would you describe your overall proficiency in English
(6) Excellent ____ (5) Very good ____ (4) Above Average ____
(3) Average ____ (2) Below average ____ (1) Not satisfactory ____

4. Did you attend an intermediate or secondary private school where special attention is given to the teaching of English? Yes ____ No ____

5. Did you attend special courses in English at private institutes inside or outside Saudi Arabia? Yes _____ No ____

6. Compared to other students whose English proficiency is similar to yours, how would you describe your knowledge and/or size of English vocabulary?
(6) Excellent ____ (5) Very good ____ (4) Above Average ____
(3) Average ____ (2) Below average ____ (1) Poor ___

7. How much time do you spend daily on reading English texts other than your textbooks? ***(Please try to be as accurate as possible in your answer)***
(1) Nothing ____ (2) 15 minutes or less ____ (3) Half an hour ____
(4) One hour ____ (5) 1-2 hours ___ (6) 2 hours or more ____

8. Rate the following components of English from (1 most important- 4 least important) in mastering the English language.

____ Vocabulary
____ Grammar
____ Sounds (pronunciation)
____ Spelling

Dear Student:

This is not a test of your information about reading. Thus, giving accurate responses will help the researcher come up with accurate results that may improve the teaching of reading -God willing.

To respond to this questionnaire, you only need to indicate whether you use some of the following techniques while reading English academic texts. Please circle the number that reflects the frequency with which you use each of these techniques.

(1) means "**I never do this.**"
(2) means "**I rarely do this.**"
(3) means "**I sometimes do this**"
(4) means "**I often do this.**"
(5) means "**I usually do this.**"
(6) means "**I always do this.**"

Statement	Scale					
1. I have a purpose in mind when I read. (e.g., I read for pleasure- to prepare for an exam, or to find specific information about a certain topic, etc.)	1	2	3	4	5	6
2. I take notes while reading to help me understand what I read.	1	2	3	4	5	6
3. I think about what I already know to help me understand what I read.	1	2	3	4	5	6
4. I first skim (read over quickly) an English passage, before checking its content.	1	2	3	4	5	6
5. When part of the text becomes difficult, I read the part aloud to myself.	1	2	3	4	5	6
6. After I read a text in English, I summarize it to understand it better.	1	2	3	4	5	6
7. When the text becomes difficult, I translate the part I don't understand.	1	2	3	4	5	6
8. I read slowly and carefully to be sure I understand what I'm reading.	1	2	3	4	5	6
9. I discuss what I read with others to check my understanding.	1	2	3	4	5	6
10. I review the text first by noting characteristics like length and organization.	1	2	3	4	5	6
11. I try to get back on track when I lose concentration.	1	2	3	4	5	6
12. I underline or highlight information in the text to help me remember it.	1	2	3	4	5	6
13. I adjust my reading speed according to what I'm reading.	1	2	3	4	5	6
14. I decide what to read closely and what to ignore.	1	2	3	4	5	6
15. When I come across words I don't know, I look them up in the dictionary.	1	2	3	4	5	6
16. When the text becomes difficult, I pay closer attention to what I am reading.	1	2	3	4	5	6
17. I use tables, figures, and pictures in the English text to increase my understanding.	1	2	3	4	5	6
18. I stop from time to time and think about what I'm reading.	1	2	3	4	5	6
19. I use context clues to help me better understand what I'm reading.	1	2	3	4	5	6
20. I paraphrase (restate ideas in my own words) to better understand what I read.	1	2	3	4	5	6
21. I try to picture or visualize information to help remember what I read.	1	2	3	4	5	6
22. I use typological aids like **bold face** and *italics* to identify key information.	1	2	3	4	5	6
23. I critically analyze and evaluate the information presented in the English text.	1	2	3	4	5	6
24. I go back and forth while reading an English text to find relationships among its ideas.	1	2	3	4	5	6
25. While reading in English, I check my understanding when I come to new information.	1	2	3	4	5	6
26. I guess what the material is about when I read English texts.	1	2	3	4	5	6
27. When the English text becomes difficult, I re-read to increase my understanding.	1	2	3	4	5	6
28. I ask myself questions I like to have answered in the English text.	1	2	3	4	5	6
29. I check to see if my guesses about the text are right or wrong.	1	2	3	4	5	6
30. When I read, I try to guess the meaning of unknown words or phrases.	1	2	3	4	5	6
31. When I read a sentence in English, I read it word by word to understand its meaning.	1	2	3	4	5	6
32. I look for main ideas while reading the English text.	1	2	3	4	5	6
33. I try to distinguish main ideas from supporting details in the English text.	1	2	3	4	5	6
34. I try to connect the meaning of the words I know to those I do not know in the text.	1	2	3	4	5	6
35. I check word prefixes and suffixes (what has been added to the beginning and the end of a word) to know its meaning.	1	2	3	4	5	6
36. I make a list of the words I do not know in the English text.	1	2	3	4	5	6

Thank you for responding to this questionnaire.

APPENDIX C

ARABIC VERSION OF THE

SURVEY OF READING STRATGIES

بسم الله الرحمن الرحيم

استبانة إستراتيجيات قراءة نصوص اللغة الإنجليزية (طلاب)

- الاسم: (اختياري) _____

1- العمر: _____ سنة **2-** ما هي المدة التي قضيتها في دراسة اللغة الإنجليزية بالسنوات؟ _____

3- كيف تقيم مستوى لغتك الإنجليزية مقارنة مع زملائك في الفصل؟ (اختر مستوى واحداً فقط √)
(6) __ **ممتاز** (5) ___**جيد جداً** (4) ___ **أعلى من المتوسط** (3) ___**متوسط** (2) ___**أقل من المتوسط** (1) ___ **ضعيف**

4- هل تلقيت تعليمك الثانوي أو المتوسط في مدارس خاصة تهتم باللغة الإنجليزية؟ (1) ___ نعم (2) ___ لا

5- هل حصلت على دورة في اللغة الإنجليزية في معاهد خاصة داخل المملكة أو خارجها ؟ (1) ___ نعم (2) ___ لا

6- كيف تقيم مستوى معرفتك بمفردات اللغة الإنجليزية مقارنة مع زملائك الذين هم في مستواك في اللغة الإنجليزية.
(اختر مستوى واحداً فقط √)
(6) __ **ممتاز** (5) ___**جيد جداً** (4) ___ **أعلى من المتوسط** (3) ___**متوسط** (2) ___ **أقل من المتوسط** (1) ___ **ضعيف**

7- كم من الوقت تقضي في القراءة الحرة لنصوص إنجليزية (عدا النصوص المقررة) يومياً (حاول مراعاة الدقة في الإجابة على هذه الفقرة)
(1) **لا شيء** ___ (2) **ربع ساعة أو أقل** ___ (3) **نصف ساعة** ___
(4) **ساعة** ___ (5) **ساعة إلى ساعتين** ___ (6) **ساعتين أو أكثر** ___

8- رتب العناصر الآتية (من 1 إلى 4) من حيث أهميتها في إتقان اللغة الإنجليزية.
___ **المفردات أو الكلمات** ____ **قواعد اللغة الإنجليزية** (Grammar) ___ **الأصوات والنطق** ___ **الهجاء** (Spelling)

الاستبانة

أخي الطالب: هذا الاستبيان ليس اختباراً لمعلوماتك عن القراءة باللغة الإنجليزية؛ لذا فإن الدقة في الإجابة على فقرات هذا الاستبيان ستساعد الباحث على الخروج بنتائج دقيقة سيكون من شأنها تطوير تدريس مادة القراءة إن شاء الله.

للإجابة على هذه الاستبانة ما عليك إلا أن توضح ما إذا كنت تستعمل بعض هذه الطرق في قراءتك لنصوص اللغة الإنجليزية في مقرراتك الدراسية. **ضع دائرة على الرقم الذي يعكس مدى استعمالك لكل من هذه الطرق على النحو الآتي.**

لا استعملها	1	استعملها نادراً	2
أستعملها أحياناً	3	استعملها غالباً	4
أستعملها عادة	5	استعملها دائماً	6

الطريقة	مدى استخدامها					
1. عندما أقرأ نصاً باللغة الإنجليزية يكون لي هدف من القراءة. (مثال:القراءة للاستعداد للامتحان أو لمعرفة المزيد من المعلومات عن موضوع معين، أو القراءة من أجل المتعة)	1 لا	2 نادرًا	3 أحياناً	4 غالباً	5 عادةً	6 دائماً
2. أدون ملاحظات خلال قراءتي للنص الإنجليزي لتساعدني على فهم ما أقرؤه.	1	2	3	4	5	6
3. أفكر فيما أعرفه من معلومات سابقة عن موضوع النص الإنجليزي لتساعدني على فهم ما أقرئه.	1	2	3	4	5	6
4. أقوم بمسح القطعة الإنجليزية (قراءتها بشكل سريع)، قبل تفحص محتواها.	1	2	3	4	5	6
5. عندما يصبح النص الإنجليزي صعباً، فإني أقر الجزء الصعب بصوت مرتفع حتى أسمع نفسي.	1 لا	2 نادرًا	3 أحياناً	4 غالباً	5 عادةً	6 دائماً
6. بعد قراءة نص باللغة الإنجليزية، أقوم بتلخيصه حتى استوعبه بشكلٍ أفضل.	1	2	3	4	5	6
7. عندما يصبح النص الإنجليزي صعباً، فإني أترجم الجزء الذي لا أفهمه.	1	2	3	4	5	6
8. أقرأ النص الإنجليزي بهدوءٍ وتمعنٍ حتى أتأكد من فهم ما أقرؤه.	1	2	3	4	5	6

9. أناقش ما أقرؤه باللغة الإنجليزية مع الآخرين حتى أتأكد من فهمي.	1 لا	2 نادرًا	3 أحيانًا	4 غالبًا	5 عادةً	6 دائمًا
10. قبل القراءة، أستعرض النص الإنجليزي بملاحظة بعض خصائصه كطوله وترتيب أجزائه وفقراته.	1	2	3	4	5	6
11. أحاول الرجوع إلى مساري السابق عندما أفقد التركيز خلال قراءة النص الإنجليزي.	1	2	3	4	5	6
12. أستعمل المظهر أو أضع خطاً تحت المعلومات المهمة في النص الإنجليزي حتى أتذكرها.	1	2	3	4	5	6
13. أضبط سرعتي في القراءة باللغة الإنجليزية تبعاً لما أقرؤه من حيث الصعوبة والسهولة.	1	2	3	4	5	6
14. أحدد ما يحتاج القراءة بتمعن وما يمكن إهماله في النص الإنجليزي.	1	2	3	4	5	6
15. عندما أمر على كلمات لا أعرفها في النص الإنجليزي ، ألجأ إلى القاموس لاستخراج معانيها.	1	2	3	4	5	6
16. عندما يصبح النص الإنجليزي صعباً، فإني أمعن النظر فيما أقرؤه.	1	2	3	4	5	6
17. أحاول الاستفادة من الجداول، والأشكال، والصور الموجودة في النص الإنجليزي لفهمه بشكل أفضل.	1	2	3	4	5	6
18. أتوقف من وقت لآخر وأفكر فيما أقرؤه باللغة الإنجليزية.	1	2	3	4	5	6
19. أستخدم دلائل سياق النص الإنجليزي لتساعدني على فهم ما أقرؤه. (أحاول استخدام النص بكامله ليساعدني على فهم الأجزاء التي لا أفهمها أو الكلمات التي لا أعرف معناها)	1 لا	2 نادرًا	3 أحيانًا	4 غالبًا	5 عادةً	6 دائمًا
20. أحاول إعادة صياغة الجمل في النص الإنجليزي بكلماتي وأسلوبي لتساعدني على فهم ما أقرؤه.	1	2	3	4	5	6
21. أحاول تصور المعلومات (إيجاد صورة حسية) للمعلومات لتساعدني على فهم ما أقرؤه باللغة الإنجليزية.	1	2	3	4	5	6
22. أستخدم وسائل الطباعة في النص الإنجليزي كالخط **العريض** و*المائل* للتعرف على المعلومات المهمة.	1	2	3	4	5	6
23. أقوم بتحليل المعلومات ونقدها وتقييمها في النص الإنجليزي لاستوعبها.	1	2	3	4	5	6
24. أتقدم ثم أعود في قراءة النص الإنجليزي حتى أتعرف على العلاقة بين الأفكار.	1	2	3	4	5	6
25. أتأكد من فهمي للنص السابق عندما أصل إلى معلومات جديدة خلال القراءة باللغة الإنجليزية.	1	2	3	4	5	6
26. أخمن موضوع المادة التي أقرؤها عندما أقرأ باللغة الإنجليزية.	1	2	3	4	5	6
27. . عندما يصبح النص الإنجليزي صعباً، فإني أقرؤه مرةً أخرى لأفهم النص بشكلٍ أفضل.	1	2	3	4	5	6
28. أسأل نفسي بعض الأسئلة التي أود لو أن النص الإنجليزي قد أجاب عنها.	1	2	3	4	5	6
29. أحاول التأكد هل تخميناتي عن النص الإنجليزي صحيحه أم لا.	1	2	3	4	5	6
30. أحاول تخمين معاني الكلمات والعبارات التي لا أعرفها خلال القراءة باللغة الإنجليزية.	1 لا	2 نادرًا	3 أحيانا	4 غالبًا	5 عادةً	6 دائمًا
31. عند قراءة جملة باللغة الإنجليزية، فإني أقرأ كلماتها كلمة كلمة حتى أكوّن معناها.	1	2	3	4	5	6
32. أبحث عن الأفكار الرئيسية خلال قراءتي لنص باللغة الإنجليزية.	1	2	3	4	5	6
33. أحاول التمييز بين الأفكار الرئيسية والأفكار الثانوية في النص الإنجليزي.	1	2	3	4	5	6
34.أحاول الربط بين الكلمات التي أعرفها والكلمات التي لا أعرفها في النص الإنجليزي.	1	2	3	4	5	6
35. أقوم بتفحص ما أضيف لأول الكلمة وآخرها وأصل الكلمة حتى أتعرف على معناها.	1	2	3	4	5	6
36. أكتب قائمة بالكلمات التي لا أعرفها في النص الإنجليزي .	1	2	3	4	5	6

- شكراً لمشاركتك في هذا الاستبيان.

APPENDIX D

DESCRIPTIVE STATISTICS

OF PERCEIVED READING STRATEGIES

OF EFL LEARNERS IN THE PILOT SAMPLE

Descriptive Statistics of Perceived Reading Strategies of EFL Learner in the Pilot Sample

Strategy	*M*	*SD*
17. I use tables, figures, and pictures in text to increase my understanding.	*5.03*	*1.14*
7. When the text becomes difficult, I translate the part I don't understand.	*5.03*	*1.33*
27. When text becomes difficult, I re-read to increase my understanding.	*4.86*	*1.49*
8. I read slowly and carefully to be sure I understand what I'm reading.	*4.75*	*1.17*
15. When I come across words I don't know, I look them up in the dictionary.	*4.73*	*1.69*
11. I try to get back on track when I lose concentration.	*4.73*	*1.45*
32. When I read a sentence in English, I read it word by word to understand its meaning.	*4.64*	*1.48*
16. When the text becomes difficult, I pay closer attention to what I am reading.	*4.63*	*1.44*
12. I underline or highlight information in the text to help me remember it.	*4.32*	*1.67*
30. When I read, I try to guess the meaning of unknown words or phrases.	*4.31*	*1.38*
19. I use context clues to help me better understand what I'm reading.	*4.30*	*1.45*
25. While reading, I check my understanding when I come to new information.	*4.20*	*1.35*
3. I think about what I already know to help me understand what I read.	*4.19*	*1.48*
35. I try to connect the meaning of the words I know to those I do not know.	*4.02*	*1.42*
36. When the text becomes difficult, I read silently.	3.91	1.80
13. I adjust my reading speed according to what I'm reading.	3.85	1.80
38. I make a list of the words I do not know in the text.	3.85	1.69
33. I look for main ideas while reading.	3.83	1.51
18. I stop from time to time and think about what I'm reading.	3.77	1.54
21. I try to picture or visualize information to help remember what I read.	3.60	1.68
24. I go back and forth in the text to find relationships among ideas in it.	3.56	1.65
31. I try to distinguish between important and unimportant words in understanding the general meaning of the text.	3.54	1.54
26. I guess what the material is about when I read.	3.52	1.69
34. I try to distinguish main ideas from supporting details.	3.44	1.51
1. I have a purpose in mind when I read. (e.g., after reading the title and the sub-headings, I ask myself some goal questions which specify my purpose in reading.)	3.43	1.72
29. I check to see if my guesses about the text are right or wrong.	3.34	1.68
14. I decide what to read closely and what to ignore.	3.29	1.64
9. I discuss what I read with others to check my understanding.	3.28	1.75
20. I paraphrase (restate ideas in my own words) to better understand what I read.	3.24	1.69
10. I review the text first by noting characteristics like length and organization.	3.24	1.62
4. I first skim (read over quickly) an English passage, before checking its content.	3.22	1.70
2. I take notes while reading to help me understand what I read.	3.20	1.55
5. When apart of the text becomes difficult, I read the part aloud to myself.	3.10	1.87
28. I ask myself questions I like to have answered in the text.	*2.92*	*1.69*
22. I use typological aids like bold face and italics to identify key information.	*2.83*	*1.98*
23. I critically analyze and evaluate the information presented in the text.	*2.47*	*1.38*
6. After I read a text in English, I summarize it to understand it better.	*2.38*	*1.39*
37. When reading, I draw diagrams or pictures representing the information in the text to understand it.	*2.04*	*1.45*

APPENDIX E

GENDER DIFFERENCES IN PERCEIVED USE OF READING STRATEGIES IN THE PILOT SURVEY

Gender Differences in perceived strategy use in the Pilot Survey

Strategy	*t*	df	Sig. (2-tailed)	M. Difference
Taking-notes	-3.601	58	.001	-1.3199
Translation	-2.465	58	.017	-.8148
Critical reading	-2.000	58	.050	-.7003
Identifying main ideas	2.463	56	.017	.9423
Drawing pictures and diagrams	-2.283	56	.026	-.8438

APPENDIX F

READING COMPREHNSION TEST

Reading Comprehension Test

Read the following passages and then answer the questions that follow.
(Passage I)

Since the world has become industrialized, there has been an increase in the number of animal species that have either become extinct or have neared extinction. Bengal tigers, for instance, which once roamed the jungles in vast numbers, now number only about 2,300, and by the year 2025 their population is estimated to be down to zero. What is alarming about the case of the Bengal tiger is that this extinction will have been caused almost entirely by poachers who, according to some sources, are not interested in money but in personal satisfaction. This is an example of the callousness that is part of what is causing the problem of extinction. Animals like the Bengal tiger, as well as other dangerous species, are a valuable part of the world's ecosystem. International laws protecting these animals must be enacted to ensure their survival, and the survival of our planet.

Countries around the world have begun to deal with the problem in various ways. Some countries, in order to circumvent the problem, have allocated large amounts of land to animal reserves. They then charge admission to help defray the costs of maintaining the parks, and they often must also depend on world organizations for support. With the money they get, they can invest in equipment and patrols to protect the animals. Another solution that is an attempt to stem the tide of animal extinction is an international boycott of products made from endangered species. This seems fairly effective, but it will not, by itself, prevent animals from being hunted and killed.

1. **What is the main topic of the passage?**
   (A) the Bengal tiger
   (B) international boycotts
   (C) endangered species
   (D) problems with industrialization

2. **The word "callousness" in line 8 is similar in meaning to**
   (A) indirectness
   (B) independence
   (C) incompetence
   (D) insensitivity

3. **The word "circumvent" in line 14 is similar in meaning to**
   (A) avoid
   (B) create
   (C) complicate
   (D) ignore

4. **The above passage is divided into two paragraphs in order to contrast**
   (A) a problem and solution
   (B) a statement and an illustration
   (C) a comparison and a contrast
   (D) specific and general information

5. **What does the word "this" refer to in line 8?**
   (A) endangered species that are increasing
   (B) Bengal tigers that are decreasing
   (C) Poacher who seek personal satisfaction
   (D) Sources that may not be accurate

6. **Where in the passage does the author talk about a cause of extinction?**
   (A) Line 1-3
   (B) Line 5-8
   (C) Line 10-12
   (D) Line 13-15

7. **The word "defray" in line 16 is closest in meaning to which of the following?**
   (A) double
   (B) raise
   (C) pay
   (D) invest

8. **Which of the following best describe the author's attitude?**
   (A) forgiving
   (B) concerned
   (C) satisfy
   (D) surprised

(Passage II)

Bees are insects that live in almost every part of the world except the northernmost and southernmost sections. There are 10,000 species, or kinds, of bees. One species is the honeybee, which is the only bee that produces honey and wax. Humans use the wax in making candles, lipsticks, and other products. We see the honey they produce as a food.

Bees are truly amazing because while they are gathering the nectar and pollen with which they make honey, they are helping to fertilize the flowers on which they land. Many fruits and vegetables would not survive if bees did not carry the pollen from blossom to blossom. The worker bee carries nectar to the hive in a special stomach called a honey stomach.

The hive is a nest with storage space for honey. Other workers make some beeswax and shape it into a "honey comb," which is impermeable to water in order to protect the bees from bad weather. The queen lays eggs in completed cells. As the workers build more cells, the queen lays more eggs.

All workers, like the queen, are female, but are smaller than the queen. The male honeybees are called drones; they do no work and cannot sting. They are developed from unfertilized eggs, and their only job is to impregnate a queen. The queen must be fertilized in order to lay worker eggs. During the season in which less honey is available, and drone is of no further use, the workers block the drones from eating the honey so that they will starve to death.

1. **Which of the following is the best title for the reading?**
   (A) The Many Species of Bees
   (B) The Useless Drone
   (C) The Honeybee- Its characteristics and Usefulness
   (D) Making Honey

2. **Which of the following is correct about the drones?**
   (A) They collect less honey than the workers.
   (B) Their only purpose is to mate with the queen.
   (C) They come from eggs that have been fertilized by other drones.
   (D) They can be male or female.

3. **Which of the following can be understood from the passage?**
   (A) The workers need to save food for useful members of the colony when food is scarce.
   (B) Bees are unnecessary in the food chain.
   (C) Drones are completely useless.
   (D) Bees can drown in their hive in a heavy rain.

4. **Nectar is carried to the hive in a honey stomach by the**
   (A) queens
   (B) drones
   (C) males
   (D) workers

5. **In what way does the reading show that bees are useful in nature?**
   (A) The pollinate fruit and vegetable plants.
   (B) They make marvelous creations from wax.
   (C) They kill the dangerous drones.
   (D) They create strong spaces.

6. **The word "impermeable" in line 12 is similar in meaning to which of the following?**
   (A) penetrable
   (B) not accessible
   (C) attractive
   (D) encompassing

7. **Where does the passage show the difference between drones and workers distinguished?**
   (A) Lines 3-5
   (B) Lines 11-13
   (C) Lines 15-17
   (D) Lines 18-20

Passage III

Wood has long been a popular building material in North America because it has generally been plentiful and cheap. Swedish settlers in Delaware built log cabins as early as the 1630s. In New England, British colonist built wooden "saltbox houses." Most of the wooden homes of Colonial times could be built with simple tools and minimal skills.

In the nineteenth century, the standard wooden house was built with beams set into heavy posts and held together with wooden pegs. This method of construction was time-consuming and required highly skilled workers with special tools. The balloon-frame house, invented in 1833 in Chicago by a carpenter from Hartford, Connecticut, used a framework of lightweight lumber. This type of house could be assembled by any careful workers who could saw in a straight line and drive a nail.

This revolution in building was made possible by improved sawmills that could quickly cut boards to standard size, and the lower cost of lumber that resulted. There were also new machines that could produce huge quantities of inexpensive nails. Skeptics predicted that a strong wind would send such houses flying through the air like balloons, and at first "balloon frame" was a term of derision. But the light frames proved practical, and wooden houses have been basically built this way ever since.

1. **What is the main purpose of this passage?**
   (A) To trace the influence of Swedish and British settlers on American styles of building
   (B) To stress the importance of wood as a building material
   (c) To compare methods of constructing wooden houses in various parts of the country
   (D) To describe a revolutionary development in techniques for constructing wooden houses

2. **According to the passage, where did the inventor of the balloon-frame house originally come from?**
   (A) Connecticut
   (B) Chicago
   (C) Sweden
   (D) Delaware

3. **Which of the following types of houses required the most skill to produce?**
   (A) The log cabins built by Swedish settlers
   (B) Saltbox houses
   (C) Standard wooden houses of the early nineteenth-century
   (D) Balloon-frame houses

4. **According to the passage, why was the term "balloon frame" applied to certain houses?**
   (A) They could be moved from place to place.
   (B) They could be easily expanded.
   (C) They had rounded frames that resembled balloons.
   (D) They were made of lighter materials.

5. **The word "derision" in line 18 is similar in meaning to which of the following?**
   (A) wisdom
   (B) humiliation
   (C) insult
   (D) honor

APPENDIX G

VOCABULARY LEVELS TEST

Vocabulary Levels Test: Version 1 (Schmitt, 2000)

This is a vocabulary test. You must choose the right word to go with each meaning. Write the number of that word next to its meaning. Here is an example.

1. business
2. clock
3. horse ____ part of a house
4. pencil ____ animal with four legs
5. shoe ____ something used for writing
6. wall

Your answer it in the following way

1. business
2. clock
3. horse __6__ part of a house
4. pencil __3__ animal with four legs
5. shoe __4__ something used for writing
6. wall

Some words are in the test to make it more difficult. You do not have to find a meaning for these words. In the example above, these words are ***business, clock***, and ***shoe***. If you have no idea about the meaning of a word, do not guess. But if you think you might know the meaning, then you should try to find the answer.

Section 1

1. birth
2. dust ____ game
3. operation ____ winning
4. row ____ being born
5. sport
6. victory

1. choice
2. crop ____ heat
3. flesh ____ meat
4. salary ____ money paid regularly
5. secret for doing a job
6. temperature

1. cap
2. education ____ teaching and learning
3. journey ____ numbers to measure with
4. parent ____ going to a far place
5. scale
6. trick

1. attack
2. charm ____ gold and sliver
3. lack ____ pleasing quality
4. pen ____ not having something
5. shadow
6. treasure

1. cream
2. factory ____ part of milk
3. nail ____ a lot of money
4. pupil ____ person who is studying
5. sacrifice
6. wealth

1. adopt
2. climb ____ go up
3. examine ____ look at closely
4. pour ____ be on every side
5. satisfy
6. surround

1. bake
2. connect ____ join together
3. inquire ____ walk without purpose
4. limit ____ keep within a certain size
5. recognize
6. wander

1. burst
2. concern ____ break open
3. deliver ____ make better
4. fold ____ take something to someone
5. improve
6. urge

1. original
2. private ____ first
3. royal ____ not public
4. slow ____ all added together
5. sorry
6. total

1. brave
2. electric ____ commonly done
3. firm ____ wanting food
4. hungry ____ having no fear
5. local
6. usual

Section 2

1. belt
2. climate ____ idea
3. executive ____ inner surface of
4. notion your hand
5. palm ____ strip of leather worn
6. victim around the waist

1. acid
2. bishop ____ cool feeling
3. chill ____ farm animal
4. ox ____ organization or framework
5. ridge
6. structure

1. bench
2. charity ____ long seat
3. jar ____ help to the poor
4. mate ____ part of a country
5. mirror
6. province

1. boot
2. device ____ army officer
3. lieutenant ____ a kind of stone
4. marble ____ tube through which
5. phrase blood flows
6. vein

1. apartment
2. candle ____ a place to live
3. draft ____ chance of something
4. horror happening
5. prospect ____ first rough form of
6. timber something

1. betray
2. dispose ____ frighten
3. embrace ____ say publicly
4. injure ____ hurt seriously
5. proclaim
6. scare

1. encounter
2. illustrate ____ meet
3. inspire ____ beg for help
4. plead ____ close completely
5. seal
6. shift

1. assist
2. bother ____ help
3. condemn ____ cut neatly
4. erect ____ spin around quickly
5. trim
6. whirl

1. annual
2. concealed ____ wild
3. definite ____ clear and certain
4. mental ____ happening once a year
5. previous
6. savage

1. dim
2. junior ____ strange
3. magnificent ____ wonderful
4. maternal ____ not clearly lit
5. odd
6. weary

Section 3

1. benefit
2. labor ____ work
3. percent ____ part of 100
4. principle ____ general idea used to guide
5. source one's action
6. survey

1. element
2. fund ____ money for a special purpose
3. layer ____ skilled way of doing something
4. philosophy ____ study of the meaning of life
5. proportion
6. technique

1. consent
2. enforcement ____ total
3. investigation ____ agreement
4. parameter or permission
5. sum ____ trying to find
6. trend information about something

1. decade
2. fee ____ 10 years
3. file ____ subject of a discussion
4. incidence ____ money paid for services
5. perspective
6. topic

1. colleague
2. erosion ____ action against the law
3. format ____ wearing away gradually
4. inclination ____ shape or size of
5. panel something
6. violation

1. achieve
2. conceive ____ change
3. grant ____ connect together
4. link ____ finish successfully
5. modify
6. offset

1. convert
2. design ____ keep out
3. exclude ____ stay alive
4. facilitate ____ change from one
5. indicate thing into another
6. survive

1. anticipate
2. compile ____ control something
3. convince skillfully
4. denote ____ expect something will
5. manipulate happen
6. publish ____ produce books and newspapers

1. equivalent
2. financial ____ most important
3. forthcoming ____ concerning sight
4. primary ____ concerning money
5. random
6. visual

1. alternative
2. ambiguous ____ last or most important
3. empirical ____ something different that
4. ethnic can be chosen
5. mutual ____ concerning people from
6. ultimate a certain nation

APPENDIX H

ARABIC INSTRUCTION FOR

THE VOCABULARY LEVELS TEST

اختبار مفردات اللغة الإنجليزية

في هذا الاختبار، عليك أن تختار الكلمة الصحيحة من قائمة الكلمات التي تتناسب مع كل معنى من المعاني في القائمة المقابلة. اكتب رقم الكلمة الصحيحة مقابل معناها، كما في المثال الآتي.

7. business
8. clock
9. horse ____ part of a house
10. pencil ____ animal with four legs
11. shoe ____ something used for writing
12. wall

ينبغي أن تكون إجابتك كالآتي:

7. business
8. clock
9. horse __6__ part of a house
10. pencil __3__ animal with four legs
11. shoe __4__ something used for writing
12. wall

هناك بعض الكلمات الصعبة والمعقدة التي وضعت في الاختبار لتجعله أكثر صعوبة. **لا يجب عليك أن تبحث عن معان لتلك الكلمات في القاموس.** في المثال السابق مثلاً هذه الكلمات هي business, clock, .shoe إذا كنت لا تعرف معنى كلمة معينة فلا تخمن معناها. ولكن إذا كنت تعتقد أنك تعرف معنى الكلمة فحاول البحث عن الإجابة.

(بداية الاختبار)

APPENDIX I

OKALHOMA STATE UNIVERSITY

INSTITUTIONAL REVIWBOARD FOR

HUMAN SUBJECTS RESEARCH FORM

Oklahoma State University
Institutional Review Board

Protocol Expires: 11/27/02

Date: Wednesday, November 28.2001

IRB Application No ASO224

Proposal Title: THE RELATIONSHIP BETWEEN THE READING COMPREHENSION OF EFL LEARNERS AND THEIR VOCABULARY SIZE AND READING STRATEGIES

Principal Investigator(s):

Abdulkarim Al-Nujaidi
1400 N. Perkins Rd.
Stillwater, OK 74075

Ravi Sheorey
205 Morrill
Stillwater, OK 74078

Reviewed and
Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

Dear PI :

Your IRB application referenced above has been approved for one calendar year. Please make note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year . This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved projects are subject to monitoring by the IRB. If you have questions about the IRB procedures or need any assistance from the Board. please contact Sharon Bacher. the Executive Secretary to the IRB. in 203 Whitehurst (phone: 405-744-5700. sbacher@okstate.edu).

Sincerely,

Carol Olson, Chair
Institutional Review Board

APPENDIX J

INFORMED CONSENT SCRIPT

Oklahoma State University
Institutional Review Board

INFORMED CONSENT FORM

To be read to the subjects by the Principal Investigator prior to administering the *Reading Strategies Survey and other tests*

" You are being asked to participate in a research study being conducted by a Saudi graduate student. The purpose of this study is to obtain information from students about how they read academic or school-related materials such as textbooks, library materials, etc. We are interested in finding out the types of reading strategies you use when you read these materials as well as estimating your vocabulary size and reading comprehension ability. Obtaining such information can help us gain a better understanding of how students such as yourselves can expand their vocabulary knowledge and improve their reading skills for academic purposes.

Your participation involves completing a two-part survey instrument. The first part asks you to provide background information such as age, perception of your vocabulary knowledge, and the amount of time you spent on reading out-of-class materials. The second part asks you to read several statements and rate yourself on each statement by circling the number on the survey that represents your answer choice. Please note that there are no "right" or "wrong" answers to these statements, and there is no time limit for completing this survey. However, we estimate that it will take you about 10-12 minutes to complete both parts of the survey. This participation will also involve taking two tests: a vocabulary size test, and a reading comprehension test. Both tests are estimated to take no longer than 70-80 minutes.

Your participation in this study is completely voluntary. There are no penalties for refusing to participate in this study. You will not be denied any course privileges should you decline to participate or change your mind about participating.

Since your answers will be kept strictly confidential, feel free to respond to all statements honestly and completely. Please do not identify yourself by name. Do you have any questions? Are you ready to begin completing the survey?"

ASSURANCE

My signature below indicates that (1) I read the Consent Form Script to the subjects, (2) explained its content and intent to them prior to conducting the study, (3) apprised them of the voluntary nature of their participation (they are aware that they were free to withdraw their consent and end participation in the study at any time without penalty after notifying the project director), (4) assured them about our obligation to protect their identity and to maintain confidentiality of the information they provide, and directed them to the Office of Research and Compliance (attention: Sharon Bacher, 744-5700) in the event they have any questions or need additional information about any aspect of this study. Completion of the survey instrument indicates consent of the subject to freely and willingly participate in the study.

_____ _____

Principal Investigator **Date**

Note: *The consent-form script will be translated into Arabic and read to the subjects in their native language to ensure full understanding of its content.*

VITA 2

Abdulkarim H. Al-Nujaidi

Candidate for the Degree of

Doctor of Philosophy

Thesis: THE REALTIONSHIP BETWEEN THE READING STRATEGIES, VOCABULARY SIZE, AND READING COMPREHENION OF EFL LEARNERS IN SAUDI ARABIA

Major Field: English

Biographical:

Personal Data: Born in Arar, Saudi Arabia, on November 24, 1968, the son of Hamad A. Al-Nujaidi and Munirah M. Al-Saja.

Education: Graduated from Oyoun Al-Jawa High School, Al-Qasim, Saudi Arbia in May, 1986; received Bachelor of Arts degree in English from Al-Imam Muhammad Ibn Saud Islamic University, Riyadh, Saudi Arabia, in June 1997; received Master of Arts degree in English from Colorado State University in August, 2000; completed the requirements for the Doctor of Philosophy degree with a major in English at Oklahoma State University in May 2003.

Experience: Training officer, Saudi Border Guards, September 1987 to August 1997; Teaching Assistant, English Center, Riyadh College of Technology, October 1997 to January 1999.

Professional Affiliation: Association of American Applied Linguistics (AAAL), Teachers of English to Speakers of Other Languages (TESOL), Phi Kappa Phi (National Honor Society).