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Shaping EFL Students' Perception of Self-Reading Efficiency through Reading Strategies Online

تشكيل مقدرة فهم طلاب اللغة الإنجليزية لغةً أجنبية على فعالية القراءة الذاتية من خلال استراتيجيات القراءة عبر الإنترنت

(A Case Study of the Preparatory Year students at University of Hail / KSA)

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الآية

قال الله تعالى في سورة العلق:
بسم الله الرحمن الرحيم

اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ {1} خَلَقَ الْإِنْسَانَ مِنْ عَلَقٍ {2} اقْرَأْ وَرَبُّكَ الْأَكْرَمُ {3}
الَّذِي عَلَّمَ بِالْقَلَمِ {4} عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ {5}

صدق الله العظيم

In the name of Allah, Most gracious, Most Merciful

Recite in the name of your Lord who created (1) Created man from a clinging substance (2) Recite, and your Lord is the most Generous (3) Who taught by the pen (4) Taught man that which he knew not (5).

Holy Quran

Dedication

TO MY PARENTS, MY DEAR HUSBAND AND CHILDREN, MY
BROTHERS AND SISTER, MY FRIENDS AND TO MY BELOVED NATION.

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All praise is due to the Lord of the world who empowered me to conduct this thesis. Great appreciation and greetings are reserved to my supervisor Dr. Ahmed Mukhtar Elmardi Osman, who made every effort to give his great knowledge as a gracious gift. My profound gratitude to him and to Dr. Muntasir Hassan Mubarak Alhafian who played a major role in the study with her long experience as the co-supervisor. A lot of praise is also received to College of Graduate Studies at Sudan University of Science and Technology for accepting this study as a dissertation for the degree of PhD. I'm very thankful to my colleagues at Translation & Statistics Unit in Preparatory Year- University of Hail to their great help and efforts they expended to me.

ABSTRACT

This study aims to investigate the Online Reading Strategies that the students use for academic purposes in actual reading tasks and to find the similarities and differences between the use of strategies among proficient and less proficient readers and to know the difficulties they reported when reading academic texts online. The study adopted the descriptive analytic method, several instruments used to collect data: the Online Survey of Reading Strategies (OSORS), TOEFL reading proficiency test scores, Internet use Questionnaire, pre- and post-reading interviews, observations through think-aloud sessions and self-report of online reading strategies. The samples were drawn from the total number of students at University of Hail- Preparatory Year for the second semester in the academic year (2018 – 2019) is 3000 students, 200 students withdrew, 300 students failed and they will have either repeat the whole semester or leave the PY and join Community Services College in the university. The data were included for 68 and 43 students in the proficient group and less proficient group from the 2000 students who passed and transferred to the second semester. The analysis yielded a number of results, first, students need to orchestrate strategy use to cope with different reading demands. Second, the students used their schema or background knowledge frequently when reading online. Third, Students' vocabulary knowledge relates strongly to their reading comprehension and academic success. Based on the findings, the researcher concluded the study by suggestions for further studies.

ARABIC VERSION

مستخلص البحث

تهدف هذه الدراسة إلى تقصي استراتيجيات القراءة عبر الإنترنت التي يستخدمها الطلاب للأغراض الأكاديمية وتلك التي يستخدمونها في مهام القراءة الفعلية وإيجاد التشابه والاختلاف في استخدام الاستراتيجيات بين القراء الأكفاء والأقل كفاءةً، كما تهدف إلى معرفة الصعوبات التي تواجههم عند قراءة النصوص الأكاديمية عبر الإنترنت. إتمدت الدراسة المنهج التحليلي الوصفي وإستخدمت العديد من الأدوات لجمع البيانات كإستبيان إستراتيجيات القراءة عبر الإنترنت وإستبيان استخدام الإنترنت ونتائج اختبار إجادة القراءة والمقابلات قبل وبعد القراءة والملاحظات والتقرير الذاتي لاستراتيجيات القراءة عبر الإنترنت. تم أخذ العينات من إجمالي عدد طلاب السنة التحضيرية بجامعة حائل للفصل الدراسي الثاني للعام الدراسي (2018-2019) والبالغ عددهم 3000 طالب، إنسحب منهم 200 طالبورسب 300 طالب في الفصل الأول حيث سيقومون بإعادة الفصل الدراسي أو يغادرون السنة التحضيرية ويلتحقون بكلية خدمة المجتمع . شملت العينات 68 و 43 طالبًا في المجموعتين الأكثر والأقل كفاءةً من مجموع 2000 طالب اجتازوا الفصل الدراسي الأول وانتقلوا إلى الفصل الثاني. أشارت هذه الدراسة إلى أن (إستبيان استراتيجيات القراءة عبر الإنترنت) أداة مفيدة لتوفير معلومات قيمة تساعد الطلاب في زيادة وعيهم باستراتيجيات القراءة وتعزيز فهمهم وزيادة الثقة في قدرتهم عليها. أسفر التحليل عن عدد من النتائج: أولاً: يحتاج الطلاب إلى تحسين استخدام الإستراتيجيات للتعامل مع متطلبات القراءة المختلفة. ثانياً: يستخدم الطلاب مخزونهم أو خلفيتهم المعرفية عند القراءة عبر الإنترنت. ثالثاً: ترتبط مفردات الطلاب ارتباطاً وثيقاً بفهمهم في القراءة والنجاح الأكاديمي. استناداً إلى النتائج ختمت الدراسة بإقتراح عدد من الدراسات المستقبلية.

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Chapter One

Introduction

1.0 Background of the Study

As we all know because large amount of course books, references, and internet materials are written in English, reading is considered to be the main gateway to access knowledge. Academic reading or reading for the purpose of learning, thus, has become one of the most important demands placed on EFL postgraduate students. In order to fulfill their academic requirements, reading English academic text skillfully is especially necessary to them.

Despite this recognition, most EFL adult learners when they further their study at a graduate level cannot read English academic text skillfully. Their poor reading skills may result from two main reasons. The first is that Arabs is not a strong reading culture. This situation is reflected in the number of books Arabs children read per year. According to KulthornLerdsuriyakul, a specialist in curriculum development at the Office of the Non-Formal and Information Education, Arabs children read only two to five books per year, while those in Singapore and Vietnam read 50-60 books annually (Puangchompoo, 2012).

The other reason may be the result of a long history of ineffective teaching of reading in EFL classrooms. Typically, many EFL teachers teach reading by having students read English passages and answer comprehension questions followed without any consideration of teaching necessary reading strategies. Many teachers may even employ a variation of the grammar translation method to teach reading by asking their students to translate English reading passages into EFL. Their assumption is that EFL students are weak in English because they have a limited vocabulary. Thus, the only way they can read English is to translate English words into Arabic first. Having been taught to read in this way, many Arabic EFL adult learners are still weak in both decoding and comprehension. According to Samuels (1994), fluent reading entails heavy demands on the reader's attention and relies on the automatic processes of decoding and comprehension. A lack of both decoding and comprehension skills may have limited the automatic processes among EFL adult learners.

Based on the understanding that skillful readers display a higher degree of reading strategy awareness, reading strategy instruction has become highly recognized among EFL teachers. Research has suggested that reading strategies used by proficient readers can be taught to EFL learners, so EFL learners should be trained to acquire and develop reading strategies (Anderson, 2004). As training EFL learners to use certain reading strategies will improve their reading skills and help them to become skillful EFL readers, fostering reading strategies among EFL adult learners to deal with English academic text skillfully should be the goal for all EFL reading classes.

There is an increasing number of research studies conducted on EFL reading strategy instruction. The results from the studies confirmed that reading strategy instruction could help EFL learners comprehend English materials more skillfully (Chavangklang, 2008; Pimsarn, 2009; Siriphanich & Laohaawiriyanon, 2010; Wichadee, 2012).

Some other studies further investigated the effect of reading strategy instruction on EFL learners' reading strategy awareness when reading English materials (Akkakoson & Setobol, 2009; Boonkit, 2006; Yoosabai, 2009). These studies confirmed that EFL learners could improve their reading comprehension and increase their metacognitive awareness by being trained to use reading strategies.

The issue of which reading strategies EFL adult learners are aware of and whether the implementation of reading strategy instruction can raise their reading strategy awareness in comprehending English academic text is the concern of this study. Therefore, this study investigated the possible effect of the implementation of reading strategy instruction on EFL postgraduate students' reading strategy awareness. Knowing the effect would help teachers improve the teaching and learning process in a reading class to help develop their students to become more skillful readers.

1-1 Statement of the Study Problem

It's searching of how to investigate and shape English Forging Language Students' Perception of Self- Reading Online Efficiency through Reading Strategies.

1-2 Questions of the Study

This study is an attempt to investigate reading through addressing the following questions:

1. What reading strategies do the students use when reading English text online?
2. What reading strategies do they use in actual reading tasks?
3. What are the similarities and differences exist between proficient and less proficient readers?
4. What type of difficulties do students report when they read academic text online?

1.3 Hypotheses of the Study

1. The students use reading strategies when reading English text online.
2. Students use several reading strategies in actual reading tasks.
3. There are many differences and similarities between proficient and less proficient readers.
4. The students face many difficulties when they read academic texts online.

1.4 Objectives of the Study

This study aimed to examine the online reading strategies the surveyed students reported using for academic purposes and also the selected students used them in actual reading tasks, also to find the similarities and differences between the actual use of strategies among proficient and less proficient readers. In addition to know the types of difficulties they reported and encountered when reading academic texts online.

1-5 Significance of the Study

As stated earlier, this study is expected not only to identify what strategies EFL university students implement when they read online in English for academic

purposes, but also to provide insights on their actual use of those strategies to foster reading comprehension. The findings obtained from this study could be used as a guideline for teachers to figure out what effective strategies are and how they can teach students a repertoire of reading strategies that would facilitate students' adjustment to the different types of texts they are reading online. Furthermore, teachers will better understand several types of difficulties their students encounter during the online reading process so that they can address them accordingly. Apart from the aforementioned pedagogical implications, students themselves can also benefit from the findings of this study by reflecting on their own reading experience and realizing some of the hindering factors which impede their reading performance. They can learn more about the effectiveness of reading strategies proficient readers use and apply them to relieve comprehension difficulties. Also, I believe that the findings will prompt researchers to extend the scope of this current study and continue to offer significant advantages for the sake of both teaching and learning practices.

1.6 Methodology

In this study, several instruments and approaches will use to collect data: 1) the Online Survey of Reading Strategies (OSORS), 2) TOEFL reading proficiency test scores, 3) Internet use questionnaire, 4) pre- and post-reading interviews, 5) observations through think-aloud sessions, and 6) self-report of online reading strategies.

1.7 Limits of the Study

This study is limited to students of the preparatory year at University of Hail (academic year 2018 – 2019- Second semester).

1-8 Purposes of the Study

The fundamental purpose of the study is searching of how to shape English Forging Language Students' Perception of Self- Reading Online Efficiency through Reading Strategies.

1-9 List of Abbreviations

The abbreviation	The words
PY	Preparatory Year at University of Hail
PREP	Preparatory Year Students at University of Hail
OSORS	Online Survey of Reading Strategies
SORS	Survey of Reading Strategies
TOEFL	Teaching of English as a Foreign Language.
EFL	English as a Foreign Language.

Chapter Two
Literature Review
and Previous Studies

2.0 Introduction:

This chapter reviews the related literature to the topic of the study in addition to some previous studies in relation to this study.

Part (A): The Literature Review:

2.0 Overview:

Reading assumes the third position as regards the hierarchy of communication skills. According to Akin (2003) reading comprehension is one of the pillars of the act of reading. When a person reads a text he engages in a complex array of cognitive processes. He is simultaneously using his awareness and understanding of phonemes (individual sound “pieces” in language), phonics (connection between letters and sounds and the relationship between sounds, letters and words) and ability to comprehend or construct meaning from the text. This last component of the act of reading is reading comprehension. It cannot take place independently of the other two elements of the process. At the same time, it is the most difficult and most important of the three. Bright (1976) in his book *Teaching English as a Second Language* asserts that there are two elements that make up the process of reading comprehension: vocabulary knowledge and text comprehension. In order to understand a text the reader must be able to comprehend the vocabulary used in the piece of writing. If the individual words don't make the sense then the overall story will not either. Children can draw on their prior knowledge of vocabulary, but they also need to continually be taught new words. The best vocabulary instruction occurs at the point of need. Parents and teachers should pre-teach new words that a child will encounter in a text or aid her in understanding unfamiliar words as she comes upon them in the writing. In addition to being able to understand each distinct word in a text, the child also has to be able to put them together to develop an overall conception of what it is trying to say. This is text comprehension. Carrel (1992) confirms that text comprehension is much more complex and varied than vocabulary knowledge. Readers use many different text comprehension strategies to develop reading comprehension. These include monitoring for understanding, answering and

generating questions, summarizing and being aware of and using a text's structure to aid comprehension. Block (1986) asserts that reading comprehension is incredibly complex and multifaceted. Because of this, readers do not develop the ability to comprehend texts quickly, easily or independently. Therefore, reading comprehension strategies must be introduced at an earlier stage over an extended period of time by parents and teachers who have knowledge and experience using them. It might seem that once a child learns to read in the elementary grades he is able to tackle any future text that comes his way. This is not true. Reading comprehension strategies in Eskey (1988) words must be refined, practiced and reinforced continually throughout life. Even in the middle grades and high school, parents and teachers need to continue to help their children develop reading comprehension strategies. As their reading materials become more diverse and challenging, children need to learn new tools for comprehending these texts. Content area materials such as textbooks and newspaper, magazine and journal articles pose different reading comprehension challenges for young people and thus require different comprehension strategies. The development of reading comprehension is a lifelong process that changes based on the depth and breadth of texts the person is reading.

2.1. Definition of reading

Reading is definitely an important skill for academic contexts but what is the appropriate definition of the word "reading"? FL reading research has gained specific attention since the late seventies (Eskey, 1973; Clarke and Silberstein, 1977; Widdowson, 1978). Before that time, FL reading was usually linked with oral skills and viewed as a rather passive, bottom-up process which largely depended on the decoding proficiency of readers. The decoding skills that readers used were usually described in hierarchical terms starting from the recognition of letters, to the comprehension of words, phrases, clauses, sentences and paragraphs. In other words it is a gradual linear building up of meaning from the smaller units to the larger chunks of text. The common assumption that reading theorists had about FL reading was that the higher the FL proficiency of readers the better their reading skills. Knowledge of

the foreign culture was also an important factor that enabled foreign readers to arrive at the intended meaning of texts (Fries, 1972; Lado, 1964; Rivers, 1968). Reading thus involves two main processes as suggested by Lunzer and Dolan. The reader must establish what the writer has said and he must follow what the writer meant. (1979:10) accordingly, the readers use their linguistic background to see how words are put together.

They will also use their ability to interpret as well as their knowledge of the world to extract the message the writer is trying to convey (Widdowson, 1978; Williams, 1984; Smith, 1985). Nuttal (1982) defines reading as the ability to understand written texts by extracting the required information from them efficiently. While looking at a notice board, looking up a word in a dictionary and looking for special information from a text, normally we use different reading strategies to get what it means. Smith (1971) defines it as the act of giving attention to the written word, not only in reading symbols but also in comprehending the intended meaning. The writer and reader interaction through the text for the comprehension purpose is also viewed as reading by Widdowson (1979:105). What is significant in all these definitions is that there is no effective reading without understanding. So reading is more than just being able to recognize letters, words and sentences and read them aloud as known traditionally(although letter identification, and word recognition are of course essential). It involves getting meaning, understanding and interpreting what is read. What we need is reading that goes hand in hand with understanding and comprehension of what is read or in Smith's words "making sense" (Smith, 1982) of what one is doing. Traditionally too, reading is the reader's ability in answering the questions that follow a certain text. This happens especially in schools. But recent approaches, as mentioned above, see reading from a different point of view. According to Smith (1982), before someone reads a text, the idea of questions is seen as important to render the process of reading as a purposeful and more meaningful activity. Asking questions before reading makes it possible and relatively easy to look for answers. Smith makes these issues clear: The twin foundations of reading are to be

able to ask specific questions (make predictions) in the first place and to know how and where to look at print so that there is at least a chance of getting these questions answered (1982:166). It seems obvious that this is a shift from reading to answering comprehension questions, which only measure the “outcomes” without showing the process or purpose for why one reads. This shift has had a positive influence on the design of reading materials, tasks and activities. The idea of finding a precise and specific definition of reading is not an easy one. The reason for this have been attributed by Alderson and Urquhart (1984) to the unquestionable complexity of the act of reading and to the fact that previous research had not approached the study of the reading process comprehensively from a number of inter-related perspectives, as they suggest should have been done: It follows from our positing that reading is a complex activity, that the study of reading must be inter-disciplinary. If the ability involves so many aspects of language, cognition, life and learning then no one academic discipline can claim to have the correct view of what is crucial in reading: Linguistics certainly not, probably not even applied linguistics. Cognitive and educational psychology are clearly centrally involved, sociology and sociolinguistics, information theory, the study of communication system and doubtless other disciplines all bear upon an adequate study of reading. (1984: xxvii) According to all the definitions mentioned it can be concluded that reading means bring meaning to a text in order to get meaning from it or an oral interpretation of written language.

2.2. Reading comprehension

Reading comprehension can be defined as understanding the written message that has been deciphered or decoded. This includes the ability to “select, encode, interpret, and retrieve relevant information, use story structure and background information, and draw inferences from the information presented” (Lorch, Berthiaume, Milich, & van den Broek, 2007).

2.3. Comprehension and reading comprehension

Comprehension depends on knowledge. Comprehension as defined by Bernhardt (1987), is the process of relating new, or incoming information to information already

stored in the memory (background knowledge). Obviously, during the process of reading, readers must not only look at the words on the pages (bottom-up processing), but also activate background knowledge (topdown processing) and then build all the elements into comprehension (Rumelhart, 1980). Furthermore according to Bernhardt` organization, reading comprehension can be defined as,

1) is topic depends 2) involves making appropriate decisions from the beginning of a text 3) involves the selection of critical features of processing 4) involves the rapid processing of text 5) involves meta- cognitive awareness of comprehension process.

The first two items above so-called "schemata" (background knowledge). The third item involves scanning, which is looking for information in the text. The fourth item is called skimming, which is reading quickly for general idea. As far as the third and fourth parts (new information on the pages) are concerned, slow speed in reading seem to have limited use of them, and also limited comprehension. Study reveals that readers, who are unsuccessful, usually make more eye contact per line, rather spending much time each fixation (Tullius, 1971). Similarly, Smith (1971) argued that the visual system is made up of three features:

- 1) The brain does not see everything that is in front of the eyes
- 2) The brain does not see anything that is in front of the eyes immediately
- 3) The brain does not receive information from the eyes.

So, reading must be "fast, selective and dependent on non-visual information". To be more specific, reading is related to both background knowledge and rate development could result in better comprehension. Hosenfeld(1977) dealt with what successful and unsuccessful do to assign meaning to printed text. Successful readers keep the meaning of the passage in mind, reading in broad phrases, and skipping nonessential words; the readers guess the meaning of new words from the context. In contrast, unsuccessful readers lose the meaning of sentences as soon as they decode them. They read word by word in short phrases; rarely skipping nonessential words, and turns to the glossary in order to find the meaning of new words.

2.4 Importance of Reading Comprehension

Reading cannot be viewed in isolation of comprehension; reading is nothing more than tracking symbols on a page with your eyes and sounding them out. Imagine being handed a story written in a language you totally ignore like Sumerian Cuneiform with no understanding of their meaning. You may like the look of the letters or characters and appreciate the words aesthetically and even be able to draw some small bits of meaning from the page, but you are not truly reading the story. Byrne (1971) in *English Teaching Extracts* writes that the words on the page have no meaning. They are simply symbols. People read for many reasons but understanding is always a part of their purpose. Reading comprehension is important because without it reading doesn't provide the reader with any information. Beyond this, Brown (2000) confirms that reading comprehension is essential to life. Much has been written about the importance of functional literacy. In order to survive and thrive in today's world individuals must be able to comprehend basic texts such as bills, housing agreements (leases, purchase contracts), and directions on packaging and transportation documents (bus and train schedules, maps, travel directions). Cal Pham (1996 p.30) on Reading Comprehension says reading comprehension is a critical component of functional literacy. Think of the potentially dire effects of not being able to comprehend dosage directions on a bottle of medicine or warnings on a container of dangerous chemicals. With the ability to comprehend what they read, people are able not only to live safely and productively, but also to continue to develop socially, emotionally and intellectually.

2.5 Reading in L1 and L2

Having many available linguistics resources, Vorhaus I(1984) observed the readers, when reading in L1, are integrators who could smoothly use their native language for developing concept in interaction with the author's ideas. They employ their language knowledge (e.g. structure, grammar, or words) well even if they may not understand what they are reading. In addition, they are capable of using strategies like background knowledge to deal with what is to them at first incomprehensible.

L2 readers, however, are limited by their knowledge of the grammar and vocabulary of the target language, and must struggle to understand the content. In order to perceive the author's ideas explicitly, readers often regard the vocabulary as the most important component of the language, as well as the turning point of access to comprehension. Seliger found, therefore, readers often separate the whole content into isolated pieces, and focus their attention on the individual word-units.

The desire to know every word in terms of its dictionary meaning usually leads the students to view reading in the new language as a process of decoding word by word. Obviously, when reading in L1, the readers can more easily consider the content as a whole. Even if they encounter unfamiliar words, they skip to the next, and try to finish the reading. Conversely, reading in L2, readers automatically separate the whole article into fragment sentences or words, and they, thereby, acquire isolated, divided meaning, lack of continuity, which is so-called "short-term memory" (Eskey, 1986, p.10). In this situation comprehension is not clear because readers just acquire a series of discrete meanings, and they have to reread in order to connect all of the individual meanings into a whole. Short-term memory can cause difficulties in reading comprehension process.

2.6 Types of Reading

The reading skill can be divided into two main types; intensive and extensive reading. Hafiz and Tudor compared between the two types:

In intensive reading activities learners are in the main exposed to relatively short texts which are used either to exemplify specific aspects of the lexical, syntactic or discourse system of the L2, or to provide the basis for targeted reading strategy practice; the goal of extensive reading, on the other hand, is to flood learners with large quantities of L2 input with few or possibly no specific tasks to perform on this material. (1989:5).

2.6.1 Intensive Reading

Intensive reading refers to detailed focus on the reading texts which usually take place in classrooms. It tends to develop the strategies of the learners. In this respect,

Nuttal(1962: 23) claims that: "The intensive reading lesson is intended primarily to train students in reading strategies." However, sometimes the learner may prefer to read the text in which he/she divides it into parts and then to read each part alone in order to comprehend it very well in palmer's view (1964) on intensive reading, the learner focuses on using the dictionary in which he has to analyze, compare and translate while reading texts Therefore, the use of a dictionary helps the learner to progress in his language learning process.

However, this may interrupt the learner's reading speed. In the same line of thought, the Reading comprehension task for Harmer means not to stop for every word neither to analyze everything (Harmer 2001), that is to say the reader should not stop at every single point or analyze each idea alone, but rather he should make a general comprehension of the text and to extract the meaning by taking the content into account.

2.6.2. Extensive Reading

Extensive reading refers to reading that learners often do away from the classroom for instance: reading novels, magazines, and newspaper articlesetc

Hafiz and Tudor mentioned that: (The pedagogical value attributed to extensive reading is based on the assumption that exposing learners to large quantities of meaningful and interesting L2 material will in the long run produce a beneficial effect on the learners command of the L2.(1989:5).

Extensive readers read for the sake of pleasure. This type is labeled as joyful reading by Rechar Day in 1998. Through extensive reading, the reader enriches his background knowledge, and expands his vocabulary; he also recognizes the spelling forms. Therefore, the learner chooses his/her own books and reads at his/her pace. Then, the teacher has to guide learners to select books depending on their levels of comprehension that lead to comprehensible input.

According to Day and Bamford (1998), extensive reading is a part of second language curriculum i.e. as a separate course, as a part of an existing reading course, as a non-credit addition to existing course, and as an extra-curricular activity. Thus, students

have to rely on themselves and gain knowledge from their readings outside the classroom.

2.7 Reading Sub-skills

There are different types of learning strategies which help learners to solve their problems and improve their language competency. Many research works have been done on learning strategies and studied the effectiveness of using them in the learning process. To start with, Oxford (1990) gives a definition to the concept of reading strategies as actions that make the learning task easier, enjoyable, effective and self-directed. The term strategy refers to learning techniques that help learners solve the problems they face whenever they read. For Anderson (1991) reading strategies mean cognitive steps which readers can take into account in order to acquire, store and retrieve data.

In reading comprehension, there exist four major categories of strategies: skimming, scanning, careful-reading and predicting. These are considered at the same time as the sub-skills of reading.

In this sense, Phan states that, the strategies may involve skimming, scanning, guessing, recognizing cognates and word families, reading for meaning, predicting, activating general knowledge, making inferences, and separating main ideas from supporting ideas. (Phan 2006:01).

2.7.1. Skimming:

Skimming is a common technique in reading comprehension. It is a method of rapidly moving the eyes over text with the purpose of getting only the main ideas and a general overview of the content. In other words, skimming is to read more in less time and to help the learner to cover a vast amount of material very quickly. In sum, when skimming, learners go through the text quickly in order to gist it and have an idea of the writer's intention.

2.7.2. Scanning

Scanning is a speed-reading technique and a useful reading activity in which learners need specific information without dealing with the whole text. This means, they do not

read all the text word by word, but rather they extract specific information (names, dates, statistics) without reading all the passage. In short, when scanning, learners try to locate particular information by moving their eyes over the text rapidly, and then get the required information to complete a certain task.

2.7.3. Careful reading

This reading strategy requires from the reader to obtain detailed information from the entire text. Moreover, the reader is expected to read slowly, and to reread the text for the sake of connecting and comparing information with his prior knowledge. In the same line of thought, Urquhart and Weir (1998) argue that this type of reading takes the meaning of reading to learn i.e., the learner reads for the sake of learning also its reading speed is rather slower than skimming and scanning since the reader attempts to obtain detailed information.

2.7.4. Predicting

Predicting is a very useful sub-skill that the reader may use it in which he makes predictions relying on his previous knowledge, and then extracts the meaning of the text even if there are exist unfamiliar words in the text so that, he gets the meaning from the whole passage. Learners use information from graphics, text and experiences to anticipate what will be read, viewed, heard and to actively adjust to comprehension while reading, for example before and after a chart, students" list predictions before and after reading. As they read, students either confirm or reject their predictions.

2.8 Reading Strategies

Reading Strategies can be defined as "plans for solving problems encountered in constructing meaning " Duffy 1993 :232.They range from bottom –up vocabulary strategies, such as looking up an unknown word in the dictionary, to more comprehensive actions, such as connecting what is being read to the reader's background knowledge. More proficient readers use different type of strategies and they use them in different ways. "More over reading strategies can be taught to student and when taught Strategies help improve student performance on tests of comprehension and recall (Pearson and Fielding, 1991). In TESOL little has been

published that relates to teaching reading strategies in an ongoing class room reading program. This is not the case, however, in the LI field, and one answer to the pedagogical dilemma is to adapt methods that have been found successful in teaching to an ESL situation. In the teaching approach of Brown and Palincsar (1989). For example, students are taught for reading strategies: summarizing, predicting, clarifying and asking questions. Versions of this have been tried with L2 students and have been found helpful (Cotterall 1990 Hewitt, 1995) in the LI (Jack AND Willy: 200). Field today, however, state of the art reading strategies instruction has moved to a more comprehensive approach as Methodology in Language Teaching. Reading strategies' are great interest to the field of reading research in recent years reading strategies, as goal-oriented procedures, serve of achievement research has shed light on the perception of strategies and strategies use in reading comprehension. since the 1970s there have been a variety of reading strategies advocated by second language learning theorists to teach students to read well (Carrell,1989). Notable researchers such as Brown (2001)and Flavell (1981)have studied several cognitive strategies and effective reading.

Flavell first introduced the term metacognition in his 1976 article, saying that metacognition is defined as "one's knowledge concerning one's own cognitive processes and outcomes or anything related to them" Flavell further explains that metacognition is "the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in the service of some concrete goal or objective" Flavell (1977), and Miller (2002) point out that the improvement of metacognitive skills is a key to the success of the formal operational stage, in Piaget's Theory of Cognitive Development, and that metacognition is generally fundamental in a variety of areas, such as oral skills.

Flavell's (1979) model of metacognition is the foundation for research in the field of metacognition today. According to his model, there are four categories: (1) metacognitive knowledge, (2) metacognitive experiences, (3) goals/tasks (4)

actions/strategies. He reported that people monitor their cognitive process by using components described in these four categories.

Declarative knowledge refers to “knowledge that a person may have about his or her abilities and about the learning characteristics that affect cognitive processing. In the example of reading, declarative knowledge indicates a learner’s understanding about what reading strategies are; knowing what summarizing, skimming, inferring, and taking notes are declarative knowledge. Procedural knowledge is identified “Knowledge of how to execute procedures such as learning strategies”.

2.8.1 Learners Reading Strategies

There are some strategies for teaching English language learners. They are introduced to the basic theory principles, and assessment strategies underling the effective teacher of students who are in the process of acquiring English as a second language.

2.8.1.1 Gist strategy

Gist or generating interaction between schemata and text, (Gunning Gam, 1982) -is strategy for supporting comprehension of information text. Gist is especially helpful when students are required to read long text containing a significant amount of new information. Students work in cooperative groups and read section of the text silently. After each short section is read silently, the members of the group work collaboratively to generate one sentence that summarizes the gist of the passage, in some very dense text. This summary sentence is generated paragraph by paragraph; once a sentence is generated member of the group write it on their own papers so that each group member ends up with a concise. This is particularly effective strategy for use with English language learners because the group members have chance to discuss and clarify meaning as they decide on the best summary for the section or paragraph.

2.10.2 Guided Reading Strategy (Founts &Panel, 1996) is an approach to reading in small group setting, while providing individual coaching. The students are taught in groups of four to six, all reading an approximately the same level, teachers use running records to determine the students reading levels, their use of cueing systems (attention to phonics, meaning, word order, sentence structure, and the relation of the

text of the student's prior experiences) running record also determine the student use of self-correction and their attention to self-monitoring of whether their reading making sense. A guide reading lesson begins with the book walk, in which the students and teacher look through the book and predict what will happen it then progresses through multiple reading of the book with students reading to themselves at their own pace. During this time the teacher move from child to child in the group listening to them read and coaching them on decoding self-monitoring and comprehension strategies. This coaching is done by asking the students questions like "Does that word start with a?" teachers then conduct mini lessons based on the need of the students identified during coaching session. A teacher uses this opportunity to discuss the story and determine with the student need support in understanding what they have read. Vocabulary is discussed, clarifying and related it to the story. The illustrations, and the students, back ground experiences. The group may they engage in writing phonics or at her skills actives.

2.10.3 Free Voluntary Reading Strategy

Free voluntary reading: (Keas hen, 1993) - is powerful tool for involving student in the reading of English text. Free voluntary or (FVR) is a system for encouraging silent - self-selected reading of enjoyable books written at the students, independent levels. It has been found to support reading comprehension, writing grammar, and spelling and vocabulary development even though that text read are writhen at an easy reading level. Series of books in which the reader become familiar with the structure main characters , and setting in the first book of series and then reads sequels are specially appropriate for building vocabulary and comprehension in readers with limited English vocabularies . Although free voluntary reading has been criticized (Hernandez ,1997)- as difficult implement because of the large numbers of books required, it has been shown to be effective for English language learners because of the power in exposing them to a large volume of English reading and the anxiety reducing power of easy reading.

2.8.1.2 Imaging

(Chamot & Malay, 1994) imaging is strategy that encourages students to create and imagine their mind to support the understanding of concept or problem to be solved. The teacher is supporting students to create mind, pictures that enable them to imagine the sense being described in the text being read or the problem to be solved. Once images are created in the students minds- the teacher encourage the students to describe what can they see - this gives a teacher an opportunity to interact with the student to support their understanding. Research in reading comprehension (Twin, 1991)-has shown imaging attribute of effective readers which is often not employed by poor readers.

2.8.1.3 Shared Reading Strategies

This strategy (Hold away, 1979) is a strategy that teachers use to read books charts and other text with students when the text is too difficult for the students and the teacher read the text aloud together. Even when the students cannot read along with the teacher, they are hearing the words pronounced as their eyes follow the text. Shared reading can also be done with multiple copies of small books, poetry chart song lyrics or any text as long as students and teacher can all so the words (Tom Pkins,1997)- using shared reading with English language learners is appropriate because the teacher has opportunities to use illustrations to support vocabulary development, to use think- aloud strategies to teach problem-solving approaches, and to integrated, verbal interactions to support comprehension (Gibbons,1993)-when using shared reading with(ELL) it becomes especially important to build background knowledge and experiences that help the students to understand the meaning of the text.

2.9 Teaching Reading Strategies

It can be said that in a reading lesson, most of the activities supervision. He/she help the students before, during and after reading a text. Accordingly, the teacher my incorporate arrange of strategies that may facilitate students, reading comprehension.

This study is confined to three reading strategies that each may have effective role in comprehending a text. These strategies are the following ones.

2.9.1 Predicting

Before entering the word of the text, the teacher may need to prepare his/ her students about what they are going to learn. Moreover, he/she may aim at activating the background provide a title for the text to the students and ask them to predict what the atmosphere of the text will be like. It can be argued that prediction refers to guessing what comes next in a text. Before reading a text, students try to predict, what will be about on the basis of its title? Depending on their prior knowledge of the subject or their knowledge of the language, students may guess the right meaning. Sometimes prediction may depend on the illustration images, diagrams, picture, etc., that they may accompany the text and may support its meaning.

2.9.2 Extracting Main Ideas

After making some prediction, students have to skim over to confirm what they have predicted. Then, the teacher may ask some questions focusing on the main ideas of the text. It can be said, at this stage, that a detailed reading of the text is needed for more comprehension of its contend and the language used in it. In doing this activity, students try show sentences that summarize the main ideas of the individual paragraphs in the text or show the sentence that provides the main idea of the whole text. The teacher may help the students in this activity by giving those options on the board and asking them to choose the option that gives the most accurate summary of the text. It can be recognized that extraction of main ideas is a while- reading strategy that may avoid resorting to translation, or understanding the text as a whole.

2.9.3 Evaluation of the Text

Evaluation takes place as a post-reading strategy. At this stage, the Teacher may need to check the students, comprehension of the text. He/ she may ask them to compare the text content area with what they already knew about it (either through past readings or their personal experiences).The teacher may also search for what sort of opinions or information students can bring to the text as taking from it.

It can be argued that the most important advantage that can be gained from evaluation of the text is acquainting students to various genres of text. Students try to identify different kinds of texts, who write them and why. The role of the teacher in this activity may be more passive as it a learner centered activity and it can take the form of writing summaries or making discussions as well.

2.10 Other Strategies for Teaching Reading Comprehension

Teacher of English language have realized that teaching reading comprehension couldn't be a piece of cake unless useful and effective strategies are being implemented. The difficulties associated with reading involve a number of cognitive processes that constitute the main core in understanding a text. To overcome and tackle the problematic areas encountered EFL students in reading classes, the researcher compiled a number of strategies that are presented by different authors to be as a starting point for teachers. Some of these contributions are stated in the following: Green all and Swan (1986:3-4) have proposed some elements to be taken into account when teaching reading comprehension.

Their contributions are stated in the following points:

- a. Extracting main ideas.
- b. Reading for specific information.
- c. Predicting.
- d. Checking comprehension.
- e. Inferring.
- f. Dealing with unfamiliar word.
- g. Linking ideas.
- h. Understanding complex sentences.
- i. Understanding writers' style.
- j. Evaluating the text.
- k. Reading to text.

Machete: al (2002:66) has proposed some practical lips to be considered when teaching reading comprehension. It includes the following points:

a. Modeling

Show students how to read by thinking about as you read sample text for them and remember that reading aloud is essentially a pronunciation exercise for the readers.

b. Preparation

Access student's schemata by asking question on their knowledge of the topic. Build schemata with discussion, picture, videos, exploration, and so on also ask students to consider the whole text before they begin to read in terms of length, difficulty, interest and general content. Draw students, attention to any picture, icons, bold or italicized words and sun heading.

c. Negotiation

Allow students to express their opinion about the text item of difficulty, interest, etc. Also give students opportunity to choose from a selection of text or allow them to suggest text for reading. Reading together in class and orally practice the skills (hypothesizing, differencing confirming questioning, predicting, drawing on cultural and linguistic schema) needed for success in developing reading. Teach your student through skill building to rely more on themselves than on you.

d. Expectation

Make sure texts are not always processed in exactly the same way, since predictability can dampen students, enthusiasm. Provide traditional "end of text" questions before the reading assignment is given to down play the role of memorization. Introduce the notion of tolerance of ambiguity. The expectations of 100% comprehension of a text will likely lead to frustration.

e. Motivation

Encourage USSR (Uninterrupted Sustained Silent Reading). Don't: ban any topic or try of reading material. Reward efforts to read for pleasure outside of class. Schedule DEAR (Drop Everything and Read) time into your curriculum.

f. Level

Select text are neither too easy nor too difficult, give students the opportunity to feel both challenged and successful and emphasized interest and relevance in the selection

of text, rather than level of difficulty. Remember that authentic material has more potential of success than a contrived text and have students read demanding text selectively, focusing on expects or facets of the text rather than on the entire document. LE (1997) offers some tips for helping students develop such reading skills. They have divided their strategies into three stages. Firs start-up strategies, second tips during or after reading and finally, post- reading review.

1. Startup strategies: This includes the following points:

- Anticipating author's main ideas.
- Making connection: previous knowledge with the new topics.
- previewing vocabulary.
- Focusing on question.

2. Tips for during or after reading: This includes the following points:

- Recognize the writer's style and strategies.
- Recognize the writer's style and strategies.
- Implement the strategy of whose "voice "? Whose "ears"?
- Whose voice speaks from any printed pages?
- Identify the author's style.
- Look for five (Was) (Who, What, Where, When, Why).
- Note comparison, contrasts.
- Recognize cause and effect arguments.
- Don't over-interpret sequence?

3. Post - reading Review: This includes the following points:

- Paraphrasing
- Order: listing the author's key point then ranks them in order of importance.
- True / False: discrimination between facts and opinions.
- Langer issue: connects the author's argument to a theme or issue in the course they are taking.
- Evaluation Martin (1991) has suggested some strategies of the area of improving reading comprehension. His contributions are stated are stated as follows:

- a. Develop abroad background.
- b. Know the structure of paragraphs.
- c. Identify the type of reasoning.
- d. Anticipate and predict.
- e. Look for the method of organization.
- f. Create motivation and interest.
- g. Pay attention to supporting cues.
- h. Highlight, summarize and review.
- I. Build a good vocabulary.
- j. Use a systematic reading technique like SQRs.
- k. Monitor effectiveness.

Grellet,(1981:14) suggested the following techniques:

a. Sensitizing:

The aim of this is to provide exercises that will develop the strategies that students need to cope with unfamiliar word complex or apparently obscure sentences. It should ensure that the students don't stumble on every difficulty or get discouraged from the outside.

b. Inference:

Inference means making use of syntactic, logical and cultural clues to discover the meaning of unknown elements. If these are words, the word- formation and derivation will also play an important. Students are encouraged to make agues at the meaning of words they do not know rather than look them up in dictionary.

c. Understanding Relations within sentences:

Inability to infer the meaning of unknown elements often causes discouragement and apprehension in students when they are faced with a new text. A similar problem arises when students are unable to get an immediate grasp of sentence structures .This will be a definite handicap in the case of text with relating embedded clause and complex structures. It is therefore, important to train student, to look firs for the "core" of sentence (subject + verb).In order to do that, the learners can be asked to divide

passages into sense group and underline, box or recognize in some other way the important elements of each sentence in a passage.

d. Linking sentence and ideas:

Another area in which it is essential to prepare the students is recognizing the various devices used to create textual cohesion and more particularly the use of reference and link-word. It is important for the students to realize that a text is not made up of related ideas that are announced, introduced and taken up again later throughout the passage with the help of references.

e. Improving reading speed:

Students who read too slowly will easily get discouraged. They will also tend to stumble on unfamiliar word and fail to grasp the general meaning of the passage. One of the most common ways of increasing reading speed as it is suggested by Grilled (1981:16): “Is to give students passages to read and to ask them to time themselves”. A conversation table, taking the length of the text and the reading time into account, will tell them what their reading speed is and this will make it easier for them to try and read little faster every time. Reading should also be followed by comprehension questions or activities since reading speed should not be developed at the expense of comprehension.

f. From skimming to scanning:

One of the most important points to keep in mind when teaching reading comprehension is that there is not type of reading but several according to one’s reason for reading. Students will never read efficiently unless; they can adapt their reading speed and technique to their aim when read. By reading all texts in the same way, students would waste time and fail to remember points of importance to them because they would absorb too much-non- essential information. This type of technique makes students more confident and efficient readers. This technique involves some other technique like predicting and previewing.

g. Predicting:

Unlike predicting, previewing is a way specific technique which involves using the table of contents, the appendix, the preface, and the chapter and paragraph headings in order to find out where the required information is likely to be. It is particularly useful when studying skimming and scanning as a skill.

h. Anticipation:

Motivation is of great importance when reading. Partly because most of what we usually read is what we want to read (books, magazines, advertisements) but also because being motivated means that we start reading the text prepared to find a number of things in it, expecting to find answers to a number of questions and specific information or ideas we are interested in.

2.11 The Problems of Teaching Reading

The major problems for most readers of foreign language are inadequate knowledge of both content and the form of what they are trying to read. Human (1989) and Nuttal (1982) these skills which include word attack and text attack skills seem to be the most relevant to our situation. Effective reading depends upon the difficulty of the text, the unknown words in the text and background knowledge of the reader. It all contributes to the reading successfully getting the message of the writer. I have tried to make a point that difficult level in reading text Unfortunately, vocabulary provides the most obvious example of this, that there are also the problems of a more complex grammar and culture bound assumption about what any reader may be assumed to know. The following are the main problems of reading:

2.11.1 Vocabulary

The first and foremost problems were unknown or difficult words. Such vocabulary items which students thought were difficult for them to provide to be serious deterrent in the way of reading comprehension. Moderate readers can recognize about 50000 different words in reading while graded readers go higher than 3500 words level. The teacher can teach his students the skill of inferring meaning from Context and to organize aerogramme of vocabulary building and increase the material they read.

2.11.2 Structure Difficulty

Complex sentence structure create a problem for the proper understanding of the text- consequently, along numbers of students do not benefit much from such texts which contain difficult sentence structure. Many commentators have identified (syntactical complexity). As accentual area of difficulty, other scholars have discussed problems due to a lack of extensive vocabulary or range of terminology specific to special field of study. In a foreign language, knowing the meaning of words alone doesn't help the reader to understand he/she reads. This doesn't mean that vocabulary is unimportant aspect of reading, but the greater problems lies in the language itself, with structural features such as complicated sentence structures and stylistic devices making reading difficult.

2.11.3 Text Difficulty

For assessing text difficulty teachers often find difficulty suitable text for students even when following publisher's guidelines, the result can be frustration for students and teachers alike. The knowledge about the reader characteristic, the reading task, surface and deeper features of the text also the knowledge about the modalities represented in the text .all these elements contribute to how difficult or easy text may be for a reader at any of one time. The researcher has observed that a text which reflects and contains difficult words does not coordinate with background knowledge of the students and they do not know anything about the subject under discussion, they feel it completely difficult to understand the text. The researcher notices that, many readers suffer from a lack of confidence in their skill when they read a text. They believe that they should comprehend every word in the text; they may deliberately read very slowly. Very large part of the reading teachers' job is therefore, a kind of confidence building.

2.12 Types of Reading Comprehension

2.12.1. Literal comprehension:

This refer to reading in order to retain remember, or recall the information explicitly contain in passage.

2.12.2. Inferential comprehension:

It is reading to find information which is not explicitly stated in passage.

2.12.3. Evaluation comprehension:

It is reading to compare information in a passage with the reader's knowledge and values.

2.12.4. Appreciative comprehension:

It is reading to gain an emotional or other kind of valued response from a passage. (Jamal Ahmed:200:44). 2.15 Dilemma Effects in Reading Comprehension.

2.13 The Influence of vocabulary:

Vocabulary is critical not only for reading but also for reading but also for all L2 skills, for academic performance and for related background knowledge. Vocabulary is one of the problems that confronting EFL learners because they cannot understand their idea clearly as they would like to and they cannot grasp the ideas that transmitted to them, they cannot understand news cast or radio. Their writing and reading abilities are hampered by their limited vocabulary. Stomaching vocabulary is an important part of language learning. It helps in practicing useful skills in both receptive and productive language use; in addition to that, vocabulary is necessary in communication. Parry (1991:649) ads: "To establish a firm foundation for the vocabulary building to be done in academic courses, we should encourage our students to read as much as they can before they leave our classes". The above quotation shows the importance of vocabulary in reading comprehension, and that students need to know how much vocabulary can be learned by L2 learners.

2.14 Cultural Background Effects Reading

The differences in cultural ethos can cause problem even for a native speaker who reads something from a place far from his/ her own. Cultural background also plays a supporting and helps the reader anticipate the discourse organization of the text as well as disambiguate word- level and causal meaning of new information is incorporates into the text. Sine culture seems to be the super set of language, therefore, the relation

between the two will be examined. That is the nature of language form one hand, is said to be closely related to demand that people make on it.

Ruff (1988:44) and Bend (1983:18) states: “Every language has its own way of expressing things according to its speaker visions of the word”. Every group of people can express irony, sorrow, etc. in their own way. The culture of people who speak language is reflected in that language. Consequently, every language has specific vocabulary, the concept of which is totally different in other language “Because of natural relation between equivalent words and expression into two languages”. From the above quotation, reading is considered as interaction process between the writer and the reader; therefore, the reader should have insight into the culture of the target language. Since, the objective of the foreign language teaching is to promote international understanding and enabling students to gain access to the life and thought of people who speak another language.

2.15 Comprehension

In this dilemma, few teachers are prepared to teach students how to make use of discourse information to build comprehension, even for reading. Moreover, few reading circular focus on text structure and discourse organization as consistent components of instruction. Yet, L2readers need to learn recognizes and use text structure signaling devices and discourse organization as way to comprehended texts better. Text structure signaling involves the use of text signals that connect sentences and parts of sentences together, these signals include pronouns, definite articles, repetitions of words and synonyms. Discourse organization more broadly refers to larger units of text, how they are organized and how they can be recognized. Good readers are able to recognize problem- solution and cause- effect sequences in text; they can recognize comparison and contrast as well as strong classification systems that are being explained. Signaling information and discourse organization both regulate the amount of information presented in a text as well as the way in which this new information is introduced. All of these features of discourse contribute to comprehension, particularly with more difficult tasks. Goldman and Pakestraw

(200:325) stated: “Interventions that focus on genre structure indicated that instruction that improves readers' awareness of how to identify different genre structures can be effective in improving memory and learning of text content” As far as text structure is concerned Goldman and Pakestraw (2000: 323) stated “knowledge of structure is clearly important in efficient and strategic processing of text”. Alexander and Jetton (2000; 292) added: “knowledge as they construct their personal interpretation of the text” The above quotations show that the awareness of text structure build comprehension abilities and also may be very important for students who read L2text in more advanced academic setting and patterns of discourse organization.

2.15.1 Socio- cultural Aspects and Linguistic Knowledge Ease Comprehension Process

In each cultural context, assumptions about how to use text resources tend to differ. Some social groups see text as sacred and unchanging others consider text as serving utilitarian purposes but not to be highly valued, others view text as a source of truth to be sustained, yet others value text as alternative interpretations of realities and facts that can be disputed. In each setting individuals are socialized in their L1 education to engage with text in specified ways. L2 readers moving from one orientation to another are likely to encounter some difficulties in reading text for purposes that don't complement cultural assumptions. In almost all cases L 2 students will have some difficulties with forming assumptions presented in L2 text, when these texts make use of cultural assumptions that L2 student don't share. These mismatches in assumptions may cause serious problems when L2 students read literary and contemporary – cultural text. Alderson (2000: 25 stated “What means to be literate, how this literacy is valued, used and displayed, will vary from culture to culture...” They are a number of longer cultural and social issues that operate outside of the specific classroom content. Reading development and reading instruction are strongly influenced by parental and community attitudes toward reading uses of literacy. Reading is fundamentally a linguistic process rather than a reasoning process, though this aspect of reading is often downplayed as is the visual aspect. It makes little sense to discuss or interpret a

text linguistically. For example, anyone who has tried to read a text on political policy written in Chinese – without knowing any Chinese characters will quickly recognize the primacy of linguistic processes for reading comprehension. If we cannot understand any words, we are not going to comprehend the text. The Italian children learn read rapidly, and only six months after the start of formal reading instructions, they are highly accurate at reading both words and non- words. German although less transparent than Italian, has very consistent grapheme –phoneme correspondence. The demands placed on working memory in successfully applying grapheme – phoneme correspondence to reading are much lower for a regular orthography than an irregular or orthography like English. The social issues mentioned above shows that the cultural aspects and linguistic knowledge help to understand a text and ease comprehension process.

2.15.2 The Role of Strategies in Reading Comprehension

A fourth in structural problem centers on the role of strategies in reading comprehension abilities. Everyone agrees that they are important. Reading strategies and strategy instruction are relatively easy to teach. The goal of reading instruction is not to teach individual reading strategies but rather to develop strategic reader, a developmental process that requires intensive in structural efforts over a considerable period of time. This goal is much more difficult to accomplish than teaching a set of individual strategies. Schunk (2000: 211) and Pressley (1998:211) “An unfortunate finding of many research studies is that students can learn strategies and apply them effectively, but fail to maintain their use over time or generalize them beyond the in structural setting”. Many factors impede strategy transfer, including not understanding that the strategy is appropriate for different settings ...etc. “The teachers were aware that students did not learn strategies quickly: simplistic use of strategies across a wide range of tasks and materials occurred only after extensive practice; which included struggling to adopt strategies to a wide range of academic problems”. The above – mentioned quotation shows that reading strategies may be very important for students who read L 2text.The problem of teaching is that strategic reading abilities require a

lot of practice over an extended period of time and a lot of exposure to reading. Readers need to work out, at a more conscious problem – solving level, strategy responses that seem to work in a given setting.

2.16 Online Syllabus Description

The ONLINE materials is a description and plan for a course designed to improve student learning, facilitates faculty teaching, improves communications between faculty members about their courses, and assists with monitoring program quality. Altman and Cashin stated that, “The primary purpose of a syllabus is to communicate to one’s students what the course is about, why the course is taught, where it is going, and what will be required of the students for them to complete the course with a passing grade. Additionally, Parkes, Fix, and Harris suggest that the syllabus serves as a contract between the instructor and the learner. Typically focused on the learner, well-written syllabi communicate to students what is expected to succeed in a course and what competencies must be mastered. Thus, syllabi assist faculty members with communicating with their learners and help learners understand what is expected of them.

2.17 Perspective of new Literacies: In an attempt to capture the nature of online literacy, many have begun to use the terms new literacies, which means in fact many different things to many different people. The various definitions of new literacies range from social practices (Street, 1999) or new Discourses (Gee, 2003) that emerge with new technologies to new semiotic or cultural contexts made possible by new technologies (Kress, 2004; Lemke, 2002). While multiple perspectives associated with the term new literacies differ from one another, the most recent review (Coiro et al., 2008) concludes that most share a set of common assumptions: (1) new literacies include the new skills, strategies, dispositions, and social practices that are required by new technologies for information and communication; (2) new literacies are central to full participation in a global community; (3) new literacies regularly change as their defining technologies change; and (4) new literacies are multifaceted and our understanding of them benefits from multiple points of view.

For this research, I would like to conceptualize my work within a new literacies theory of online reading comprehension (Castek et al., 2007; Leu et al., 2004). More specifically, to enrich my understanding of online reading, I subscribe to the theoretical work which argues that the nature of literacy is rapidly changing as new technologies emerge (Alexander & Jetton, 2000; Lankshear&Knobel, 2003). Within this perspective, Leu et al. identify five practices that take place during online reading process: (1) identifying important questions; (2) locating information; (3) critically evaluating information; (4) synthesizing information; and (5) communicating information. Further, they posit that while the aforementioned skills appear to overlap with offline reading practices, traditional reading skills are not sufficient to comprehend online information on the Internet

2.18 Reading Strategy Assessment

Reading researchers have adopted qualitative and quantitative assessment methodologies to explore how effective strategies are for learning. While every effort has been made to document how learners use strategies, Chamot (2007) argued that using strategies, which are mental processes, cannot be observed. Hence, researchers have relied, to a large extent, on self-reporting verbalization. Despite their lack of veridicality and imperfection, self-reported data still provide useful information about internal cognitive processing (Afflerbach, 2000). Chamot further concluded that self-report may be the single best way to discover learners' mental processing.

In fact, there is a wide spectrum of methods researchers can employ to examine; however, each assessment technique has its own appropriate uses and limitations. Robson (1993) emphasized that whatever method a researcher adopts, he or she must take the main purpose of the study into consideration.

In this section, the following main research methods and procedures used to gather data on reading strategies are discussed: (1) written questionnaires; (2) oral interviews; (3) thinkaloud protocols; and (4) journals.

2.18.1 Written Questionnaires:

As a self-report method, questionnaires have become the most frequently and widely used measurement in learning strategy research (Chamot, 2007). They are used to elicit learner responses to a set of questions; thus, it is imperative that the researcher make a decision on question format and research procedures (Cohen & Scott, 1996). Oxford and Crookall (1989) explained that written questionnaires usually cover a broad range of language learning strategies and are typically structured and objective in nature. Put differently, researchers provide little or no freedom to questionnaire respondents who are given limited choice answers.

Question items can range from those requiring “yes” or “no” responses or frequency indication, such as Likert scales to less structured or open-ended questions which ask respondents to describe their use of language learning strategies, for instance. Nunan (1992) posited that written questionnaires allow researchers to collect data which are more amenable to quantification than those gathered from such field notes as participant observing journals or the transcripts of oral language.

While written questionnaires have been proven to be effective for various research purposes, they have also been criticized due to some limitations. This type of data appears to be superficial. Also, there is very little or no examination of whether the responses are honest and serious. Often times, researchers take the view that, although analysis may be easy, interpretation of questionnaire data may be time-consuming as well as problematic (Robson, 1993).

2.18.2 Oral Interviews: Apart from questionnaires which require learners to write down their responses, researchers can conduct oral interviews in which learners describe what language learning strategies they use and how they use them. Ellis (1994) clarified that a student needs to give retrospective accounts of learning strategies he or she has utilized, which is also considered an applicable elicitation technique.

Characterized by their degree of formality, interviews can be placed along a continuum ranging from unstructured through semi-structured to structured (Nunan,

1992). Regardless of their type, interviews offer personalized information and profound insights into how learners use language learning strategies.

An unstructured interview, which the interviewer exercises little or no control over, is directed by the interviewee's responses. During a semi-structured interview, the interviewer asks a limited set of questions. This type of interview is flexible enough to allow the interviewer to generate new questions according to the direction of the interview. In a structured interview, the interviewer ensures that the interviewee is presented with a list of predetermined questions.

Nunan further claimed that, due to its flexibility the semi-structured interview appears to be the most popular among researchers, particularly those who work within an interpretative research tradition.

As per its limitations, Robson (1993) commented that this specific type of interview calls for the interviewer's skill and experience. Moreover, it has been criticized for its lack of standardization, biases that are difficult to eliminate, and the time-consuming nature of the interview.

2.18.3 Think-aloud Protocols: A think-aloud protocol is defined as: *"A moment-by-moment description which an individual gives his or her own thoughts and behaviors during the performance of a particular task"* (Gerloff, 1987, p. 137).

In attempts to report detailed observation of the learners' use of language learning strategies, researchers conduct their studies by means of the think-aloud procedures. They believe that, through this method, learners can report what is in their working memory (Ericsson & Simon, 1993; Pressley & Afflerbach, 1995). Kuusela and Paul (2000) added that reporting which happens concurrently while performing a task offers more and better information than reporting what they did retrospectively.

Oxford and Burry-Stock (1995) advocated for think-aloud protocols by indicating that they provide the most detailed information on how students implement language learning strategies; nevertheless, these protocols are typically used only on a one-to-one basis. Even though the think-aloud procedure, when compared with silent conditions, increases the time for undertaking the task, it does not affect the sequence

of thoughts (Ericsson & Simon, 1993). In relation to their limitations, Oxford and Burry-Stock further commented that they not only take a great deal of time but also reflect strategies which are task-specific only.

2.18.4 Journals: Bailey (1990) defined a diary as: “*A first-person account of a language learning or teaching experience, documented through regular, candid entries in a personal journal*” (p. 215).

Reflective journals or diaries have been increasingly employed as a research tool (Cohen & Scott, 1996). They pointed out that journal entries are learner-generated and usually unstructured; thus, a wide range of themes and issues may emerge from these documents. For instance, learners may choose to report cognitive, metacognitive, and social strategies they use to deal with language learning tasks on a daily basis. O’Rourke (1998) proposed that writing reflectively about what students learned benefits both teachers who can identify students’ learning process and students who develop their critical thinking skills and professional growth. However, as Rubin (2003) remarked, teachers and researchers alike may find that students have difficulty writing reflectively. Rather than reflect on what they had learned, some students simply used journals to keep detailed records of what they did. Further, because of their familiarity with writing descriptively, some students may have difficulty writing reflectively. Thus, Grenner (1989) suggested that it is wise ideas to avoid having students write a journal as an open-ended assignment.

B/ Previous Studies:

For providing more literature review the researcher will present, some relevant dissertation and studies connected to this study and which have been chosen from different places and times. Doubtless these dissertations had great value and effect in providing the researcher with the relevant literature, designing tools and procedures use to collect data. Results and recommendations of the previous studies, on their part helped the researcher a lot in the present study. The aim of the chapter therefore is to provide a thorough review of the contribution of some previous studies in the field of teaching reading strategies and reading comprehension.

The First Study: It was conducted by Abd Allah Adam Algazoly is entitled “Developing University Teaching Method to Improve reading skill in English” it is an unpublished M.Ed. thesis in ELT, Sudan University of science and Technology , College of Graduate studies 2008. The study aimed at improving teacher’s mode in order to teach EFL reading efficiently. It aimed also at investigating the difficulties, which faced student in teaching reading comprehension in L2. The population of this study was the teacher of English language department at Sudan University of science and Technology. It consisted also of the teachers of English language department of Alzaiem Al azhari University. The sample of this study consisted of (30) teachers at Sudan University and Alzaiem Al azhari University who have taken English language as a major subject. In this study the researcher used questionnaire to collect data. The main finding of this study as follows: a) Teachers of English language find difficulties in teaching reading comprehension. b) Teachers of English give less attention to the techniques and strategies of reading skill in the process of teaching compressions. c) The majority of teachers agree that teachers must be trained well so as to use the strategies of teaching reading comprehensions. This study is directly relevant to the present study since it focuses on teaching reading comprehension. This study and the present study are similar, because they show the importance of strategies of reading in teaching reading comprehension, but they differ in area of online reading.

The Second Study: By Abbas Abdel Rahman Babiker Al Ansari is entitled “The impact of strategies on reading comprehension” It is unpublished PhD thesis, Omdurman Islamic University 2005.

The study intended to investigate the impact of reading comprehension strategies of Sudanese University student, silent reading comprehensions performance. It also aimed at investigating the relationship between these strategies and efficient silent reading comprehension of English at the first international language of science and technology. The population of the study were (275) the first year entrants at different faculties and universities. It consisted also (150) teachers form basic and secondary levels. The sample of the study was chosen from larger population of the study. The data of the study were gathered by two measuring instrument: a) Test designed for two hundred seventy five (257) first year university entrants at different faculties and universities. b) Questionnaire given to one hundred and fifty (150) teachers from basic and secondary levels. The results have revealed that teachers both levels of education (basic and secondary) are unaware of the significant impact of reading strategies. This study is very important since attempts to analyze the impact of strategies on reading comprehension. The similarity between this study and the present study is that they both deal with role of reading strategies in comprehending English written text, but they differ in area of online reading.

The Third Study: By Ehsan Mohammed Ali Fadl Allah Idreis in title “Effective Reading Comprehension Strategies for Saudi Undergraduate students” It is unpublished PhD thesis, Sudan University of Science and Technology- 2016.

This study discussed the effect of using reading strategies on comprehending English text by EFL at tertiary education. It aimed to find out how Tabuk University students understand a text by using reading strategies. The researcher used descriptive analytical approach to carry out this study and collected data by using tools of questionnaire and tests for teachers and students respectively. The researcher used the random sampling method to choose the study sample.

This study was found that the use of reading comprehension strategies is immensely vital to understanding and enhancement of the students' standards to read in other disciplines as well. The three hypothetical statements perfectly well. The study also revealed that Reading strategies enable the students to evaluate thoroughly what they read as it enhances their understanding of the subject matter, the majority of teachers (63%) stated they strongly agree with the implementation of the strategies in question. This suggests that the introduction and utilization of these strategies is highly desirable and welcome. The study further found that reading strategies have the effect of narrowing the gap between the method of organization in reading and comprehension. The similarity between this study and the present study is that they both deal with role of reading strategies in comprehending English written text, but they differ in area of online reading.

The Fourth Study: It was conducted by Nanda M Klapwijk is entitled "Reading strategy instruction and teacher change" it is an implications for teacher training- Department of Curriculum Studies, Stellenbosch University, South Africa- May 2012. The main findings showed two main results: (1) teachers' uptake of Reading Strategy Instruction was influenced by pre-existing factors, and (2) teachers seemed to move through distinct phases in their uptake of Reading Strategy Instruction.

The similarity between this study and the present study is that they both deal with role of reading strategies in comprehending English written text, but they differ in area of online reading.

The Fifth Study: By Peter Rule in title "Reading Strategies in the Foundation Phase (Grades R-3)" It is PhD thesis, South Africa-, Sandra Land 2017.

This study sought to examine reading strategies Foundation Phase teachers use to improve learners' reading. A qualitative research case study was used. Data were collected through voice recorded semi-structured interviews with the permission of the participants in two rural purposefully selected schools. The sample consisted of four teachers from each selected school situated in the Libode District. Findings revealed that some teachers are interested in teaching reading, but others are not. Most use

shared reading, reading aloud and independent reading. Teachers diagnose the reading difficulties and put in place interventions and, where possible, prevent reading difficulties. Grade R teachers have not been trained on how to teach reading; they receive very limited knowledge when they attend workshops.

The similarity between this study and the present study is that they both deal with role of reading strategies in comprehending English written text, but they differ in area of online reading.

The Sixth Study: By Karen Roux in title “Developing early readers’ Patterns in introducing critical reading skills and strategies to South African children)” It is PhD thesis, University of Pretoria, South Africa 2011.

This study aimed to illustrate the effect of early home literacy activities and the early introduction of reading skills and strategies in the school setting on reading literacy achievement amongst South African Grade 4 learners across the second official languages. The study utilized data from the South African prePIRLS. 2011

This study found four critical reading skills and strategies, these strategies are:

1. reading isolated sentences
2. reading connected text
3. locating information within text
4. identifying the main idea of a text.

The similarity between this study and the present study is that they both deal with role of reading strategies in comprehending English written text, but they differ in area of online reading.

The Seventh Study: It was conducted by Muhammad Younus is entitled “The Effects of Strategy-based Reading Instruction on Reading Comprehension and Reading Strategy Use” university in Karachi, Pakistan- 2017

This study aimed to examine the effect of strategy-based reading instruction on undergraduate students’ reading comprehension in a private university in Karachi, Pakistan. To investigate if there was a significant difference in the reading comprehension of students taught by strategy-based reading instruction and those taught by traditional reading instruction, a test of reading comprehension was conducted at pre-test stage. The results revealed that that high proficiency readers had

gained more significant improvement than the low proficiency level. These results reveal that, the strategy-based reading instruction is a more effective teaching method for reading instruction in Pakistani context. These results also found direct instruction of reading strategies to be helpful in improving students' reading comprehension skills.

This study and the present study are similar in many ways.

The Eighth Study: It was conducted by Sheorey&Mokhtari (2001): They developed the Survey of Reading Strategies (SORS) which consists of global, problem solving, and support strategies to discover offline reading strategies used by post-secondary students. They tried to find differences in metacognitive awareness of reading strategies between ESL and college students studying in the United States and native English-speaking American college students. They also sought to answer whether there were differences based on gender. Results indicated that ESL students reported using a greater number of strategies than did the US students, and that there were no significant differences between the male and female readers in the study.

The Ninth Study: It was conducted by Sheorey&Mokhtari, Also they pointed out that proficient readers were more able to not only select which strategies to use but also monitor the use of such strategies during their reading process. Even though this research study contributes substantially to our understanding of the reading strategies of second language learners, the data were collected through the SORS which was specifically designed to measure both metacognitive strategies and other strategies, such as cognitive and support strategies. In addition, they did not explain whether or not there were similarities or differences among the students' use of metacognitive, cognitive, and support strategies.

The Tenth Study: That conducted by Anderson (2003), Based on the SORS, he created the Online Survey of Reading Strategies (OSORS) to compare ESL and EFL students' different use of metacognitive online reading strategies. Anderson concluded that there were no differences both between the participants in the study and in the use of global and support reading strategies between the two groups. The only difference

is that EFL readers reported using a higher number of problem solving strategies than did the ESL readers. In spite of the study's attempt to examine the role of strategies used by second language readers within the context of online reading tasks, it merely reported the results of the OSORS, and failed to explicate individual students' differences as well as their actual use of strategies when undertaking online reading tasks. With this information, the research would have provided a more detailed explanation as to how students employed the strategies that were reported to be used.

The Eleventh Study: It was conducted by Coiro&Dobler (2007),In relation to the new literacies perspective; they explored online cognitive processes for reading comprehension. They focused on how eleven advanced level sixth-graders searched for and located information on the Internet through given online reading texts and comprehension questions, and what kinds of cognitive strategies they employed. They also conducted in-depth interviews with all of the students, and used think-aloud protocols to provide insights into the students' interaction with online reading texts.

Their findings revealed three major applications while readers engaged in successful reading experiences: prior knowledge sources, inferential reasoning strategies (e.g., predicting, and making inferences), and self-regulated reading processes (e.g., goal setting, regulating, and evaluating the relevancy of online information). One of the major limitations of this study, however, is that Coiro and Dobler included only skilled adolescent readers as the participants and observed how they performed while reading two academic reading texts. Accordingly, some questions as to how beginning or intermediate level students would read online and what kinds of strategies students would use when reading non-academic texts have gone unanswered.

The Twelfth Study: By Jaengsaengthong (2007), He explored the strategy use of graduate students majoring in English at university. The research instrument was the Online Survey of Reading Strategies (OSORS) aiming at measuring online reading strategies in three categories: global, problem solving, and support strategies (Anderson, 2003). A total of 152 students participated in this study. Results indicated that the graduate students used a higher number of problem solving strategies than

global and support strategies. Also, the high proficiency students used all of the strategies at a high level while the low proficiency students used them at a medium level; however, there were no significant differences in the use of overall reading strategies between the high and low proficiency students. As pointed out, the data of this study were limited to the survey data. While the ultimate goal was to document this complex phenomenon extensively, these self-reported data were liable to become either untrustworthy or insufficient to capture the online reading process of the students.

The Thirteenth Study: By Pookcharoen In Lee & Kigamwa (2009), In their recent research study, examined EFL university students' use of metacognitive online reading strategies by using the self-reported OSORS (Anderson, 2003) and the think-aloud protocols. The survey was administered to 33 EFL students, two of whom were subsequently selected for a think-aloud reading task. They used think-aloud data to check with the results of the online survey to determine differences between the students' self-reported and actual use of strategies.

The study demonstrated that the EFL students used a high number of problem solving strategies followed by global and support strategies respectively. Moreover, the think aloud results tallied with the survey results of the study. The researchers further suggested that the data from the survey be cautiously interpreted as they were self-reported by the participants.

One of the problems with such data is that the participants may not report what they actually do when reading, and the strategies reported are regarded as constant and non-contingent. In actual reading, the participants may not use all of the strategies they report in all cases of reading. What they choose to use could be reliant upon what they read as well as the purpose and context of reading.

2.2 Conclusion: The aim of this chapter is to provide a thorough review of the contribution of some previous studies in the field of teaching reading strategies and reading comprehension, it reviewed the related literature to the topic of the study in addition to some previous studies in relation to this study.

Chapter Three
Methodology, Participants
and Context

3.0 Introduction:

This chapter discusses the population and sample of this study. The sample of the study is in details within this chapter in terms of number, age and current academic situation. The researcher also explains the adopted instruments for data collection. Judgments of the instruments by experts and field scholars will be reported to prove the validity and the reliability of the selected methods to collect the data for the study. This chapter also provides the procedures and the techniques implemented to treat and analyze the collected data.

3.1 Research Design

The fundamental purposes of the study were twofold: (1) to investigate what online reading strategies students use for academic purposes; and (2) to discover how they use the strategies in actual reading tasks. In addition, the study sought to explore what similarities and differences existed between the actual use of strategies among proficient and less proficient readers. It also shed light on what types of difficulties and challenges these readers reported and encountered when reading academic texts online.

3.2 Population and Sampling: A research population is generally a large collection of individuals or objects that is the main focus of a scientific query. It is for the benefit of the population that researches are done. However, due to the large sizes of populations, researchers often cannot test every individual in the population because it is too expensive and time-consuming. The population of this study is divided in to three sectors. The main sector is the PREP at University of Hail in Kingdom of Saudi Arabia academic year 2018 – 2019. The university three main acceptance conditions of the preparatory year are: * Passing the Saudi high school exam certificate with 80% at least. *Score at least 70% in the Saudi national measurement test. * Age of applicant must not exceed 22 years. The importance of the three acceptance conditions is that only PY graduators can join colleges of applied medical science and

engineering if they score the required 101 grade which makes the PY a highly competitive academic program joined only by motivated students. English language instructors of the PY in the university are the second sector for the population of this study; there are 250 instructors for the both Male & female sides in English Languages Department. The instructors differ in terms of age, nationalities, and culture, gender and university degrees. They are mainly divided in to two categories as English Language instructors (natives and bilingual English instructors). Most of the natives are not specialized in English language teaching and they are hired to teach the speaking skill only. Most of the non-native instructors are master degree holders in applied linguistics or ELT and well experienced in English language instruction. The university hired them mainly to teach the other skills. The third population sector for this study is the instructors at the colleges of Medical science and engineering. The instructors at these colleges are Ph.D. holders and they are from Asian and Arab countries like Saudi Arabia, Sudan, Jordan, Egypt, Pakistan and India. Their specializations differ according to the colleges they work in and the subjects they teach & build the online materials through the (black board) system and the university website.

3.4 The Study Sample: The total number of students at University of Hail- Preparatory Year for the second semester in this academic year (2018 – 2019) is 3000 students. The number of the students in the PY was 3000 in the first semester, but 200 students withdrew and 300 students failed the first semester and they will have either repeat the whole term or leave the PY and join any other specialization in the university. Regarding the international sampling procedure, the data were included for 68 and 43 students in the proficient group and less proficient group from the 2000 students who passed the first semester and transferred to the second term where the online materials program takes place. It focused on three principal aspects: (1) studying strategies used in reading informative texts; (2) analyzing the content and the

writers' presentation of information; and (3) practicing outlining and summarizing as well as giving opinions about the texts through oral discussion or writing.

3.5 Research Procedures of Data Collection:

In this study, several instruments and approaches will use to collect data: 1) the Online Survey of Reading Strategies (OSORS), 2) TOEFL reading proficiency test scores, 3) Internet use questionnaire, 4) pre- and post-reading interviews, 5) observations through think-aloud sessions, and 6) self-report of online reading strategies. The details of each instrument and how they were implemented are described as follows:

3.2.1 Online Survey of Reading Strategies (OSORS): This Online Survey Reading Strategies (OSORS) (Anderson, 2003) is an adapted form of the Survey of Reading Strategies (SORS) (Mokhtari & Sheorey, 2002) in order to identify which online reading strategies readers use with the five-point Likert scale questions (*see Appendix 2*). Because the study aimed to investigate students' online reading for academic purposes, some modifications were made to the original version of the OSORS. First, two items which relate to the purposes of reading were excluded from the survey (*i.e., strategies no. 17 I read pages on the Internet for academic purposes and no. 33 I read pages on the Internet for fun*).

Also, three additional strategies that were observed to be used in a series of preliminary studies were included in this version of OSORS, namely no. 17 *When academic sites have links to other sites, I click on them to see what they are*, no. 33 *I skip words or sections I find difficult or unfamiliar*, and no. 39 *When I encounter difficult reading in English, I seek material on the same topic in Arabic*. This OSORS measured three categories of these online reading strategies: (*see Appendix 3*): global reading strategies (17 items), problem solving strategies (12 items), and support reading strategies (10 items).

3.2.2 Reliability of the OSORS

The Cronbach's alpha for the overall OSORS was .92. The reported reliabilities for each subsection are Global Reading Strategies, .77; Problem Solving Strategies, .64; and Support Strategies, .69. These data help to establish that the OSORS is a reliable instrument for assessing the met cognitive online reading strategies of L2 reading strategies.

3.2.3 TOEFL Reading Proficiency Test:

The time limit of the test was 40 minutes. A score of 1 was awarded after each correct answer, and there was no penalty for wrong answers. Accordingly, the points possible on the test were 30. As explained earlier, determined by their scores, students were divided into two groups: proficient and less proficient reader groups. In so doing, I ensured the following: (1) students in the proficient group received a minimum of 80% (24 out of 30 points); and (2) students in the less proficient group received a maximum of 65% (20 out of 30 points). Those whose scores were in the middle will, therefore, not be included in the later parts of the study.

Table: Reading Levels of the Three Passages in the TOEFL Reading Proficiency Test:

The Description	First Passage	Second Passage	Third Passage
Total Words	313	297	337
Sentences per Paragraph	6.5	3.2	3.5
Words per Sentence	0.7	15.7	17.2
Percentage of Passive Voice	15	15	57
Reading Ease	53.4	49.6	47.8
Reading Grade Level	7.5	10.2	10.8

3.2.4 Internet Use Questionnaire:The Internet use questionnaire was designed to elicit general information about the eight participants' personal background and their ability and experience ratings with reading on the Internet (*see Appendix 4*). This questionnaire, which was adapted from Coiro and Dobler (2007), comprises 14 items, the adapted version of the questionnaire aimed primarily to have the participants reflect on their use of the Internet on a regular basis. The following six popular online activities were indicated: (1) playing interactive games on the Internet; (2) searching for a topic using a search engine; (3) reading certain websites to learn more about a topic; (4) using e-mail, instant messenger, or chat rooms; (5) browsing or exploring many different webpages; and (6) downloading music and software games. At the end of the questionnaire, I included three open-ended questions which involve the participants' two favorite Internet sites, ways in which they found online resources, and insights about their use of Internet that they would share with the researcher.

3.2.5 Pre- and Post-Reading Interviews:At this stage, each participant in both groups was observed during think-aloud sessions. However, to capture metacognitive thought processes not revealed during the actual reading tasks, pre- and post-reading interviews were also conducted with each participant. The purposes of the interviews were to elicit data as to the student's familiarity with the topics (before the think-aloud protocol) as well as to have students reflect on their metacognitive reading strategies utilized during the think-aloud sessions (after the think-aloud protocol). The data from the students' interviews were used to triangulate the data from the survey and to provide more in depth perspectives for the study.

3.2.6 Observations through Think-Aloud Sessions: After the pre-reading interview, the students were asked to read two passages online in the think-aloud sessions, as their reading process was observed. After a thorough search by the researcher for well-organized websites which are presented at an appropriate level of difficulty, I selected these topics of the two online reading texts: (1) Choosing Foods to Help You Sleep; and (2) Sleeping Well: What You Need to Do? (*see Appendix 6*). Below is Table 3.5

which summarizes the two webpages in terms of their elements and text level of difficulty based on the Flesch Reading Ease Test (1948):

Table: Summary of the Two Online Reading Texts and Webpages

The Description	First Reading Text	Second Reading Text
Total Words	534	2337
Total numbers Sentences	36	127
Sentences per Paragraph	3.6	4
Words per Sentence	14.8	16.3
Reading Ease	65.8	66
Reading Grade Level	7.7	8
Number of Main Links	7	26
Graphics Contained	Low	Medium

In terms of their elements, these two websites contain pictures, diagrams, embedded hyperlinks, and reading texts divided into well-organized sections. It is evident that while the lengths of the two texts differ to a great extent, their reading ease and grade level are particularly similar. The difference in length might help the researcher determine whether it had any effect on what strategies the participants selected to use and how they used them. During the think-aloud sessions, each participant was given a typed sheet to refer to as he or she completed each of the tasks, with several comprehension questions (*see Appendix 7*). The think-aloud sessions in which each participant read two academic texts online with the presence of the researcher lasted about 60 minutes.

3.2.7 Self-Report of Online Reading Strategies: Due to a limited amount of time for the interviews and think-aloud sessions, there was a possibility that the researcher failed to adequately document how the participants employed metacognitive reading strategies when reading online for academic purposes. As a result, the participants

were asked to write down a two-page description of their online reading activities which was submitted to the researcher a week after the interviews and the observations through the think-aloud sessions. They described the reading strategies that they used as they read English academic textbooks, journals, and educational websites by themselves, without the presence of the researcher. The prompts for this task are as follows: *“While you are reading on the Internet on your own, I would like you to write a two-page description of the strategies you use to understand what you are reading. Please give some specific reasons why you decide to use such strategies. You are welcome to talk about the activities you do before reading, during reading, and after reading.”*

3.3 Referees of the instruments, their jobs and places of work

No.	Name	Job	Place of work
1	Dr. Hajar Zaroug	EFL Professor	University of Hail/ KSA
2	Dr. Hanana Alfahal	EFL Professor	Taif University / KSA
3	Dr. Fidaa Al-Sous	EFL Professor	Yarmouk University/ Jordan

Chapter Four
Data Analysis, Results and
Discussions

4.0 Introduction

This chapter analysis the data, present the results, interpretation and discussion. Data analysis and interpretation will be organized according to the configuration of the instruments implementation as stated in chapter three.

The results of each hypotheses are described in the following order: (a) hypotheses 1 regarding the surveyed students' perceived use of reading strategies; (b) hypotheses 2 regarding the selected students' actual use of strategies; (c) hypotheses 3 regarding the similarities and differences between the use of strategies among proficient and less proficient readers; and (d) hypotheses 4 regarding the difficulties which students both reported and encountered.

4.1 Reading Assessment Tools

There are many instruments and approaches using to assess reading skills: 1) the Online Survey of Reading Strategies (OSORS), 2) TOEFL reading proficiency test scores, 3) Internet use questionnaire, 4) pre- and post-reading interviews, 5) observations through think-aloud sessions, and 6) self-report of online reading strategies.

The following table reports the data collection techniques in relation to each research question and describes how data were analyzed. As stated above, to yield reliability in the research study, the various sources of data include the Online Survey of Reading Strategies (OSORS), TOEFL reading proficiency test scores, Internet use questionnaires, pre- and post-reading interviews, observations through think-aloud sessions, and self-reports of online reading strategies. In addition, the issue of validity in this current study was discussed.

4.2 Data Collection Techniques for Each Hypothesis:

Research Hypotheses	Data Source	Data Analysis
1. The students use reading strategies when reading English text online.	Online Survey of Reading Strategies (OS[ORS)	Descriptive Statistical Analysis of online reading strategies, divided into global, problem solving, and support strategies.
2. Students use several reading strategies in actual reading tasks.	1. TOEFL Reading proficiency test scores 2. Internet use questionnaire 3. Pre- and post-reading interviews 4. Observations through think aloud sessions 5. Self-report of online reading strategies	Descriptive statistics for TOEFL reading proficiency test scores 2. Descriptive statistics for the questionnaire 3. Emerging themes from the interviews and self-reports 4. In-depth analysis of the observations
3. There are many differences between proficient and less proficient readers.	1. OSORS 2. Pre- and post-reading interviews 3. Observation through think aloud sessions 4. Self-report of online reading strategies	Inferential statistics for the OSORS 2. Emerging themes from the interviews and self-reports 3. In-depth analysis of the observations 4. Combine of the above data
The students face many difficulties when they read academic texts online.	1. OSORS 2. Pre- and post-reading interviews 3. Observation through think aloud sessions 4. Self-report of online reading strategies	Narrative report of the responses to the OSORS' open-ended question 2. Emerging themes from the interviews and self-reports 3. In-depth analysis of the observations

4.3 Hypothesis 1: The students use reading strategies when reading English text online. The first research hypothesis was directed toward identifying the online reading strategies reported to be used by Arab EFL university students who participated in this study. To test this hypothesis, I used quantitative data from the OSORS, which measured the students’ perceived use of reading strategies when they read online texts for academic purposes (*see Appendix 1*).

All of the surveyed students were asked to complete the 39-item OSORS with the five point Likert scale questions, ranging from always or almost always (5) to never or almost never (1). This survey measured three subcategories of online reading strategies: global, problem solving, and support strategies. Table 4.1 below demonstrates the means and standard deviations for each OSORS item. The value of the mean refers to the frequency of use which ranged from 1 (never or almost never) to 5 (always or almost always) with 3 as sometimes (50% of the time).

Table 4.1: The Means and Standard Deviations for Each OSORS Item (N = 111)

No	Strategy	Mean	SD
1	I have a purpose in mind when I read online.	2.92	1.01
2	I participate in live chat with other learners of English.	2.03	0.87
3	I participate in live chat with native speakers of English.	1.90	0.84
4	I take notes while reading online to help me understand what I read.	2.05	0.83
5	I think about what I already know to help me understand what I read online.	3.10	0.95
6	I first scroll through the online text to see what it is about before reading it.	3.46	1.00
7	When online text becomes difficult, I read aloud to help me understand what I read.	2.79	0.94
8	8. I analyze whether the content of the online text fits my reading purpose.	2.83	0.76
9	I read slowly and carefully to make sure I understand what I am reading online.	3.19	0.84
10	I review the online text first by noting its characteristics like length and organization.	3.35	0.97
11	I try to get back on track when I lose concentration.	3.22	0.86
12	I print out a hard copy of the online text then underline or circle information to help me remember it.	2.30	1.00

13	I adjust my reading speed according to what I am reading online.	2.73	0.92
14	When reading online, I decide what to read closely and what to ignore.	3.06	0.80
15	I use reference materials (e.g., an online dictionary) to help me understand what I read online.	3.44	1.08
16	When online text becomes difficult, I pay closer attention to what I am reading.	3.09	0.95
17	When academic sites have links to other sites, I click on them to see what they are.	2.90	0.92
18	I use tables, figures, and pictures in the online text to increase my understanding.	2.80	1.13
19	I stop from time to time and think about what I am reading online.	2.86	0.87
20	I use context clues to help me better understand what I am reading online.	3.32	0.97
21	I paraphrase (restate ideas in my own words) to better understand what I read online.	3.38	0.96
22	I try to picture or visualize information to help remember what I read online.	3.49	0.94
23	I use typographical features like bold face and italics to identify key information.	3.34	0.93
24	I critically analyze and evaluate the information presented in the online text	2.85	0.78
25	I go back and forth in the online text to find relationships among ideas in it.	2.87	0.94
26	I check my understanding when I come across new information.	2.94	0.82
27	I try to guess what the content of the online text is about when I read.	3.41	0.94
28	When online text becomes difficult, I reread it to increase my understanding.	3.01	1.04
29	I ask myself questions I like to have answered in the online text.	2.70	0.91
30	I check to see if my guesses about the online text are right or wrong.	2.84	0.77
31	When I read online, I guess the meaning of unknown words or phrases.	3.23	1.05
32	I scan the online text to get a basic idea of whether it will serve my purposes before choosing to read it.	3.04	0.88
33	I skip words or sections I find difficult or unfamiliar.	3.14	0.95
34	I critically evaluate the online text before choosing to use information I read online.	2.96	0.90
35	I can distinguish between fact and opinion in online texts.	2.99	0.92
36	When reading online, I look for sites that cover both sides of an issue.	2.47	0.85
37	When reading online, I translate from English into Arabic.	2.98	1.00

38	When reading online, I think about information in both English and Arabic.	3.00	0.92
39	When I encounter difficult reading in English, I seek material on the same topic in Arabic.	2.81	1.00

As shown in the table above, the surveyed students reported using each reading strategy item on the OSORS with varying degrees of frequency. The means of individual strategy items ranged from a high of 3.49 to a low of 1.90 (with an overall mean of 2.94). The most frequently reported strategy was no. 22 *I try to picture or visualize information to help remember what I read online* ($M = 3.49$). This strategy with the highest mean was followed by strategies no. 6 *I first scroll through the online text to see what it is about before reading it* ($M = 3.46$), and no. 15 *I use reference materials (e.g., an online dictionary) to help me understand what I read online* ($M = 3.44$). The strategy with the lowest mean was no. 3 *I participate in live chat with native speakers of English* ($M = 1.90$), followed by no. 2 *I participate in live chat with other learners of English* ($M = 2.03$) and no. 4 *I take notes while reading online to help me understand what I read* ($M = 2.05$).

It should be noted that the information presented in the table above only represents the data from all surveyed students, regardless of their English reading proficiency. Table 4.2 below then displays the reported strategy use by proficient and less proficient students. As mentioned earlier, the OSORS items were arranged in random order. To explore the strategy use of both student groups in greater detail, the strategy items were categorized into three separate subcategories: global strategies (17 items), problem solving strategies (12 items), and support strategies (10 items).

Table 4.2: Reported Strategy Use by Proficient and Less Proficient Students

Strategy		Proficient (N = 68)		Less Proficient (N = 43)	
		M	SD	M	SD
Global Reading Strategies					
1	Having a purpose in mind	3.15	1.7	2.53	0.74
2	Live chatting with other learners	2.16	0.92	1.81	0.73
3	Live chatting with native speakers	2.6	0.90	1.65	0.69
5	Using prior knowledge	3.32	0.92	2.74	0.90
6	Scrolling through text	3.65	1.00	3.21	0.91
8	Analyzing if the content fits purpose	2.97	0.81	2.60	0.62
10	Noting length and organization	3.59	0.92	2.98	0.94
14	Deciding what to read closely	3.24	0.83	2.79	0.67
17	Clicking on links to other sites	3.04	0.95	2.67	0.84
18	Using tables, figures, and pictures	3.10	1.15	2.33	0.94
20	Using context clues	3.63	0.93	2.84	0.81
23	Using typographical aids (e.g., italics)	3.60	0.95	2.93	0.74
24	Evaluating what is read	2.94	0.73	2.70	0.83
26	Checking my understanding	3.16	0.70	2.58	0.88
27	Guessing what the content is about	3.62	0.88	3.07	0.91
30	Confirming predictions	3.04	0.78	2.51	0.63
32	Scanning the text before reading Total	3.21	0.89	2.77	0.81
Total		3.15	0.90	2.63	0.80
Problem Solving Strategies					
9	Reading slowly and carefully	3.38	0.86	2.88	0.70
11	Trying to stay focused on reading	3.50	0.82	2.77	0.72
13	Adjusting reading speed	2.93	0.94	2.42	0.82
16	Paying closer attention to reading	3.32	0.97	2.72	0.80
19	Pausing and thinking about reading	3.00	0.86	2.63	0.85
22	Visualizing information read	3.78	0.94	3.02	0.74
28	Rereading for better understanding	3.29	1.08	2.56	0.80
31	Guessing meaning of unknown words	3.57	0.95	2.70	0.96

33	Skipping difficult words or sections	3.16	1.05	3.09	0.78
34	Evaluating text before using it	3.09	0.91	2.77	0.87
35	Distinguishing fact from opinion	3.26	0.92	2.56	0.73
36	Resolving conflicting information	2.54	0.87	2.35	0.81
Total		3.24	0.93	2.71	0.80
Support Reading Strategies					
4	Taking notes while reading	2.12	0.87	1.95	0.75
7	Reading aloud when text is hard	2.91	0.97	2.60	0.85
12	Printing out a hard copy of text	2.40	1.01	2.14	0.97
15	Using reference materials	3.56	1.12	3.26	1.00
21	Paraphrasing for better understanding	3.66	0.92	2.91	0.81
25	Going back and forth in text	3.04	0.97	2.60	0.82
29	Asking myself questions	2.75	0.92	2.63	0.90
37	Translating from English into Arabic	2.90	1.09	3.14	0.77
38	Thinking in both English and Arabic	3.10	0.96	2.84	0.84
39	Seeking material in Arabic	3.01	1.06	2.49	0.80
Total		2.95	0.99	2.66	0.85

As revealed in the table above, the proficient reader group reported that they used problem solving strategies the most ($M = 3.24$), global strategies the second most ($M = 3.15$), and support strategies the least ($M = 2.95$). However, the lessproficient reader group reported that they used problem solving strategies the most ($M = 2.71$), followed by support strategies ($M = 2.66$) and global strategies ($M = 2.63$).

Based on the three levels of interpretation of reading strategy use proposed by Oxford and Burry-Stock (1995), these means can be divided into three groups: high usage group (mean of 3.50 or above), medium usage group (mean of 2.50 to 3.49), and low usage group (mean below 2.50). To provide useful information as to the frequency of strategy use of the proficient and less proficient students, Table 4.3 below summarizes the information contained in the previous table according to the interpretation key explained.

Table 4.3: Frequency of Strategy Use in the Three Subsections:

Usage	Proficient (N = 68)			Proficient (N = 68)			Total	
	GLOB	PROB	SUP	GLOB	PROB	SUP	Proficient	Less Proficient
High	3	5	2	-	-	-	10	-
Medium	10	9	6	14	10	8	25	32
Low	2	-	2	3	2	2	4	7

For the proficient reader group, 10 of the 39 strategies (26%) fell in the high usage group, while 25 of the remaining strategies (64%) had means between 2.50 and 3.49, indicating medium usage of these strategies. Four of the strategies (10%) were reported to be used with low frequency. For the less proficient reader group, none of the strategies fell in the high usage category; 32 strategies (82%) fell in the medium usage group; and the remaining seven strategies (18%) had means below 2.5. It is interesting to note that the majority of the strategies reported by the students from both groups fell in the medium usage group, which indicates that they used these strategies on a relatively regular basis. Furthermore, while the proficient students reported ten strategies with high mean values (mean of 3.50 or above), none of the strategies belongs to this high usage group for the less proficient students. The very aspect becomes one of the major divergences found between the two groups' uses of strategies reported on the OSORS when reading English academic texts online.

The following section discusses the most and least frequently reported strategies by: (1) all students, (2) the proficient students, and (3) the less proficient students. First, Table 4.4 illustrates the top 10 and the bottom 10 online reading strategies reported by all students as identified in the OSORS.

Table 4.4: Reported Strategies Used Most and Least by All Students

Most Frequently			Least Frequently		
Most Frequently			Least Frequently		
Category	No	Strategy	Category	No	Strategy
PROB	22.	Visualizing information read	GLOB	3.	Live chatting with native speakers
GLOB	6.	Scrolling through text	GLOB	2.	Live chatting with other learners
SUP	15.	Using reference materials	SUP	4.	Taking notes while reading
GLOB	27.	Guessing what the content is about	SUP	12.	Printing out a hard copy of text
SUP	21.	Paraphrasing for better understanding	PROB	36.	Resolving conflicting information
GLOB	10.	Noting length and organization	SUP	29.	Asking myself questions
GLOB	23.	Using typographical aids	PROB	13.	Adjusting reading speed
GLOB	20.	Using context clues	SUP	7.	Reading aloud when text is hard
PROB	31.	Guessing word meaning	GLOB	18.	Using tables, figures, and pictures
PROB	11.	Trying to stay focused on reading	SUP	39.	Seeking material in Arabic

As for the most frequently used strategies, five of the top ten strategies (50%) are global strategies, three (30%) are problem solving strategies, and two (20%) are support strategies. Moreover, all students reported five (50%) support strategies, three (30%) global strategies, and two (20%) problem solving strategies as their least favored strategies on the OSORS.

After an investigation into the most and least frequently reported strategies by all students who responded to the OSORS, Table 4.5 presents the reported strategies used most and least by the proficient students as follows:

Table 4.5: Reported Strategies Used Most and Least by the Proficient Students

Most Frequently			Least Frequently		
Most Frequently			Least Frequently		
Category	No	Strategy	Category	No	Strategy
PROB	22.	Visualizing information read	GLOB	3.	Live chatting with native speakers
SUP	21.	Paraphrasing for better understanding	SUP	4.	Taking notes while reading
GLOB	6.	Scrolling through text	GLOB	2.	Live chatting with other learners
GLOB	20.	Using context clues	SUP	12.	Printing out a hard copy of text
GLOB	27.	Guessing what the content is about	PROB	36.	Resolving conflicting information
GLOB	23.	Using typographical aids	SUP	29.	Asking myself questions
GLOB	10.	Noting length and organization	SUP	37.	Translating from English into Arabic
PROB	31.	Guessing word meaning	SUP	7.	Reading aloud when text is hard
SUP	15.	Using reference materials	PROB	13.	Adjusting reading speed
PROB	11.	Trying to stay focused on reading	GLOB	24.	Evaluating what is read

Based on the ranking above, it appears that the strategies reported as being used the most and the least by the proficient students are similar to those reported by all students. The most frequently reported strategy is no. 22 I try to picture or visualize information to help remember what I read online while no. 3 I participate in live chat with native speakers of English becomes the least frequently reported strategy.

Once the information as to the reported strategies used most and least by the proficient students was provided, I then presented the perceived use of strategies by the less proficient students in Table 4.6 below.

Table 4.6: Reported Strategies Used Most and Least by the Less Proficient Students:

Most Frequently			Least Frequently		
Most Frequently			Least Frequently		
Category	No	Strategy	Category	No	Strategy
SUP	15.	Using reference materials	GLOB	3.	Live chatting with native speakers
GLOB	6.	Scrolling through text	GLOB	2.	Live chatting with other learners
SUP	37.	Translating from English into Arabic	SUP	4.	Taking notes while reading
PROB	33.	Skipping difficult words or sections	SUP	12.	Printing out a hard copy of text
GLOB	27.	Guessing what the content is about	GLOB	18.	Using tables, figures, and pictures
PROB	22.	Visualizing information read	PROB	36.	Resolving conflicting information
GLOB	10.	Noting length and organization	PROB	13.	Adjusting reading speed
GLOB	23.	Using typographical aids	SUP	39.	Seeking material in Arabic
SUP	21.	Paraphrasing for better understanding	GLOB	30.	Confirming predictions
PRO	9.	Reading slowly and carefully	GLOB	1.	Having a purpose in min

It is shown from the table that the less proficient students reported no. 15 I use reference materials (e.g., an online dictionary) to help me understand what I read online as their most frequently used strategy and no. 3 I participate in live chat with native speakers of English as their least frequently used strategy with the lowest means. Using the information pertinent to the reported strategies used most and least by the proficient and less proficient students, I made some observations concerning the two groups' use of online reading strategies for academic purposes. First of all, it is evident that the three strategies reported as being used by both groups with high mean values include no. 22 I try to picture or visualize information to help remember what I read online ($M = 3.78$ and 3.02), no. first scroll through the online text to see what it is about before reading it ($M = 3.65$ and 3.21), and no. 27 I try to guess what the content

of the online text is about when I read ($M = 3.62$ and 3.07). As for the bottom 10 strategies which students used least frequently, six common strategies were listed by both proficient and less proficient students. These include: no. 3 I participate in live chat with native speakers of English, no. 2 I participate in live chat with other learners of English, no. 4 I take notes while reading online to help me understand what I read, no. 12 I print out a hard copy of the online text then underline or circle information to help me remember it, no. 36 When reading online, I look for sites that cover both sides of an issue, and no. 13 I adjust my reading speed according to what I am reading online. Evidently, neither of the strategies related to live chatting with either native speakers or non-native speakers of English were favored by either group of students. With respect to live chat with native speakers of English, the fact that students in Saudi Arabia study English as a foreign language accounts for very low means of 2.06 for the proficient students and 1.65 for the less proficient students. Provided with limited opportunities to interact with native speakers or participate in live chat with them, the proficient and less proficient students reported using the strategy no. 2 or live chatting with other learners of English with higher mean values of 2.16 and 1.81, respectively.

It is also interesting to pinpoint that, while reading online for academic purposes, both groups of students seldom took notes (strategy no. 4) or printed out a hard copy of text (strategy no. 12). Even though offline readers often take notes to help them understand what is read, these online readers in both groups reported low means of 2.12 and 1.95 for this particular strategy.

Also, low means of 2.40 and 2.14 were reported for the strategy pertaining to printing out a hard copy of the online text to underline and circle information. While offline readers depend to a great extent on a hard copy of the text, the surveyed students in this study revealed that this strategy was of little use to them when reading online. The following part discusses the top three strategies reported using by all students, the proficient students, and the less proficient students participating in this study. Insights gained from the findings contribute to our better understanding of how the students

selected strategies to foster their online reading for academic purposes. In each of the three following tables, the global, problem solving, and support reading strategy subsections are accompanied by the top three strategies reported with the highest means. Table 4.7 contains the information as to the use of strategies by all students.

Table 4.7: Top Three Strategies Reported to be used by All Students

Category	No	Strategy	Mean	SD
Global	6.	Scrolling through text	3.46	1.00
	27.	Guessing what the content is about	3.41	0.94
	10.	Noting length and organization	3.35	0.97
Problem Solving	22.	Visualizing information read	3.49	0.94
	31.	Guessing meaning of unknown words	3.23	1.05
	11.	Trying to stay focused on reading	3.22	0.86
Support	15.	Using reference materials	3.44	1.08
	21.	Paraphrasing for better understanding	3.38	0.96
	38.	Thinking in both English and Arabic	3.00	0.92

As indicated in the table above, the global strategy with the highest mean is no. 6 I first scroll through the online text to see what it is about before reading it ($M = 3.46$). However, of all the 39 strategy items listed on the OSORS, the strategy that received the highest mean is no. 22 I try to picture or visualize information to help remember what I read online ($M = 3.49$), belonging to the problem solving subcategory. The third strategy to receive a high mean is the support reading strategy no. 15 I use reference materials (e.g., an online dictionary) to help me understand what I read online ($M = 3.44$).

This information about the particular strategies reported as being used deserves careful attention because of the potential effects of reading strategy instruction provided to the students participating in this study both prior to and during the course of data collection.

As stated earlier, the students who responded to the OSORS were those enrolled in PREP Reading for Information, which was a reading course intended to equip students with various reading skills they needed. Among a wide variety of skills taught in this course were, for instance, predicting what the text to be read is about, identifying text structure, extracting these and main ideas, and dealing with unfamiliar words by using context clues and dictionaries.

Evidently, the strategies nos. 6, 10, 15, 21, 27, 31, which received high means as identified in the table above, are concrete examples of those introduced in the reading course. Even though this reading course focused primarily on offline reading or printed texts, it may be assumed that the teachers' explicit instruction also played a pivotal role in the students' use of strategies and allowed the transfer to the online context.

Table 4.8 below continues to discuss the issue by displaying the top three strategies reported to be used by the proficient students.

Table 4.8: Top Three Strategies Reported to be used by the Proficient Students

Category	No	Strategy	Mean	SD
Global	6.	Scrolling through text	3.65	1.00
	20.	Using context clues	3.63	0.93
	27.	Guessing what the content is about	3.62	0.88
Problem Solving	22.	Visualizing information read	3.78	0.94
	31.	Guessing meaning of unknown words	3.57	0.95
	11.	Trying to stay focused on reading	3.50	0.82
Support	21.	Paraphrasing for better understanding	3.44	1.08
	15.	Using reference materials	3.56	1.12
	38.	Thinking in both English and Arabic	3.10	0.92

It is noticeable that the means indicated in the table above are much higher than those of all students' use of strategies, as reported in Table 4. The first strategy with the highest mean is the problem solving strategy no. 22 I try to picture or visualize information to help remember what I read online (M = 3.78), followed by the support

strategy no. 21 I paraphrase (restate ideas in my own words) to better understand what I read online (M = 3.66), and the global strategy no. 6 I first scroll through the online text to see what it is about before reading it (M = 3.65). Below is Table 4.9 which lists the top three strategies in each subsection reported through the OSORS by the less proficient students in the study.

Table 4.9: Top Three Strategies Reported to be used by the Less Proficient Students

Category	No	Strategy	Mean	SD
Global	6.	Scrolling through text	3.21	0.91
	27.	Guessing what the content is about	3.07	0.91
	10.	Noting length and organization	2.98	0.94
Problem Solving	33.	Skipping difficult words or sections	3.09	0.78
	22.	Visualizing information read	3.02	0.74
	9.	Reading slowly and carefully	2.88	0.70
Support	15.	Using reference materials	3.26	1.00
	37.	Translating from English into Arabic	3.14	0.77
	38.	Thinking in both English and Arabic	2.91	0.81

On the whole, the means of the less proficient students' use of strategies are relatively low in comparison with the proficient students' means or even all students' means. The highest mean values in each subcategory include the support reading strategy no. 15 I use reference materials (e.g., an online dictionary) to help me understand what I read online (M = 3.26), the global strategy no. 6 I first scroll through the online text to see what it is about before reading it (M = 3.21), and the support strategy no. 37 When reading online, I translate from English into Arabic (M = 3.14).

Verification of the Study Hypothesis (1): The information as to the perceived uses of strategies among the proficient and less proficient students revealed that the students in each group manipulate the selected strategies in different ways.

This **confirms** the first hypothesis that, students use reading strategies when reading English text online.

4.4 Research Hypothesis 2: Students use several reading strategies in actual reading tasks.

To gain more insights into the students' actual use of strategies when they were asked to undertake online reading tasks, the second research question was formulated. To address this question, I used qualitative data from multiple sources: Internet use questionnaires, pre- and post-reading interviews, observations through think-aloud sessions, and self-reports of online reading strategies.

As explained earlier, of the PREP students who completed the survey, eight students were asked for further in-depth interviews. The selection of the eight students was based on their English reading course grades obtained from the OSORS. The selected students were asked to take a TOEFL reading test to determine their actual reading proficiency at the time of interview. Based on their test scores, two groups of four students were categorized as a proficient reader group and a less proficient reader group. While the demographic information of the selected students was summarized in the methodology section, the following section presents data from all of these students categorized in two groups according to their English reading proficiency. In each case, the background information and detailed accounts of his or her reading behavior during actual reading tasks were reported. Furthermore, to facilitate the linkage between the strategy items on the OSORS and those conspicuously observed in the think-aloud sessions, the strategy numbers which appeared on the OSORS were also mentioned when discussing the use of each particular strategy in the following section.

4.4.1 Proficient Reader Group

First Student: Nouf

Nouf is a 20-year old student, Medical Track. She had been studying English for 16 years and had one year of experience in an English speaking country during secondary school. Nouf considered her overall English and reading proficiency levels as fair. She rated herself as having very high computer skills. She spent four to five hours a day using the Internet mainly for entertainment purposes such as downloading music and

software games and communicating with friends and family via whatsapp and messenger. Also, for academic purposes (In Medical Track they study English for 20 hours a week), she read class materials as well as academic journals on a regular basis (*Internet use questionnaire, interview, 6/29/09*).

During the think-aloud session, to foster the use of strategy no. 14, Nouf decided to read the comprehension questions first, explaining, “*Reading the questions helps me focus later on the text much more precisely. I know what to ignore and what to read closely, especially when reading a long passage.*” In addition, trying to come up with answers for the comprehension questions as to the meanings of the words “**jittery**” and “**deprivation**”, she demonstrated his competent skills at locating information in an online text as follows:

These questions seem to ask for the meaning of certain words. I don't know where exactly these words are in this long text. It would definitely take a long time if I read the whole text. So now, I will just press Ctrl + F and find where those words are (Think-aloud, 6/29/09).

When asked to explain how we can avoid the symptoms of caffeine withdrawal mentioned in the article, Nouf explained how she used contextual clues to help guess the meaning of unknown words (strategy no. 31):

I only know what caffeine is but I have no idea what “withdrawal” means. Anyway, the next sentence explains that we can gradually withdraw by blending decaffeinated coffee with regular coffee and increasing the amount of decaf over a few weeks' time. Oh...okay, now I got the idea (Think-aloud 1, 6/29/09).

This student seemed to be good at decoding word meanings using context provided as she further commented on how to figure out the meaning of “**deprivation**”:

“This sentence talks about the effects of sleep deprivation, so I am pretty sure that the word “deprivation” means something like “lack”. I don't know but they should mean the same thing” (Think-aloud 2, 6/29/09).

In this case, she not only used context to determine the word meaning in Arabic but also referred to a synonym in English which she already knew in order to comprehend the text.

As illustrated above, when faced with unfamiliar words or expressions, Nouf usually depended on context clues. I then asked her to elaborate on his decision as to which strategy to use to deal with word difficulty, and she ranked the following strategies in order of their frequency of use: context clues, dictionary, and Wikipedia. She articulated her perspective:

I usually start with context clues because they help me read faster and easier without stopping to look up every new word in a dictionary. I use a dictionary only if it is impossible to guess from the context. Unfortunately, I sometimes cannot find certain words in a dictionary, so in this case, I go ahead and consult Wikipedia where I find almost anything in greater detail (Post-reading interview, 6/29/09).

Later, when she was a bit confused attempting to find an answer, he relied on strategy no.25 going back and forth in text in order to find relationships among ideas in it. She pointed out:

I'm trying to justify why we should get enough sleep. The first and the last paragraphs explain this. The first one is about the effects of chronic sleep loss but the last one talks about what people who don't get enough sleep tend to do. I think I need to reread these two paragraphs to find the answer (Think-aloud 1, 6/29/09).

Even though Nouf was a proficient reader, she sometimes struggled with understanding complex ideas presented in the text. To alleviate the situation, two problem solving strategies, no.16 paying closer attention to reading and no.28 rereading for better understanding, were used as she indicated,

"The answer should be in this paragraph, but it seems complicated. Let me take some time to read what it says here more carefully". She further commented, "This paragraph is a bit difficult to read and I still can't find the answer. Anyway, I'm sure it must be in this paragraph about different stages of sleep. So let me read it one more time" (Think-aloud 2, 6/29/09).

Nouf's self-report of online reading strategies was submitted a week after she read an article from <http://blogs.discovermagazine.com>, entitled "*Plastic is More Biodegradable than We Thought (That's Bad.)*". Based on the self-report, Nouf read this article for one of his class assignments. Reading on his own at home, she first reported printing out a hard copy of the online article (strategy 12). She reasoned,

“I usually prefer to print out the text, especially when I read for class because I really need to jot down some important things and underline keywords or main ideas. It helps me better understand the text I am reading” (Self-report, 7/6/09).

When Nouf faced certain terms or concepts she was curious about, she clicked on the links to other sites for further clarification (strategy 17). Some examples of how she made use of this strategy are as follows:

I clicked on the abbreviation “BPA” I found in this sentence: “This degradation could be releasing harmful compounds such as biphenyl A (BPA) into the ocean” because I wanted to know more about it such as how harmful it is to humans.

This article also mentions the American Chemical Society where research was presented. So, I clicked on the link to the society’s website. I thought it would be nice to visit the website and perhaps find more articles related to my interests. (Self-report, 7/6/09).

As already revealed in the think-aloud sessions, Nouf tended to rely on context to determine the meaning of unknown words. However, in certain cases, she was obliged to employ strategy no.15 using reference materials (i.e., EXFORD dictionary installed on her computer) due to a dearth of context clues provided. To illustrate, Nouf pointed out,

“The concluding sentence in this article says “There’s a little bit of hyperbole going on here”. I think the word “hyperbole” is sort of important. Without enough context, I decided to look it up in my dictionary” (Self-report, 7/6/09).

Nouf finally discussed how she used strategy no.24 analyzing and evaluating the information read. She accounted,

“The information presented should be trustworthy because the article contains reliable research references. Also, I believe that the selected website itself (<http://discovermagazine.com/>) is well respected in the field” (Self-report, 7/6/09).

In the general, Nouf was one of the proficient readers who had developed practical skills in using computers and the Internet to rapidly locate information in online texts. She also preferred to make educated guesses about the meanings of unknown words by using context clues.

However, in certain cases where she was provided with insufficient clues, she resorted to a dictionary or online resources such as Wikipedia or Google. One thing that made

Nouf differ from several other informants was that she liked to print out a hard copy of what he read online, particularly when she read for class assignments. It was advantageous for her to underline main ideas and take useful notes while reading, which are the activities he found difficult to do on screen.

Second Student: Fai

Fai is a 17-year old student, Medical Track. She's from Almadina Region, with approximately 12 years of studying English, she was one of the proficient English learners. She came from Almadina to study Medicine at University of Hail. Fai considered her overall English and reading proficiency levels as good. With regard to her Internet use behavior, she spent about one or two hours a day reading class materials (In Medical Track they study English for 20 hours a week), local and international news, and e-mails. She rated herself as having very high skills in using the Internet and search engines. During free time, she enjoyed live chat with friends though FACEBOOK and exploring a wide range of topics on the Internet webpages (Internet use questionnaire, interview, 7/1/09).

While undertaking an online reading task, Fai adopted a unique approach to reading comprehension. Instead of reading the questions to locate where required information is in the text to be read, Fai decided to complete the task in the opposite direction. She reasoned,

“Some people prefer to read questions first to quickly provide responses to those questions. In my case, I tend to do a totally different thing,if I read questions first, I usually forget them very easily after I finish reading the text and need to reread all the questions. So I'd rather read the whole text before I read and respond to the comprehension questions (Pre-reading interview, 7/1/09).

As revealed in her explanation, Fai expected to gain a thorough understanding, rather than a gist of the text that she read per se. Hence, throughout the think-aloud session, Fai spent most of the time deciphering what unknown words meant in order to achieve a thorough and insightful comprehension of the text, which was associated with strategy no.15 using reference materials.

Her distinguishable reading behavior was exhibited in the following instances:

“I’ve seen the word “tough” before and I think I know the meaning. Anyway, let me look it up in googletranslation.com (an online dictionary) just to make sure what does the word “jittery” mean? Well...I’ve never encountered this word. So in this case, I will go ahead and find out what it means from the dictionary. I know for sure the word “diet” refers to a limited amount of food that you eat when you want to become thinner. We can say, “I am on a diet”, for example, but does this word have only one meaning? I’d better consult the dictionary. (Think-aloud 1, 7/1/09)

Not only did Fai consult the dictionary frequently to deal with words whose meanings she was unsure of, but she also chose to take advantage of context clues available to handle word problems at times (strategy no.31 guessing meaning of unknown words). Following is a list of examples illustrating how Fai manipulated the particular strategy with a wide range of techniques:

“Even though I don’t know what exactly the term “melatonin” refers to, I won’t look it up in the dictionary. This is because the writer used a comma as a signal clue followed by the word’s definition. So I am sure “melatonin” is a substance which can be found in the human body that helps regulate sleep” (Think-aloud 1, 7/1/09).

“Again, this sentence says, “Eicosapentaenoic acid (one type of omega-3 found in fish, especially tuna, salmon and trout) has a role in sleep induction in your brain”. Instead of wasting time looking up the word in the dictionary, I learned that strings of words that follow the unknown expression “eicosapentaenoic acid” are used to restate or explain what the word means” (Think-aloud 1, 7/1/09).

The sentence I am reading explains that lack of sleep can make you irritable and cranky. I know that “irritable” means annoyed but I’ve never heard of “cranky” before. But I know that it must have a negative connotation as well. The conjunction “and” is used to join words that are related in some way (Think-aloud 2, 7/1/09).

This section has something to do with the so-called “driver fatigue”. I know the meaning of “fatigue” in French. If it was borrowed from French, it should mean “tiredness” in English. Used together with the word “driver”, it makes sense (Think-aloud 2, 7/1/09).

In addition to the two strategies mentioned above, some other strategies were clearly observed during the think-aloud session, namely strategies no.7 reading aloud when text is hard, and no.37 translating from English into Arabic. While undertaking a task, Fai uttered,

“ I need to read aloud the sentence: “People who have chronic sleep loss are also at a higher risk of being obese, having heart disease, diabetes and kids with ADHD often have sleep disorders. “It is complicated because of the fact that sentence structures of

English are very different from those of Arabic. To fully understand this sentence, for example, I am now translating what “chronic sleep loss” is. In Arabic, we use a noun followed by adjectives (Think-aloud 1, 7/1/09).

Additionally, strategy no.10 noting length and organization was also employed, particularly when the text is lengthy. She stated,

“The second text is very long. [She scrolled down the page.] I don’t think I can read the text thoroughly like before. However, at least I need to get the main points” (Think-aloud 2, 7/1/09).

Further, when asked about the advantages and disadvantages of these two different approaches, she replied,

“Actually I prefer reading the text very carefully to get all the details and achieve a hundred percent accuracy. But as you know, it is too time-consuming and difficult, if not impossible, to do it” (Post-reading interview, 7/1/09).

According to her self-report of online reading strategies, Fai used some other useful strategies when reading a brief international news article from <http://edition.cnn.com/2009/WORLD/asiapcf/08/26/india.interpol/index.html>. The title is “Interpol Warrants for Pakistani Militants”. First of all, strategy no.13 adjusting reading speed was mentioned as she commented,

“I am interested in the news itself although I know it is difficult to understand the language”. In order to tackle the text difficulty she encountered, Fai further added, “Since this text is hard, I read much more slowly. Adjusting my reading speed was very important when I wanted to make sense of the article” (Self-report, 7/8/09).

Also, to facilitate her comprehension of the text, she thought about what she already knew (strategy no. 5). She said,

“I’ve heard of this news several times a few months ago, so now I kind of know what the news is talking about. This helps me a lot”.

However, it should be noted that while Fai depended largely on her prior knowledge to understand what she read, she still found some phrases or parts too challenging or unfamiliar. In this case, she tended to rely on strategy no. 33 skipping difficult words or sections as she reported,

“There are several words I don’t know like “siege”, “prosecutors”, and “extradition”. So I skipped those and saw if the text still made sense or it gave me global comprehension” (Self-report, 7/8/09).

In general, in contrast to other informants, Fai adopted a distinctive approach to reading comprehension whereby she preferred to read the whole text for detailed information, rather than merely give responses to comprehension questions. When she had vocabulary difficulty, Fai chose to consult the dictionary frequently although she sometimes could use enough context clues provided to determine the meanings of unknown words. Like other participants, how Fai read online depended primarily on the length and organization of the text. She tended to focus her particular attention to every detail of a brief text whereas she only skimmed through a long text and skipped several unfamiliar words and expressions.

Third Student: Talal

Talal was a 19-year old student in Science Track. He's from Hail. He took a few English courses to improve his English level. Talal had been studying English for 15 years, and he rated his overall English and reading proficiency levels as good. As for the Internet use, he reported his high skill level in navigating websites and using search engines. Each day, he spent about three to four hours reading in English online mainly for his class assignments and e-mail communication (In Science Track they study English for 20 hours a week). In addition, he often used messenger to connect with friends and family and visited online newspaper websites to gain access to up-to-date information (Internet use questionnaire, interview, 7/3/09).

To begin the think-aloud task, Talal used a series of strategies to facilitate making a well informed decision as to the approach to reading the text. These included strategies no.6 scrolling through text, no. 10 noting length and organization, and no. 23 using typographical features (e.g., bold face and italics). He pointed out,

I am now scrolling down the page to see how long it is and what it is written about this text is not too long for me to read carefully, I guess the author is trying to tell readers that they should eat healthy foods to help them sleep. Also, before getting more detailed information, I am reading the phrases in bold in the second half of page, which say "Avoid healthy foods or spicy foods", "Don't drink alcohol", "Eat cherries", "Enjoy a light bedtime snack", and "Avoid eating excessive fats". All of these concern ways to use our diet to help us sleep (Think-aloud 1, 7/3/09).

Talal proceeded to read the comprehension questions before returning to read the whole text very attentively. In an attempt to understand the text in detail, he devoted his time and attention to unknown words or expressions encountered. Thus, it was observed that, like many other participants, Talal frequently employed strategies no.15 using reference materials and no.31 guessing meaning of unknown words to sort out his vocabulary difficulty. Talal's implementation of these strategies manifested itself in the following quotes:

I don't know what ADHD refers to. This sentence gives no explanation of the term. So, I will consult googletranslate.com (an online dictionary) first to see what it is short for. [He typed in the word and found no result.] That's too bad. I need to visit Google, and I think I can find it there (Think-aloud 1, 7/3/09).

I am searching for the meanings of "jittery", "vicious", and "perk up" from the dictionary because this paragraph does not give me much context to guess their meanings (Thinkaloud 1, 7/3/09).

This sentence says, "Many people suffer from withdrawal symptoms such as headaches, drowsiness, flu-like feelings, irritability and lack of concentration when they give up caffeine cold turkey". Even though I don't know the meanings of "drowsiness" and "irritability", I won't bother to look them up in the dictionary yet because, by looking at the phrase "such as", these two things are most likely to be examples of symptoms (Think-aloud 1, 7/3/09).

It says that sleep deprivation also affects motor skills. The context is clearly given here, so I am sure "sleep deprivation" refers to a lack of sleep (Think-aloud 2, 7/3/09).

As revealed above, it was evident that Talal attempted to depend on context clues first to derive the meaning of unknown words. Once he failed to make use of them or the clues given were not sufficient, he resorted to using reference materials (e.g., an online dictionary and search engines).

Taking into account the fact that the second text was much longer than the first one, Talal sometimes stopped and thought about what he was reading (strategy no. 19) in order to decide when to ignore sections he found unimportant or irrelevant to the purpose of reading. For instance, he justified,

"I can skip this section entitled" Brain cellular repair, replenishment and growth" because it simply provides readers with supporting details for the previous paragraph" (Think-aloud 2, 7/3/09).

When encountering long sentences, especially those consisting of several complex clauses, Talal relied on strategy no.7 reading aloud when text is hard. He pinpointed the benefit of this strategy as follows:

This sentence is a bit complicated. [He read out loud, “Today, researchers wonder if it may be the brain’s way of processing random fragments of information received during the day”.] Reading aloud helped me not only to better focus my attention on the text but also to separate this long sentence into clauses which are easier to understand (Thinkaloud 2, 7/3/09).

In his self-report of online reading strategies, Talal reported reading a website about Ovid, an internationally recognized leader of electronic medical, scientific, and academic research databases (<http://www.ovid.com/site/index.jsp?top=1>) for his class assignment. First of all, strategy no.8 was used as he analyzed whether the content of the webpage fit his reading purpose. He explained,

“There are a lot of hyperlinks, and I found it difficult to navigate. Anyway, after spending some time finding the right page, I clicked on the title “Databases” because it seemed most pertinent to the assignment topic” (Self-report, 7/10/09).

Further, before going into further details, Talal tried to anticipate the content of the page he was about to read (strategy no. 27). To illustrate the point, he wrote,

“Before I read this page, I thought to myself if this page would talk about a wide range of disciplines the databases cover, how to customize searches for increased precision, and how easy it is to register to use services” (Self-report, 7/10/09).

Because of the requirement that the paper he was to submit be written in Arabic, two additional strategies were also reported, namely no.37 translating from English into Arabic and no.39 seeking material in Arabic. Below was Talal’s account of how he used each of the strategies and his perspective on them:

In fact, I usually don’t translate what I read in English into Arabic because, for me, translating into Arabic is very hard and complicated. Most of the time, I automatically understand what it is said in English without translating. If I do need to translate, I will certainly get stuck with all my word problems in both English and Arabic. Just to make sure I got the accurate information from the webpage in English, I searched Google to find some supplementary materials in Arabic. I think this is a great way to check my understanding of the text in English and see if there are any differences between what I read in English and in Arabic. (Self-report, 7/10/09)

In general, Talal was another proficient reader who liked to use a wide range of pre-reading strategies (e.g., scrolling through text, noting length and organization, and using typographical features) to predict what he was about to read as well as to make a decision on how to best approach the text. With a high level of English proficiency, Talal expected to understand the text in detail; therefore, he focused on word meanings and ideas presented. In so doing, he relied on either context clues or outside resources such as an online dictionary. Moreover, Talal demonstrated how he sought material on the same topic in Arabic, which was one of the strategies less often observed among the participants, to complement the information on a particular topic as well as to facilitate his understanding of the text he read in English.

Fourth Student: Alanood

Alanood is a 19-year old Promoted student in science Track (she shifts all the levels to study level 4 directly after taking the placement exam). She is from Hail. She had been studying English for 15 years in International schools, and considered her overall English and reading proficiency levels as good. During the interview, she appeared to be a very proficient and confident English reader, and she rated her English reading proficiency as excellent as compared with that of her classmates. Also, she regarded herself as skillful in using computers and navigating the Internet. Regularly, Alanood spent three to four hours online each day. What she usually read in English included class materials, email messages, personal websites. For entertainment purpose, she sometimes played online games and downloaded music (Internet use questionnaire, interview, 7/6/09).

At the beginning of the first think-aloud session, having read all comprehension questions, Alanood decided to read the first paragraph only. While doing so, she explained,

“I am reading this paragraph only because I think the main idea of the whole text should be embedded in it” (Think-aloud 1, 7/6/09).

Once she got the gist of the text, she scrolled down the page to note its characteristics like length and organization (strategy 10) and paid particular attention to several

phrases in bold type (strategy 23) as she thought that reading these phrases should save much time. She accounted,

I understood what the text is talking about. So now I am trying to figure out some important details contained by looking at these phrases in bold type. This really helps because I don't need to read the whole thing in order to get the essential ideas (Thinkaloud 1, 7/6/09).

During the second think-aloud session, Alanood selected the same strategies; however, due to some differences in terms of organization of the text, only reading the first paragraph was not very helpful for her to get the main idea of the text. She pointed out,

"I tried to read the first paragraph as I usually do. But I think it doesn't tell me important things here in this paragraph; it only serves as an introduction to the topic. I just have to read more" (Think-aloud 2, 7/6/09).

Also, after scrolling down the page, Alanood delineated several aspects of the text that facilitated her comprehension as follows:

Even though the text is long compared to the previous one, it is very well structured. I can easily locate where important points are by simply looking at each paragraph title clearly marked with different colors and larger fonts. I also like how the pictures, tables, and diagrams are used throughout the text. The table "Typical Sleep Needs" is a great example. If it were written in paragraphs, it would become much more difficult to read. Therefore, noticing these visual aids allows me to realize which section I can skip and which one I really need to read (Think-aloud 2, 7/6/09).

Based on the excerpt above, several strategies that Alanood used to comprehend the text could be identified: using typographical aids (strategy 23), using tables, figures, and pictures (strategy 18), and deciding what to read closely and what to ignore (strategy 14).

It was revealed from both think-aloud sessions that Alanood used a wide range of strategies in relation to the organization of the texts rather than other dimensions, including word-attach strategies. Due to her high English proficiency, she did not regard the level of vocabulary in these two texts as too challenging. However, in certain cases where she had difficulty with unknown words, she tended to rely

principally on her prior knowledge (strategy 5) in conjunction with the context clues given (strategy 31). Following are some examples:

I don't know the meaning of "cranky" in this sentence: Lack of sleep can make you irritable and cranky. However, I won't look it up in the dictionary because the word's meaning should be similar to "irritable". These two adjectives are combined by "and", which is a very helpful hint.

In law, deprivation refers to the act of depriving someone of food or money or rights such as "deprivation of civil rights". But I don't think this meaning applies here, especially when used together with the word "sleep". Then, I read the whole sentence where the word is used, and it says, "Sleep deprivation also affects motor skills". It clearly indicates that sleep deprivation is just the same thing as lack of sleep (Think-aloud 2, 7/6/09).

When trying to give an answer to the question as to the most important stage of sleep, another strategy was clearly observed, namely strategy 35 distinguishing fact from opinion. She started off by reading about different stages and reported,

"This entire section provides readers with facts only. I can conclude that each sleep stage is important for overall quality sleep. Anyway, I can see that the author doesn't judge which stage is the most important (Think-aloud 2, 7/6/09).

Feeling reluctant to answer the question based solely on her assumption, Alanood continued to read the paragraph that follows and explicated,

Even though I guess that deep sleep is the most important stage, I still need to locate where in the article the author made a judgment before I answer the question. [She read the next paragraph about the importance of deep sleep and REM sleep.] Oh...I got it. You can see the first sentence here. It clearly says that, "deep sleep is perhaps the most vital stage". So, I think the author is trying to give an opinion by using the word „perhaps" in this statement (Think-aloud 2, 7/6/09).

Some additional strategies appeared in her self-report of online reading strategies in which she wrote about reading a webpage for her class assignment. First of all, due to the complexity of the topic she selected to read, a string of interrelated strategies could initially be identified, which consisted of strategies no.9 reading slowly and carefully, no.13 adjusting reading speed, and no.16 paying closer attention to reading. Alanood accounted in her report:

For me, this is aver difficult page to read. I couldn't skim through different sections and get all the main ideas as I did before. Instead, I had to read quite slowly although

the text is short. Also, I felt the need to carefully focus on every detail in order to understand what it says in each paragraph (Self-report, 7/13/09).

At that point, she had some vocabulary difficulty. Instead of using context clues to determine word meanings, Alanood decided to consult an online dictionary, which is in line with strategy no.15 using reference materials. She reported,

“I didn’t know the meaning of the verb “perish”. So, I typed in the word in Arabic because I was reading this text for class assignment and accuracy is a top priority” (Self-report, 7/13/09).

Furthermore, Alanood employed strategy no.25 going back and forth in text in order to find relationships among ideas in it. The following excerpt demonstrates the point:

I read the first sentence in the first paragraph, and it says that the Khmer Rouge regime took power on 17 April 1975 and was overthrown on 7 January 1979. Then, I found this sentence in the third paragraph: In 2001 the Cambodian National Assembly passed a law to create a court to try serious crimes committed during the Khmer Rouge regime 1975-1979. I was wondering if the author is talking about the same group of people or government, so I went back to the first paragraph and find out whether the same years were mentioned before I could move on to the next paragraph (Self-report, 7/13/09).

In general, Alanood was a very proficient reader and Internet user. She chose to read all comprehension questions before using pre-reading strategies to guess the main idea of the whole text. Throughout the interviews and think-aloud sessions, Alanood tended to use several strategies related to the organization of the texts much more often other common strategies, including those dealing with word difficulty. However, when faced with unknown words, she activated her own background knowledge and used context clues to help determine the meanings. Another sophisticated strategy, distinguishing fact from opinion in online texts, was clearly observed. Like several other informants, Alanood adjusted her reading speed as well as techniques according to the differing level of reading text and the familiarity with the topic.

4.4.2 Less Proficient Reader Group

Fifth Student: Lulua

Lulua is a 19-year old student, Science Track. She came from Almadina region to study Engineering at University of Hail. She had been studying English for 15 years and considered her overall English and reading proficiency levels as fair. She reported possessing practical skills in using the Internet and search engines for online information. Each day, she spent about one hour using the Internet mostly for e-mail and messenger communication. What she read often in English was local and international news as it was deemed necessary for her study. (Internet use questionnaire, interview, 7/8/09)

Before she actually started to read, strategy no. 5 using prior knowledge was observed as she articulated,

“Understanding this text should not be too difficult because I already know something about the importance of sleep. I know that we should go to bed at 10 pm and need an average of six hours of sleep a night. Also, there are many problems associated with lack of sleep” (Pre-reading interview, 7/8/09).

When the first text about sleeping was given to Lulua, she first scrolled down the page to check what the text was about and how long it was (strategies no. 6 and no. 10). She then immediately started to read the first and the last paragraphs of the text as she explained,

“Intentionally read only these two paragraphs first because the first paragraph should give me some background information about the text to be read, and the last paragraph tends to summarize what is discussed in the whole text. Just like now, I know I am going to learn more about choosing foods that help me get a good night’s sleep. I think this helps me read much faster without spending too much time trying to understand so many ideas presented” (Think-aloud 1, 7/8/09).

Like other participants, when faced with unknown words, she tried to guess meanings from context first (strategy no. 31). To elucidate the point, she added,

I prefer using context to using a dictionary I have in order to deal with vocabulary problems. This is because, when using a dictionary, I find it rather hard to select

which one of the various definitions should be the one I am looking for. So I always try to make use of context given first (Post-reading interview, 7/8/09).

During the think-aloud session, she struggled with the word “deprivation”, and she commented,

“I guess it is very important for me to know the meaning of this word to understand the main idea”.

Despite some useful context which could help determine the meaning, she wasn’t successful in making use of it; therefore, she turned to strategy no. 15 using reference materials. She explained:

Researcher: Since you could not rely on the context available to guess the meaning of this word, how do you want to continue?

Lulua: I will look it up in the dictionary. I usually try an English-English dictionary first. [She consulted a dictionary.] Ah...it says “the lack of something that you need in order to be healthy, comfortable, or happy.” “ so, now I know that “deprivation” means something we need.

Researcher: How about the meaning of “lack”?

Lulua: I am not sure what it means. But I know it has a positive connotation. It must mean something good that makes you healthy, comfortable, and happy. (Think-aloud 2, 7/8/09).

The excerpt above indicated that although she depended on some commonly used strategies, how she derived word meanings was not strictly accurate due to her limited English reading proficiency as well as narrow repertoire of vocabulary. Inevitably, failure to capture the meaning of important words resulted in her inability to fully comprehend the text.

As for the self-report of online reading strategies, she read an article about a raw food diet from:http://altmedicine.about.com/od/popularhealthdiets/a/Raw_Food.htm.

First of all, strategies no. 5 using prior knowledge and no. 15 using reference materials were used when she was trying to get an idea of what the article was about. She wrote,

The first thing I read is the title which says “Raw Food Diet”. I am not sure what raw means here. I only know its meaning in phrases such as “raw materials”, but I think it sounds strange. So I consulted an English-Arabic dictionary, and now I know that it can also mean “not cooked”. That fits well in this context. The article should have

something to do with eating food that is not cooked when we go on a diet (Self-report, 7/15/09).

Also, when she encountered some difficult words or concepts, she occasionally relied on strategy no. 17 clicking on links to other sites in order to gain further information.

For instance, she reported, I read the sentence which says,

“The raw food diet contains fewer trans fats and saturated fat”. I was curious about what “saturated fat” is, so I clicked on that particular phrase. The link that I followed gives some detailed information about this type of fat, and part of what I just learned is that saturated fat is a type of fat from meat and milk products. It is considered less healthy than other kinds of fat from vegetables or fish because of high cholesterol. It’s good to learn something new this way (Self-report, 7/15/09).

Besides consulting dictionaries once context clues were not sufficient to help Lulua deal with vocabulary difficulty, she reported using other types of outside resources as well such as Google and Wikipedia. The following excerpt illustrates the point:

The very last sentence says, “Cooking makes certain phytochemicals easier to absorb, such as beta-carotene in carrots”. I don’t know what the long word “phytochemicals” means, but I know that it is important to know. I started figuring out its meaning by using a paper dictionary. Unfortunately, I couldn’t find the word there. So I continued to use Google and followed the link to Wikipedia which gives me some useful information. I really like Google because it tells me nearly everything I want to know in just a few seconds. For me, this seems like one of the benefits of reading online (Self-report, 7/15/09).

As shown above, Lulua, like other participants, commented on how the Internet provides readers with ample opportunities to gain more information and to seek assistance from a wide range of resources available to them online.

In general, although Lulua was considered a less proficient reader, she demonstrated how she used a wide range of strategies as proficient readers did. For instance, she strategically read the first and the last paragraphs of the texts to get some ideas about what she read. As for her ability to deal with vocabulary difficulty, it was revealed that Lulua’s failure to capture the accurate meaning of unknown words by means of context clues was attributable to her limited English reading proficiency and dearth of word knowledge. Nevertheless, she frequently solved the problem by clicking on links to other sites to gain further information about certain complex ideas. Moreover, such

online resources as Google and Wikipedia were observed and reported as alternative ways of accessing the information.

Sixth Student: Lamia

Lamia is a 20-year old student, Medical Track. She had been studying English for 15 years in Saudi governmental schools. She considered her overall English and reading proficiency as good and rated herself as having very high computer skills. Lamia spent approximately three to four hours online each day reading class materials, writing journal entries in her personal blog, and chatting with friends and family through WhatsApp. From time to time, Lamia had to read news in English for class assignments (In Medical Track they study English for 20 hours a week) although she preferred up-to-date news in Arabic. Apart from reading a wide range of topics online, she liked to use the Internet to download favorite music during her free time (Internet use questionnaire, interview, 7/10/09).

In the think-aloud sessions, some global strategies that were commonly used were observed. These include strategies no. 14 deciding what to read closely and what to ignore and no. 23 using typographical aids as illustrated below:

This question asks me to describe when it is time to sleep. I just have to skip these few paragraphs. I think the information in this small blue box will give me the answer. Let me read it more carefully. (Think-aloud 2, 7/10/09).

Why does each person need different amount of sleep? Well...the title "Find out how much sleep you need" in bold type seems important. I am reading what it says here. I guess it might help me find a very good answer to this question (Think-aloud 2, 7/10/09).

Throughout the think-aloud sessions, it was revealed that the most critical problem that hindered her from understanding the texts was a lack of vocabulary knowledge (Observation notes, 7/10/09). More specifically, she usually consulted several dictionaries installed on her computer to decipher the word meanings, which is in line with the support strategy no. 15 using reference materials. As for the type of dictionary, she preferred to use English-Arabic dictionaries as they provide literal translations which she could easily understand. For instance, when reading the second

comprehension question, she was unsure of the meaning of “withdrawal” which is used in the second question, and she said,

“I don’t know what “caffeine withdrawal” is. I need to find the meaning of “withdrawal” in a dictionary so I get its meaning in Arabic” (Think-aloud 1, 7/10/09).

In case any of these resources was not able to help her deal with vocabulary difficulty, she began to depend more heavily on context clues as illustrated in her think-aloud:

The meaning of “deprivation” I found in the dictionary doesn’t make sense when I translate the whole sentence literally. So I need to figure out from the context given. Oh, I got it. It refers to when we don’t get enough sleep (Think-aloud 2, 7/10/09).

In addition to using a bilingual dictionary to help understand the meaning of unknown words, Lamia also preferred to translate what she read in English into Arabic, particularly when attempting to make sense of difficult texts (strategy no. 37). She explained as follows:

When I know the meaning of “jittery” in Arabic, I could know what the sentence is all about. However, some sentences are too difficult to understand, so in that case I need to translate the whole sentences into Arabic. Otherwise, I will have no idea what they are talking about (Post-reading interview, 7/10/09).

It is noteworthy that Lamia also used some other common strategies; nevertheless, how she implemented the strategies did not substantially contribute to reading comprehension. To illustrate, she scrolled up and down in a webpage when trying to find an answer to the question related to the most important stage of sleep. She uttered, the whole section talks about the importance of deep sleep and REM sleep.

I don’t know which stage is more important, though. I cannot find the right sentence that answers the question. But I guess it should be REM sleep, the last stage (Think-aloud 2, 7/10/09).

Superficially, it appeared as if she were using a combination of strategies no. 6 scrolling through text and no. 25 going back and forth in text. However, when doing this, she did not read carefully what it says in the paragraph where an answer is embedded. She simply skimmed through the whole section, paying attention to sentences in bold type only, which ultimately kept her from locating the right information to support the answer given.

In her self-report of online reading strategies, Lamia reported how she went about reading a webpage about sushi, the most famous Japanese dish outside of Japan, and one of the most popular dishes among the Japanese themselves (<http://www.japan-guide.com/e/e2038.html>).

Again, although the text she selected was of a moderate level of difficulty, she articulated her concerns with several unknown words encountered in the text. Following is one of the examples of what she wrote:

When I didn't understand certain words such as "vinegar", I consulted a dictionary installed on my computer. However, sometimes I could not find words there, so I would use a paper dictionary. Anyway, whenever I felt too lazy to do all these, I would go ahead and guess the word meanings from context (Self-report, 7/17/09).

Her explanation reflected the use of strategies no. 15 using reference materials and no. 31 guessing meaning of unknown words. The manner in which these common strategies were used was, however, found to be in reverse direction to many other participants. As evidenced in the data, Lamia chose to consult a dictionary immediately after she found an unknown word or expression. Unable to find words in her dictionary or other online resources such as Google, Lamia resorted to making use of context provided in the text, the strategy which was much preferred by several other readers. Another strategy she reported was clicking on links to other sites (strategy no. 17) so as to gain further information about the topic she was reading. She commented, *"Oftentimes, I wanted to know more about what I read. For example, when reading about sushi, I also wished to know the history of sushi, types of sushi, and their ingredients. So, at the bottom of the Wikipedia webpage I visited, I saw the words "see also" and "references". First, I clicked on "List of sushi and sashimi ingredients and styles" to find the information I needed. This is very simple"* (Self-report, 7/17/09).

In general, Lamia was a less proficient reader who experienced difficulties with vocabulary in the texts. To help alleviate the problem, Lamia consulted her English-Arabic dictionary installed on her Mobile as it provided literal translations. As indicated earlier, the manner in which word attack strategies were used was in reverse

direction to several other informants. In other words, Lamia tended to make use of context clues provided only when she was not able to find words in either her dictionaries or other online resources or the meanings in Arabic did not make sense for the whole sentence. Lamia also preferred to translate what she read in English into Arabic, particularly when attempting to understand difficult texts

Seventh Student: Mishary

Mishary is a 20-year old student in the science Track. He had been studying English for 15 years and considered his overall English and reading proficiency levels as fair. With regard to his Internet use behavior, he rated himself as having high skills in using the Internet and search engines to locate and access information on a wide range of topics. Each day, he spent about one hour reading online local and international news in English for class assignments (In Science Track they study English for 20 hours weekly). Additionally, he used e-mail and WhatsApp as major means of communication with friends and family on a regular basis (Internet use questionnaire, interview, 7/13/09).

During the think-aloud session, Mishary initially skimmed through the whole text to get the gist of it and proceeded to read the comprehension questions. Since the first question required that he give the meaning of “jittery”, he then started to quickly locate the word using his competent computer skills (Observation notes, 7/13/09). He pointed out,

“This text is pretty long and I don’t want to spend much time read the whole thing in detail in order to find the word “jittery”. So first of all, I will use this search function. [He pressed Ctrl + F, typed “jittery” in the box that popped up, and pressed enter.] Oh, there it is! Now, let me take some time to read this paragraph” (Think-aloud 1, 7/13/09).

It is interesting to mention that, to guess meaning from context, many participants preferred to read only the sentences that came before and after the sentence where the word was embedded. In contrast, while the word he found was in the middle of the paragraph, Mishary decided to read the whole paragraph in order to learn the meaning of the word. Doing so, he explained how he came up with an answer,

Researcher: So what do you think the word “jittery” mean?

Mishary: This sentence says, “Too much caffeine makes you jittery and if you consume it later in the day, the caffeine makes it more difficult to sleep at night.”

Umm...I think the word “jittery” probably means anxious.

Researcher: Can you tell me how you came up with that meaning?

Mishary: Well...it explains that you will become jittery. Even though I don’t know the word, this sentence clearly gives me a good hint. Also, I know a friend who likes to drink coffee, and he usually tells me how he feels because of too much caffeine. (Think-aloud 1, 7/13/09)

Obviously, Mishary used strategy no. 31 guessing meaning from context together with no. 5 using prior knowledge as shown in the account.

Like other less proficient readers, Mishary appeared to experience a great deal of vocabulary difficulty throughout the think-aloud tasks. Worse yet, he occasionally expressed his anxiety when he was not aware of not only the meanings of key words used in the text but also those of words used in certain comprehension questions. The quotes below are indicative:

The second question asks me to explain how we can avoid those symptoms of caffeine withdrawal mentioned in the article. I don’t know the meaning of four words used in the question, namely “avoid”, “symptoms”, “withdrawal”, and “mentioned”. How can I give you an answer when I don’t even understand the question? (Think-aloud 1, 7/13/09).

This question says, “Describe how our bodies know when it is time to sleep”. What am I supposed to do? I don’t know what the word “describe” means. I need to know what it means first (Think-aloud 2, 7/13/09).

Whenever faced with these word problems, he sought assistance from his favorite dictionaries desperately, including an English-Arabic paper dictionary and a talking dictionary. Also, during the think-aloud sessions, he repeatedly demonstrated how he consulted one of these dictionaries to deal with word difficulty, which reflected the use of strategy no. 15 using reference materials, one of the most frequently used support reading strategies. With regard to using dictionaries, Mishary added that he used neither online dictionaries nor monolingual ones unless required by English instructors (Post-reading interview, 7/13/09).

When there were too many unknown words, Mishary intentionally skipped words or sections he found in the text (strategy no. 33) and decided to rely primarily on his

existing knowledge (strategy no. 5) to provide an answer to the question as he explained below:

I think it is too time-consuming for me to read the whole section full of unfamiliar words. So I will answer the question based on what I already know. I would say that our ages largely determine how much sleep we need. For example, infants and babies need many more hours of sleep than teenagers and adults because proper development demands that babies sleep a lot (Think-aloud 2, 7/13/09).

Despite its similarity with the think-aloud data, Mishary's self-report of online reading revealed additional strategies employed on his own without the presence of the researcher. He selected a CNN article about the danger of smoking entitled "Why do worriers die younger? Their smoking may be a culprit" from: <http://www.cnn.com/2009/HEALTH/08/20/smoking.worry.mortality/index.html>.

First, Mishary reported using strategy 17 clicking on links to other sites as well as strategy no. 29 asking oneself questions as he clearly explained:

"I clicked on the word "smoking" here because I was curious to know what information would appear. Then, I saw that the new webpage contains a video clip portraying a smoking Western woman. I was just wondering how women in the Western world are perceived when they smoke and how the perception can be compared to the same situation in Saudi Arabia. So I watched this video clip to see if it helps answer my question" (Self-report, 7/20/09).

Evidently, while the strategy of asking oneself questions becomes one of the most sophisticated strategies readers can use to foster comprehension, Mishary managed to make use of it impressively.

In relation to the word complexity, it continued to cause him trouble occasionally while he was attempting to make sense of the text. Also, the self-report data confirmed that strategy no.15 using reference materials was much preferred to strategy no. 31 guessing meaning from context. For instance, he wrote,

"I wanted to know the meaning of "neuroticism", so I looked it up in an English-Arabic paper dictionary" (Self-report, 7/20/09).

The sentence in which the unknown word is embedded reads, "Neuroticism refers not only to anxiety, but also to being highly sensitive to stressful situations".

Unfortunately, learning the word meaning from a dictionary, he was unaware of the explicitly stated context clue in the sentence.

In general, Mishary, like other less proficient readers, experienced major vocabulary difficulties throughout the think-aloud tasks. However, in his case, his feeling of considerable anxiety was expressed as he was unaware of not only the meanings of unknown words in the texts but also those of words used in some comprehension questions. Having word problems, he relied heavily on his English-Arabic paper dictionary and a talking dictionary, rather than a monolingual one.

Mishary sometimes skipped certain difficult words or sections and decided to answer the questions using his background knowledge.

Eighth Student: Raghad

Raghad is a 19-year old student in Science Track. She had been studying English for 15 years. She considered her overall English proficiency as good whereas her reading ability was rated as fair. Spending about one or two hours a day reading class materials in English, Raghad rated herself as having high computer skills in navigating the Internet and using search engines to gain online information. She also had an opportunity to use English as she developed his own blog and used email as a means of communication. In addition, she reported playing online games and downloading music frequently during her spare time (Internet use questionnaire, interview, 7/15/09).

While undertaking the first think-aloud task, Raghad decided to read the text first in order to come up with a major idea conveyed in the text. To facilitate the process, she selected to use strategy no. 21 paraphrasing for better understanding as she stated, *“Well...I think this paragraph is talking about how caffeine poses danger to consumers and how we can avoid it to get a better sleep at night”* (Think-aloud 1, 7/15/09).

When asked about the meaning of unknown word “jittery”, Raghad initially attempted to derive its meaning by making use of context provided. However, she later realized

that relying merely on context in this case was inadequate; hence, she continued to use alternative approaches to decode the word meaning. Below is her explanation:

I tried to guess first, but it seemed I could not. The sentence asserts that too much caffeine makes you jittery. How could I make use of the context provided here? I think caffeine can cause a wide range of dangers and symptoms. So with very little information, I was wondering what type of symptom the text is referring to. Let me use "Google Image" to see what "jittery" is. [She typed in the word in the Google bar and clicked "Image" to view illustrations.] Umm...all these images seem to be irrelevant to the possible meaning of the word. So since they don't help, I will have to look it up in a dictionary [She consulted her favorite online English-Arabic dictionary] (Think-aloud 1, 7/15/09).

The excerpt above indicates that, to deal with vocabulary difficulty, Raghad preferred guessing meaning of unknown words using context (strategy 31) to using reference material (strategy 15). However, her order of preference was not remarkably consistent. More specifically, in attempting to determine the meaning of the word "deprivation", Raghad randomly chose to consult the online dictionary. She said:

"I need to find what "deprivation" means. [She typed in the word in the search bar.] What? The only definition I got from this dictionary is "the state of being withdrawn". I don't think it fits well here in this sentence. The word must mean something else. Let me go back and read the sentence again. It says, "Sleep deprivation also affects motor skills, enough to be similar to driving while drunk if seriously sleep deprived." the words surrounding are very helpful. I am pretty sure "sleep deprivation" refers to a lack of sleep" (Think-aloud 2, 7/15/09).

It is interesting to note that although Raghad was aware of how to use context to determine word meanings, she depended to a large extent upon reference materials (e.g., an online dictionary) when undertaking reading tasks (Observation notes, 7/15/09).

Aside from strategies for dealing with vocabulary difficulty, one of his major difficulties in reading online, Raghad utilized some other beneficial strategies to promote reading comprehension. For instance, she used strategy no. 23 using typographical features such as bold face and italics to identify key information, particularly while reading lengthy texts. She explained,

“This is a very long text. In order not to spend too much time, I will look at each title in bold to find where specific pieces of information are and to rapidly locate information to respond to questions” (Think-aloud 2, 7/15/09).

Additionally, Raghad took advantage of online reading by clicking on links to other sites which contain further information she needed (strategy17). To illustrate the point, Raghad clicked on the link “omega-3 fatty acid” to figure out the definition of the term in a new window. Alternatively, expecting to obtain additional information that helps answer certain comprehension questions, Raghad clicked on “sleep and aging” and “tips for getting better sleep” (Observation notes, 7/15/09).

It was found in Raghad’s self-report of online reading strategies that she used some other interesting strategies when she was reading an article entitled “Everything You Know about Protein Is Wrong” from:

<http://www.articlehealthandfitness.com/article>.

At the beginning, she looked at different topics and chose to read only those she found interesting or relevant to his purpose of reading, which corresponds with strategy no. 14 deciding what to read closely and what to ignore. She added,

“I read what it says under the title “What is Protein? ”just to get an idea of how protein was meant here. Then, I skipped the section “Why Do You Need Protein? ” as the benefits of protein are very obvious, and I jumped to the section “Protein Demystified” because I thought this section should tell readers something interesting” (Self-report, 7/22/09).

Taking into account the fact that the article is long and full of unknown words, she deliberately skipped words or sections he found difficult or unfamiliar (strategy no. 33) as she pointed out,

“I was not able to consult a dictionary every time I found words I didn’t know. So I had to skip them very often but sometimes I returned to certain words when I felt necessary” (Self-report, 7/22/09).

Finally, since the article he selected to read on his own is argumentative in nature, Raghad mentioned the credibility of the article. Interestingly, she commented,

“I believe this article is trustworthy. There are a lot of ideas presented in this article, and they all sound credible based on the information the writer gave. Actually, I think anything you can call an article is entirely credible” (Self-report, 7/22/09).

Evidently, she attempted to use strategy no. 34 evaluating text critically; however, his failure to implement the strategy simply prevented him from becoming an efficient reader, especially in the online reading context where critical reading skills are of vital importance.

In general, similar to the cases of other less proficient readers, Raghad's difficulty with online reading comprehension was largely attributed to his narrow vocabulary repertoire. When he dealt with word problems, it was indicated that the approach she adopted each time was not consistent.

In other words, she attempted to derive word meanings by means of context clues before deciding to consult outside resources (e.g., an online dictionary) and vice versa. Additionally, in the online reading context, Raghad liked to click on links to access further information or clarification on certain topics of his interests as evidenced in the account above.

4.4.3 Verification of the Study Hypothesis (2): It was revealed that all students whether they are proficient readers or less proficient readers used methods of employing strategies, regardless it was differed from each other in terms of both frequency and quality of use.

This confirms the second hypothesis that, students use several reading strategies in actual reading tasks.

4.5 Research Hypothesis 3: There are similarities and differences exist between proficient and less proficient readers:

The third research hypothesis focused on gaining an understanding of the similarities and differences which existed between proficient and less proficient readers. To test this hypothesis, I used both quantitative and qualitative data from multiple sources which allowed triangulation.

The quantitative data came from the OSORS, which measured the students' perceived use of metacognitive strategies when they read online texts for academic purposes. The qualitative data came from: (1) pre- and post-reading interviews; (2) observations

through think-aloud sessions; and (3) self-reports of online reading strategies. As for the quantitative data which were partly reported in research question 1, the findings presented focused primarily on the data from all surveyed students.

Table 4.10 discussing differences in reported strategy use by proficient and less proficient students in the study, for this study, the level of significance was set at $p \leq .05$.

Table 4.10: Differences in Reported Strategy Use by Proficient and Less Proficient Students:

Strategy		Proficient (N = 68)		Less Proficient (N = 43)		T	p- Value
		M	SD	M	SD		
Global Reading Strategies							
1	Having a purpose in mind	3.15	1.7	2.53	0.74	-0.24	0.0013
2	Live chatting with other learners	2.16	0.92	1.81	0.73	-0.02	0.0392
3	Live chatting with native speakers	2.6	0.90	1.65	0.69	-0.10	0.0122
5	Using prior knowledge	3.32	0.92	2.74	0.90	-0.23	0.0015
6	Scrolling through text	3.65	1.00	3.21	0.91	-0.06	0.0225
8	Analyzing if the content fits purpose	2.97	0.81	2.60	0.62	-0.08	0.0129
10	Noting length and organization	3.59	0.92	2.98	0.94	-0.25	0.0010
14	Deciding what to read closely	3.24	0.83	2.79	0.67	-0.15	0.0039
17	Clicking on links to other sites	3.04	0.95	2.67	0.84	-0.02	0.0394
18	Using tables, figures, and pictures	3.10	1.15	2.33	0.94	-0.36	0.0003
20	Using context clues	3.63	0.93	2.84	0.81	-0.45	<.0001
23	Using typographical aids (e.g., italics)	3.60	0.95	2.93	0.74	-0.34	0.0001
24	Evaluating what is read	2.94	0.73	2.70	0.83	0.05	0.1080
26	Checking my understanding	3.16	0.70	2.58	0.88	-0.28	0.0002
27	Guessing what the content is about	3.62	0.88	3.07	0.91	-0.20	0.0021
30	Confirming predictions	3.04	0.78	2.51	0.63	-0.25	0.0003
32	Scanning the text before reading Total	3.21	0.89	2.77	0.81	-0.11	0.0102
Total		3.15	0.90	2.63	0.80	-0.43	<.0001
Problem Solving Strategies							
9	Reading slowly and carefully	3.38	0.86	2.88	0.70	-0.19	0.0019
11	Trying to stay focused on reading	3.50	0.82	2.77	0.72	-0.43	<.0001
13	Adjusting reading speed	2.93	0.94	2.42	0.82	-0.16	0.0043
16	Paying closer attention to reading	3.32	0.97	2.72	0.80	-0.26	0.0009
19	Pausing and thinking about reading	3.00	0.86	2.63	0.85	-0.04	0.0279
22	Visualizing information read	3.78	0.94	3.02	0.74	-0.42	<.0001
28	Rereading for better understanding	3.29	1.08	2.56	0.80	-0.36	0.0002
31	Guessing meaning of unknown words	3.57	0.95	2.70	0.96	-0.50	<.0001

33	Skipping difficult words or sections	3.16	1.05	3.09	0.78	0.30	0.7117
34	Evaluating text before using it	3.09	0.91	2.77	0.87	0.02	0.0683
35	Distinguishing fact from opinion	3.26	0.92	2.56	0.73	-0.38	<.0001
36	Resolving conflicting information	2.54	0.87	2.35	0.81	0.13	0.2406
Total		3.24	0.93	2.71	0.80	-0.43	<.0001
Support Reading Strategies							
4	Taking notes while reading	2.12	0.87	1.95	0.75	0.16	0.3119
7	Reading aloud when text is hard	2.91	0.97	2.60	0.85	0.05	0.0921
12	Printing out a hard copy of text	2.40	1.01	2.14	0.97	0.13	0.1859
15	Using reference materials	3.56	1.12	3.26	1.00	0.11	0.1524
21	Paraphrasing for better understanding	3.66	0.92	2.91	0.81	-0.41	<.0001
25	Going back and forth in text	3.04	0.97	2.60	0.82	-0.09	0.0152
29	Asking myself questions	2.75	0.92	2.63	0.90	0.23	0.4938
37	Translating from English into Arabic	2.90	1.09	3.14	0.77	0.62	0.2085
38	Thinking in both English and Arabic	3.10	0.96	2.84	0.84	0.09	0.1409
39	Seeking material in Arabic	3.01	1.06	2.49	0.80	-0.15	0.0061
Total		2.95	0.99	2.66	0.85	-0.17	<.0001

As revealed in the table above, the proficient reader group reported that they used problem solving strategies the most ($M = 3.24$), global strategies second most ($M = 3.15$), and support strategies the least ($M = 2.95$). The less proficient reader group also reported that they used problem solving strategies the most ($M = 2.71$), but reversed the order of the other two strategy types with support strategies ($M = 2.66$) next and then global strategies ($M = 2.63$). It was also found that there were statistically significant differences in all of the three subsections reported to be used by the proficient and less proficient groups ($p < 0.0001$).

As far as individual strategies are concerned, the differences between the proficient and less proficient reader groups in the use of global reading strategies were statistically significant, with an exception of strategy no. 24 I critically analyze and evaluate the information presented in the online text ($t[109] = 0.05$; $p < 0.05$). Only two of the strategies in the problem solving subcategory were not found to indicate statistically significant differences, which include no. 33

I skip words or sections I find difficult or unfamiliar and no. 35 I can distinguish between fact and opinion in online texts. However, in relation to the support reading

strategies that were reported, statistically significant differences were found between two groups of students in the means of only three strategies: no. 21 I paraphrase (restate ideas in my own words) to better understand what I read online, no. 25 I go back and forth in the online text to find relationships among ideas in it, and no. 39 When I encounter difficult reading in English, I seek material on the same topic in Arabic.

Based on their responses on the OSORS, these two groups of students were found to be quite different in relation to some major aspects. With regard to how the students deal with vocabulary difficulty they encounter while reading, the proficient students reported both no. 20 I use context clues to help me better understand what I am reading online ($M = 3.63$) and no. 31

When I read online, I guess the meaning of unknown words or phrases ($M = 3.57$). While these students depend primarily on contexts to help determine the word meanings and foster the overall reading comprehension, the less proficient students reported using these two strategies with lower mean values ($M = 2.84$ and 2.70 , respectively). For the less proficient students, the most frequently used strategy to tackle word problems is no. 33 I skip words or sections I find difficult or unfamiliar ($M = 3.09$). Even though the proficient students also reported this strategy with a mean value of 3.16 , this specific strategy is much less preferred by the students in this group, particularly when compared to the means of the strategies nos. 20 and 31 as explained earlier.

The strategy no. 37 when reading online, I translate from English into Arabic is placed among the top 10 strategies used most frequently by the less proficient students with a mean of 3.14 . Not only did these students report using this strategy on a regular basis, but this strategy is also the only strategy that the less proficient students reported using more frequently than the proficient students. With a relatively low mean value of 2.90 , this strategy is, therefore, not included in the top 10 strategies, but in the bottom 10 strategies used least by the proficient students.

Another aspect that is worth discussing is how both groups of students used reference materials (e.g., an online dictionary) to help understand what is read online which is the strategy no. 15 included on the OSORS. It was shown that the less proficient students reported using this support reading strategy with the highest mean of 3.26, indicating that they sought assistance from outside materials to foster online reading comprehension. While this is the most preferred strategy among the less proficient students, it is ranked ninth in the top 10 strategies reported to be used most frequently by the proficient students with a mean of 3.56.

Generally, as discussed above, the quantitative data obtained from the OSORS revealed differences between two groups of students in relation to some major aspects. First, except for one strategy (no. 37 When reading online, I translate from English into Arabic), all of the strategies on the OSORS were reported to be used more frequently by the proficient students. In addition, they were much more likely to report using sophisticated strategies (e.g., evaluating what is read, distinguishing fact from opinion, and paraphrasing for better understanding) and less likely to report less sophisticated strategies (e.g., going back and forth in text, skipping difficult words and sections, and translating from English into Arabic).

To provide further insights into the students' actual use of online reading strategies, the qualitative data were also incorporated in this research question. However, I need to acknowledge that, in spite of a wide range of dimensions of similarity and difference between two groups of students, it is deemed difficult, if not impossible, to report all these aspects in great detail in this chapter. Thus, the following section was directed toward illustrating certain dimensions related to the use of strategy in each of the three subsections that were clearly observed between proficient and less proficient students participating in the second phase of the study. In so doing, the data from the related OSORS items were also integrated into the report to help discover whether there was a mismatch between the quantitative and qualitative data types.

4.5.1 Global Reading Strategies

Within this particular subcategory, three strategies that were selected based on their high frequency of use during the think-aloud tasks and the self-reports of online reading strategies include no. 10 noting length and organization, no. 14 deciding what to read closely and what to ignore, and no. 17 clicking on links to other sites. Table 4.11 below displays the means, standard deviations, and results from t-tests of the three selected strategy items in the global subcategory.

Table 4.11: Global Reading Strategy Items

Strategy		Proficient (N = 68)		Less Proficient (N = 43)		T	P-value
		M	SD	M	SD		
10.	I review the online text first by noting its characteristics like length and organization.	3.59	0.92	2.98	0.94	-0.25	0.0010
14.	When reading online, I decide what to read closely and what to ignore.	3.24	0.38	2.79	0.67	-0.15	0.0039
17.	When academic sites have links to other sites, I click on them to see what they are.	3.04	0.95	2.67	0.84	-0.02	0.0394

As indicated above, the differences between the proficient and less proficient reader groups in the use of three selected global reading strategies were statistically significant. In other words, the former group reported on the OSORS that they used these strategies more frequently than the latter group when they read online in English for academic purposes.

With regard to the actual use of strategies, the section below clearly demonstrates how the selected students from the two groups made use of each of these strategies during the think aloud sessions and the independent reading tasks.

4.5.2 Noting Length and Organization:

Before reading, every student in the proficient reader group reviewed the online text first in order to make a well-informed decision as to the approach to reading the text, particularly when the text was lengthy. This strategy often allowed them to decide

what to read closely and what to ignore (strategy 14). However, not only did how they read depend on the length and organization of the text, but it was also influenced by the purpose of reading. They reported,

I can't read the text very carefully when it is long. So, in this case, I just have to read the comprehension questions first because I can later focus on the text much more precisely (Nouf, think-aloud 2, 6/29/09).

For class assignments, I'll have to see what aspect in the text I should focus heavily on. But to answer comprehension questions like this, I can simply grasp main ideas and ignore several unimportant details (Talal, post-reading interview, 7/3/09).

With an exception of one student (Lulua), the less proficient reader group used this strategy less often, and the result of using this strategy appeared to be vastly different from that of the proficient reader group. More specifically, while noting the length and organization facilitated the proficient reader group in reading the text strategically, it tended to negatively affect the less proficient readers who were easily demotivated by a lengthy text, regardless of text difficulty level. The following quotes provide evidence indicating the difference between the two groups:

Any long text is absolutely torture for me, no matter how easy it is to understand. I usually feel much better when I have a shorter text to read (Lamia, post-reading interview, 7/10/09).

Sometimes, I felt like I read aimlessly. I read from the first paragraph to the last one without knowing which part to focus on. To be frank, I just want to skip this whole text because it is long (Mishary, think-aloud 2, 7/13/09).

I know it's too bad to become less eager to read because of a long text. But trying to stay focused on a short text is hard enough. How can I deal with a very long one like this? (Raghad, post-reading interview, 7/15/09)

Generally, the proficient reader group not only used this strategy with higher frequency, as revealed on the OSORS, but they were also observed using it more purposefully than the less proficient group. Thus, the use of strategy no. 10 noting length and organization eventually contributed to effective online reading.

4.5.3 Deciding What to Read Closely and What to Ignore:

With regard to this strategy, all of the students in both groups were observed making use of it very frequently. However, the quality of using the strategy needs to be investigated and interpreted cautiously. With a high level of English ability, the proficient reader group skimmed through the text for the general ideas before skipping some detailed information.

This kind of rapid reading was deemed appropriate when trying to determine the necessity of reading for thorough or global comprehension. The following excerpts illustrate the point:

To know exactly where the important parts are, I read the comprehension questions first and located key words in the text (Nouf, post-interview reading, 6/29/09).

This section gives further detailed information directly related to the previous paragraph. So, I will ignore this paragraph. Maybe I will have to come back to it later if necessary (Fai, think-aloud 2, 7/1/09).

After reading the titles in bold type, I got an idea of what each paragraph is telling me. Doing this helped me a lot as I didn't need to read the whole text in detail (Talal, thinkaloud 2, 7/3/09).

Contrasting with this group, some participants of the less proficient reader group did not manage to use the strategy while others deliberately skipped certain parts or paragraphs they either could not make sense of or found familiar in light of prior knowledge. Also, they sometimes chose not to read what was of little to no interest to them. The following is indicative of the difference in their strategy use:

Since I already know something about omega-3, I will skip this paragraph which is full of difficult words (Lulua, think-aloud 1, 7/8/09).

I admitted that I skipped certain paragraphs while reading because they were too complicated to understand. I didn't want to spend too much time consulting dictionaries (Lamia, post-reading interview, 7/10/09).

I wish I knew what parts I can simply ignore. Most of the time, the text is long and I don't understand so many ideas presented. All the unknown words in the text overwhelmed me completely (Mishary, self-report, 7/20/09).

Basically, when I read online, I chose to read only a few paragraphs that sounded interesting to me (Raghad, self-report, 7/22/09)

As revealed above, the participants from the proficient reader group made such decisions based on the importance of each part or section in the text whereas the less proficient reader group did so when they were unaware of the gist of each section mainly due to their vocabulary difficulty.

4.5.4 Clicking on Links to Other Sites: In comparison to print-based texts, Internet texts require readers to take a much more active role in determining the content quality and overall coherence of the texts they read.

Readers are provided with ample opportunities to construct their own personal pathways through multiple texts. Thus, while reading for academic purposes, the participants from both groups searched for additional information online by clicking on links to other sites. Nevertheless, the manner in which this strategy was used by the proficient reader group differed markedly from that by the less proficient reader group. Two students in the proficient group initially relied on context clues surrounding a link to make a prediction about the information on the new site and evaluated the content according to the reading goal. The quotes below are indicative:

I did not click on links randomly because it would waste my reading time. Instead, I tried to guess where the link might lead and saw if it satisfied my curiosity (Nouf, Post-reading interview, 6/29/09).

This sentence says that cherries contain melatonin. I am clicking on the link to see if I will learn more about this substance that I already know and how it relates to sleep cycle in the new window. Then, I can tell you whether to read or to ignore (Alanood, think-aloud 1, 7/6/09).

Unlike the first group, all students in the less proficient reader group implemented the strategy to learn more about technical terms or unknown words. They reported,

“I didn’t know what kind of information I would get by clicking on the link’ saturated fat” (Lulua, self-report, 7/15/09).

“I usually clicked on new links to get the meaning of unknown words or concepts. It’s the easiest way to deal with the problem” (Lamia, post-reading interview, 7/10/09).

“I clicked on the word “smoking” here because I was curious to know what information would appear” (Mishary, self-report, 7/20/09).

Even though the links can tell me a lot more about what I read, I usually click on them to either find the definition of technical terms or further information that helps answer comprehension questions (Raghad, post-reading interview, 7/22/09).

Generally, the skilled readers in this study made predictions and inferred connections between context clues, their background knowledge, and their reading purpose. In contrast to this group, the less skilled readers tended to click on links when they were unaware of words or concepts embedded in the text. Therefore, new links were widely regarded as sources of word knowledge per se, rather than target locations where readers navigate relevant and efficient pathways through Internet texts.

4.5.5 Problem Solving Strategies

Based on their high frequency of use during the think-aloud tasks and the self-reports of online reading strategies, three selected strategies within this subcategory include no. 16 paying closer attention to reading, no. 31 guessing meaning of unknown words, and no. 33 skipping difficult words or sections. Table 4.12 below indicates the means, standard deviations, and results from t-tests of these selected strategy items in the problem solving subcategory.

Table 4.12: Problem Solving Strategy Items

Strategy		Proficient (N = 68)		Less Proficient (N = 43)		T	P-value
		M	SD	M	SD		
16.	When online text becomes difficult, I pay closer attention to what I am reading.	3.32	0.97	2.72	0.80	-0.26	0.0009
31.	When I read online, I guess the meaning of unknown words or phrases.	3.57	0.95	2.70	0.96	-0.50	0001.>
33.	I skip words or sections I find difficult or unfamiliar.	3.16	1.05	3.09	0.78	0.30	0.7117

As shown above, the differences between the proficient and less proficient reader groups in the use of three selected problem solving strategies were statistically significant, with an exception of strategy no. 33 skipping difficult words or sections,

which becomes one of the two strategies in this subcategory without statistically significant differences. Generally, the former group reported on the OSORS that they used these strategies more frequently than the latter group when they read online in English for academic purposes.

To demonstrate how the students used these strategies in various actual tasks, the following section discusses similarities and differences found between the proficient and less proficient students during the think-aloud sessions and the independent reading tasks.

4.5.6 Paying Closer Attention to Reading:

It was observed that the students from both groups used this strategy often in combination with such strategies as no. 9 reading slowly and carefully, no. 13 adjusting reading speed, and no. 28 rereading for better understanding, all of which also revealed statistically significant differences. It was obvious that the proficient readers used this strategy deliberately when they encountered difficult or complex sections within the text they read. Three of them pointed out,

If the text is not too hard, I read it quite fluently. Anyway, whenever some parts are complicated to understand, I just need to read them more carefully and maybe look up the words I don't know (Nouf, pre-reading interview, 6/29/09).

I tried hard to make sense of complex sentences by separating the subject and predicate in those sentences, for example (Fai, post-reading interview, 7/1/09).

This article is long and difficult in terms of the ideas presented. So, I adjusted my reading speed and focused more on the article, compared to the think-aloud tasks (Alanood, selfreport, 7/13/09).

Nonetheless, how the less proficient reader group made use of this strategy was challenging to document as a specially applied strategy because they constantly found the texts they read difficult and had to pay close attention to them throughout almost all of the observations. They reported,

Normally, I find reading in English pretty difficult for me. You might have noticed that I got stuck very often while I was trying to understand the text. It took a lot of energy (Lamia, post-reading interview, 7/10/09).

Well...I think I need to pay attention to almost every detail in the text first because it's long and seems difficult. I'm not sure where the main ideas are (Mishary, think-aloud 2, 7/13/09).

If I am overwhelmed by so many difficult parts, I usually skip them even though I really want to pay more attention to them and try to understand (Raghad, post-reading interview, 7/15/09).

As indicated above, with a high level of English reading performance, the skilled readers' occasionally paid particular attention to what they read when online text became difficult. In contrast, the less skilled readers, due to their limited English proficiency, had difficulty with complex ideas and sentence structures and eventually decided to either concentrate special attention to the whole text or ignore those obstacles by means of strategy no. 33 skipping difficult words or sections as discussed in a later part.

4.5.7 Guessing Meaning of Unknown Words:

Throughout the think-aloud sessions and independent reading tasks, it was evident that one of the most critical problems that hindered students in both groups from fully understanding the texts they read was a limited repertoire of vocabulary. Thus, as demonstrated in the previous section, all of them frequently relied on this strategy to remediate their vocabulary problems in their English academic reading online. When faced with unknown words, some less proficient readers initially looked for the clues surrounding the words to guess a possible meaning. If they were not able to predict the meaning of unknown words, they then consulted the dictionary.

Others, however, preferred to consult the dictionary before making use of context clues. Below illustrates how they made use of the strategy:

When I didn't understand certain words such as "vinegar", I consulted a dictionary installed on my computer. However, sometimes I could not find words there, so I would use a paper dictionary. Anyway, whenever I felt too lazy to do all these, I would go ahead and guess the word meanings from context (Lamia, self-report, 7/17/09).

Actually, I like to consult the dictionary better than to guess the meaning from context because it's faster and more accurate (Mishary, think-aloud 1, 7/13/09).

In contrast, the proficient readers were found to effectively make use of different types of context clues provided together with their practical knowledge of grammatical structures. In case the contexts provided were not sufficient to determine the meaning, they decided to either skip the words they found unnecessary or look them up in the dictionary or from other reliable sources. The difference in how the two groups of students guessed meanings of unknown words manifested itself in the following examples:

What I did during the think-aloud really reflected what I usually do when I read in English. I tried to make sense of the word meanings by using different types of context clues I have learned in class, which include definition, restatement, example, comparison and contrast, and cause and effect. This type of knowledge helped me a lot (Fai, postreading interview, 7/1/09).

I am searching for the meanings of “jittery”, “vicious”, and “perk up” from the dictionary because this paragraph does not give me much context to guess their meaning (Tala, think-aloud 1, 7/3/09).

Generally, how these two groups of students employed this strategy was found to be different from each other in terms of both frequency and quality of use. In possession of effective skills and practical knowledge, the skilled readers tended to determine the meaning of unknown words successfully. In contrast, due to a dearth of essential knowledge about the surrounding words, the less skilled readers expressed a preference to depend on outside sources of information, which corresponds with strategy no. 15 *using reference materials*.

4.5.8 Skipping Difficult Words or Sections:

This strategy is one of the two strategies in the problem solving subcategory without statistically significant differences between the proficient and less proficient reader groups. In other words, both groups reported on the OSORS that they used this strategy to a similar extent when they read online in English for academic purposes. It was found that the proficient reader group made a decision as to when to skip certain

difficult words or sections if they gained a global comprehension of the text they read. They would come back to the words only when necessary. They articulated,

I am trying to decide which words I really need to know their meaning by using context clues. The phrasal verb “throw off” in this paragraph seems irrelevant to the main idea, so I can skip it. Anyway, I should guess the meaning of “hyperbole” in the concluding paragraph as it sounds important (Nouf, self-report, 7/6/09).

I skipped several parts I found complex intentionally because I realized that I still understood the text without knowing all the meanings of the unfamiliar words (Fai, think aloud 2, 7/1/09).

Sometimes when I skipped difficult words, I needed to come back and determine their meanings because they were used repeatedly in the text. I thought it was important to know the meanings (Alanood, post-reading interview, 7/6/09).

However, the less proficient students tended to do so when they did not want to continue consulting the dictionary because of their decreased motivation to read. Worse yet, some students in this group sometimes skipped some sections where important ideas were embedded and provided answers to comprehension questions based solely on their prior knowledge. The following quotes reflect the differences in how both groups used the strategy:

I think it is too time-consuming for me to read the whole section full of unfamiliar words. So, I will answer the question based on what I already know. I would say that our ages largely determine how much sleep we need. For example, infants and babies need many more hours of sleep than teenagers and adults because proper development demands that babies sleep a lot (Mishary, think-aloud 2, 7/13/09).

It’s just too tiring to look up every unknown word in a dictionary. Then, I skipped a lot of difficult words in the final paragraphs when I was not highly motivated to read anymore (Raghad, post-reading interview, 7/15/09).

The quotes above indicated that the students from both groups used this strategy frequently; however, their reasons for using it were different. The skilled readers evaluated how important it was to either try harder to make sense of the difficult words or sections or simply ignore them when they gained an approximate comprehension of the text. Contrasting to this group, the less skilled readers used this

strategy unavoidably when they lacked motivation to continue reading and consulting the dictionary.

4.5.9 Support Reading Strategies:

Within this particular subcategory, three strategies that were selected based on their high frequency of use during the think-aloud tasks and the self-reports of online reading strategies include no. 15 using reference materials, no. 25 going back and forth in text, and no. 37 translating from English into Arabic.

Table 4.13 below displays the means, standard deviations, and results from T-tests of the three selected strategy items in the support reading subcategory.

Table 4.13: Support Reading Strategy Items

Strategy		Proficient (N = 68)		Less Proficient (N = 43)		T	P-value
		M	SD	M	SD		
15.	I use reference materials (e.g., an online dictionary) to help me understand what I read online.	3.56	1.12	3.26	1.00	0.11	0.1524
25.	I go back and forth in the online text to find relationships among ideas in it.	3.04	0.97	2.60	0.82	-0.09	0.0152
37.	When reading online, I translate from English into Arabic.	2.90	1.09	3.14	0.77	0.62	0.2085

According to the table above, the differences between the proficient and less proficient reader groups in the use of one selected support reading strategy were statistically significant, namely strategy no. 25 going back and forth in text. The other two strategies did not have statistically significant differences. In other words, both groups of students reported on the OSORS that they used these two strategies to a relatively similar extent when they read online in English for academic purposes.

Providing additional information as to the actual use of support reading strategies, the following section discusses similarities and differences found between the proficient and less proficient students during the think-aloud sessions and the independent reading tasks.

4.5.10 Using Reference Materials:

This is one of the most frequently used strategies during online reading in order to deal with difficulty with vocabulary and unknown concepts discussed in the text. It was evident that the participants in the less proficient group used this strategy as often as the proficient group.

They argued that using reference materials was the simplest way to determine the meaning of words rapidly and precisely. Thus, failing to guess meanings from context due to their limited English proficiency, they immediately consulted outside materials to remediate comprehension problems. The students in this group reported,

I usually use an English-Arabic paper dictionary to deal with word problems when I do not manage to guess meanings from context (Lulua, post-reading interview, 7/8/09).

I would say that I could not read without a dictionary. It's the easiest way to help me understand what I read. I also use Google when I can't find words in the dictionary (Lamia, post-reading interview, 7/10/09).

This text is full of unknown words. I need to spend a lot of time looking them up in the dictionary. Let me start with the word "deprivation" (Mishary, think-aloud 2, 7/13/09).

Even though I kind of knew that the context could help, I preferred to use a dictionary because it's faster. Also, I was not sure if my guesses were correct (Raghad, post-reading interview, 7/15/09).

As for the use of this strategy among the proficient readers, they tried to avoid consulting the dictionary first because it was time-consuming and interfered with continuity in reading.

Instead, they made use of context clues provided. However, they occasionally looked up unknown words in the dictionary to verify whether their guessing was accurate in order to attain a thorough comprehension of the text. They commented,

I usually start with context clues because they help me read faster and easier without stopping to look up every new word in a dictionary. I use a dictionary only if it is impossible to guess from the context. Unfortunately, I sometimes cannot find certain words in a dictionary, so in this case, I go ahead and consult Wikipedia where I find almost anything in greater detail (Nouf, post-reading interview, 6/29/09).

I've seen the word "tough" before, and I think I know the meaning. Anyway, let me look it up in googletranslate.com (an online dictionary) just to make sure (Fai, think-aloud 1, 7/1/09).

I am searching for the meanings of "jittery", "vicious", and "perk up" from the dictionary because this paragraph does not give me much context to guess their meanings (Talal, think-aloud 1, 7/3/09).

I didn't know the meaning of the verb "perish". So, I typed in the word in Google because I was reading this text for class assignment and accuracy is a top priority (Alanood, self-report, 7/13/09).

As revealed above, the most frequently used reference materials were paper/online dictionaries, search engines, Google and Wikipedia. As for the types of dictionary, both groups of students reported using English-Arabic dictionaries most frequently as they provide translation equivalents that alleviate the complexity of words during the reading process.

4.5.11 Going Back and Forth in Text:

Although this strategy was not very frequently observed compared to other support reading strategies, the students from both groups used it when they were confused about different ideas presented in the text and their relationships. It was found that the varying results of using this strategy were dependent upon the students' English reading proficiency which fostered their ability to reason during the tasks. The following quotes illustrate how the proficient readers successfully implemented this strategy:

I'm trying to justify why we should get enough sleep. The first and the last paragraphs explain this. The first one is about the effects of chronic sleep loss but the last one talks about what people who don't get enough sleep tend to do. I think I need to reread these two paragraphs to find the answer (Nouf, think-aloud 1, 6/29/09).

When reading long texts, I usually try to see how different paragraphs are related to each other. A paragraph might be followed by another paragraph containing supporting details, examples, or causes (Fai, post-reading interview, 7/1/09).

I read the first sentence in the first paragraph, and it says that the Khmer Rouge regime took power on 17 April 1975 and was overthrown on 7 January 1979. Then, I

found this sentence in the third paragraph: In 2001 the Cambodian National Assembly passed a law to create a court to try serious crimes committed during the Khmer Rouge regime 1975-1979. I was wondering if the author is talking about the same group of people or government, so I went back to the first paragraph to find out whether the same years were mentioned before I could move on to the next paragraph (Alanood, self-report, 7/13/09).

In contrast to this group, the less proficient readers were not only overwhelmed by the length of online text but also unable to provide answers to comprehension questions or reading tasks which required the ability to figure out the relationships among ideas presented in the text.

Inevitably, according to their incomplete comprehension, they tended to rely primarily on their own assumption which lacks supporting evidence from the specific text they read. This point is demonstrated as follows:

The whole section talks about the importance of deep sleep and REM sleep. I don't know which stage is more important, though. I cannot find the right sentence that answers the question. But I guess it should be REM sleep, the last stage (Lamia, think-aloud 2, 7/10/09).

Oftentimes, I find it hard to fully understand the text in English, particularly when it is long. I have to go back and forth but I still cannot find the right answer. Also, some paragraphs do not seem to make sense to me. There are so many ideas and it's full of confusing words (Raghad, post-reading interview, 7/15/09).

Generally, it was indicated above that the skilled readers could manage to employ this strategy impressively while the less skilled readers attempted but often failed to do so. Inevitably, to accomplish reading tasks, the latter group tended to rely primarily on their own assumption which lacks supporting evidence from the specific text they read owing to their incomplete comprehension of the text.

4.5.12 Translating from English into Arabic:

Translation was the only strategy, among the 39 items on the OSORS, which the less proficient students reported using more frequently than the proficient students. Moreover, during the think-aloud sessions and independent reading tasks, this strategy was more frequently observed among the former group than the latter group. The

participants in the less proficient group relied on spontaneous translation when they did not understand an English academic text.

They reasoned that thinking about the content in their native language allowed them to better understand the information than when they did not do so.

Reading and thinking in English only confused me sometimes. So, I usually depend on translation strategy because the text makes more sense (Lulua, post-reading interview, 7/8/09).

When I know the meaning of “jittery” in Arabic, I kind of know what the sentence is all about. However, some sentences are too difficult to understand, so in this case I need to translate the whole sentences into Arabic. Otherwise, I will have no idea what they are talking about (Lamia, post-reading interview, 7/10/09).

Actually, I tried not to translate from English into Arabic because I know it just takes a lot of time. Anyway, when reading the text, I understood it much better when I did translate (Mishary, post-interview, 7/13/09).

I translated English sentences into Arabic when I read both for class assignments and for pleasure. This text will become too hard for me to understand if I do not translate it (Raghad, self-report, 7/22/09).

While the less proficient readers used this strategy very often as indicated above, the proficient readers normally tried to avoid translating into Arabic, unless the text was too confusing or full of unknown words. According to these students, translating the text into Arabic was deemed time-consuming and unnecessary. Nevertheless, sometimes they used this strategy when working on class assignments or other tasks which require translation. The students pointed out,

It is a good idea to translate sentences into Arabic. But for me, it wastes a lot of time when I already understand what it says in English. However, I choose to translate only when sentences are full of words I have never heard before (Nouf, post-reading interview, 6/29/09).

It [the sentence] is complicated because of the fact that sentence structures of English are very different from those of Arabic. To fully understand this sentence, for example, I am now translating what “chronic sleep loss” is. In Arabic, we use a noun followed by adjectives (Fai, think-aloud 1, 7/1/09).

In fact, I usually don't translate what I read in English into Arabic because, for me, translating into Arabic is very hard and complicated. Most of the time, I automatically understand what it is said in English without translating. If I do need to translate, I will certainly get stuck with all my word problems in both English and Arabic (Talal, self-report, 7/3/09).

Even though I consult English-Arabic dictionaries from time to time, I find translating the whole sentences into Arabic unnecessary. Why do I have to translate when I know what it says in English? (Alanood, post-reading interview, 7/6/09)

Generally, although both groups used bilingual dictionaries to deal with word difficulty encountered during reading online as discussed earlier, the strategy of translating the entire sentences or sections in English into Arabic was clearly less frequently reported and observed to be used by the proficient readers who possessed a good understanding of the English language.

4.5.13 Summary of the Differences between Proficient and Less Proficient Students:

Table 4.14: Summary of the Differences between Proficient and Less Proficient Students

No	Strategy	Proficient Reader Group		Less Proficient Reader Group	
		OSORS	Think-Aloud and Self-Reports	OSORS	Think-Aloud and Self-Reports
10.	Noting length and organization	3.59	Reviewed the text first to make a well-informed decision as to the approach to reading it	2.98	Easily demotivated by a lengthy text, regardless of text difficulty level
14.	Deciding what to read closely and what to ignore	3.24	Made decisions based on the importance of each part or section in the text	2.79	Skipped certain parts when unaware of the gist mainly due to their vocabulary difficulty
17.	Clicking on links to other sites	3.04	Predicted and evaluated the content on the new site according to the reading goal	2.67	Clicked on links to learn more about technical terms or unknown words
16.	Paying closer attention to reading	3.32	Used when they encountered difficult or complex sections within the text they read	2.72	Decided to either concentrate special attention to the whole text or ignore several sections

31.	Guessing meaning of unknown word	3.57	Used different types of context clues together with their practical knowledge of grammatical structures	2.70	Usually depended on outside sources of information (e.g., a dictionary)
33.	Skipping difficult words or sections	3.16	Evaluated whether to try harder or ignore them when they gained a global comprehension	3.09	Skipped words or sections when they lacked motivation to continue reading or consulting the dictionary
15.	Using reference materials	3.56	Looked up unknown words in the dictionary at times to verify whether their guessing was accurate	3.26	Failing to guess meanings from context, they consulted outside materials to remediate comprehension problems
25.	Going back and forth in text	3.04	Succeeded in figuring out the relationships among ideas presented in the text	2.60	Overwhelmed by the length of text and unable to provide accurate answers to comprehension questions
37.	Translating from English into Arabic	2.90	Avoided translating into Arabic, unless the text was too confusing or full of unknown words	3.14	Often relied on translation to better understand the information in English

Verification of the Study Hypothesis (3): It was revealed that all students in the less proficient group struggled with overwhelming vocabulary leading to inaccurate understandings of the online academic texts. Also, compared with the proficient group, they had more difficulty regarding grammatical structures, text length and organization, and text evaluation, so the proficient readers' and the less proficient readers' methods of employing strategies differed from each other in terms of both frequency and quality of use.

This **confirms** the third hypothesis that, there are many differences and similarities between proficient and less proficient readers.

4.6 Research Hypothesis 4: The students face many difficulties when they read academic texts online:

The fourth research hypothesis explored different types of difficulties that were both reported and encountered by the participants in this study. Similar to the previous research questions, the data gathered to address this question came from multiple sources. First, based on the OSORS, I examined the students' responses to the open-ended question as to what they perceived as their reading difficulties when reading online for academic purposes. Other sources of data include: (1) pre- and post-reading interviews; (2) observations through think-aloud sessions; and (3) self-reports of online reading strategies.

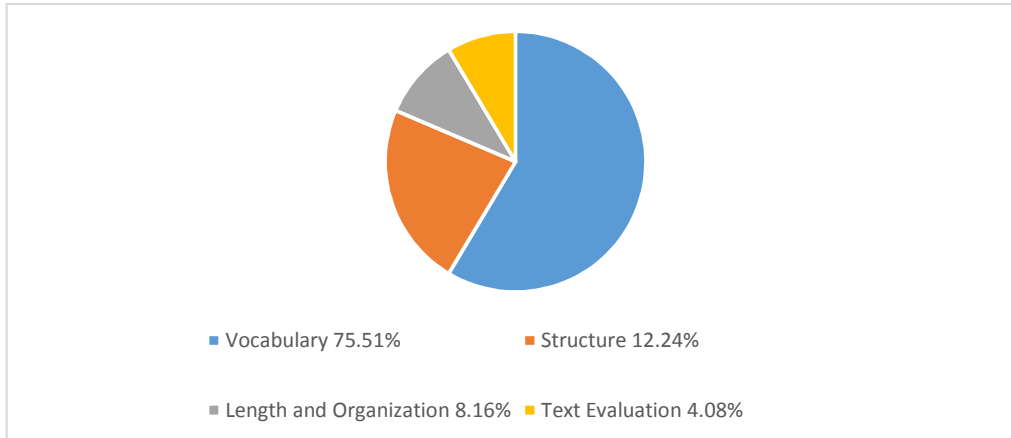
To examine the students' difficulties reported and encountered during online reading for academic purposes, I first calculated the percentage of their responses to the OSORS and investigated whether the reported data from both groups were found to be different from each other. In a later part, I discussed each of the types of difficulty separately by means of their responses to the OSORS' open-ended question in conjunction with the other qualitative data from the students' actual reading tasks.

A total of 98 students who completed the OSORS provided responses to the open-ended question. Because they did not write down their responses to this question, eight students in the proficient group and five students in the less proficient group were excluded from the data analysis. Therefore, the data were included for 60 and 38 students in the proficient group and less proficient group, respectively. The respondents in both groups were diverse in terms of age, majors, and English proficiency. For the purpose of this research, students with grades of A, B+, and B were categorized as proficient readers whereas those with grades of C+, C, D+, and D belonged to the less proficient reader group.

The following section reports different types of online reading difficulties that were reported by the OSORS respondents. As shown in each figure, the reported areas of difficulty could be separated into these emerging themes: (1) vocabulary difficulties; (2) grammatical structure difficulties; (3) difficulties regarding the length and

organization of the text; and (4) difficulties regarding the text evaluation. Figure 4.1 below displays the percentage in each of the four areas of difficulty reported on the OSORS by all respondents in the study.

Figure 4.1: Types of Difficulties Reported by All Students (N = 98)



Indicated in Figure 4.1, the most frequently reported area of online reading difficulty is vocabulary difficulties (75.51%). A total of 74 students regarded their limited vocabulary knowledge as the major problem for reading online for academic purposes. Evidently, this specific type of difficulty was much more frequently reported than the other areas. Altogether, twelve students considered grammatical structures their main obstacle to reading comprehension (12.24%). In addition to these two areas, difficulties related to the length and organization of the text and those related to the text evaluation were also reported by eight (8.16%) and four (4.08%) students, respectively.

Figure 4.1 above demonstrates the data from all students who responded to the OSORS' open-ended question (N = 98). To gain further insights into similarities and differences in relation to the reading difficulties reported by the two groups of students, Figure 4.2 and 4.3 below begin to look specifically at the percentage in the reported areas of online reading difficulties among the proficient students and less proficient students, respectively. As stated earlier, due to some missing data, the analyzed data for this research question were collected from 60 students in the former group and 38 students in the latter group.

Figure 4.2: Types of Difficulties Reported by the Proficient Students (N = 60)

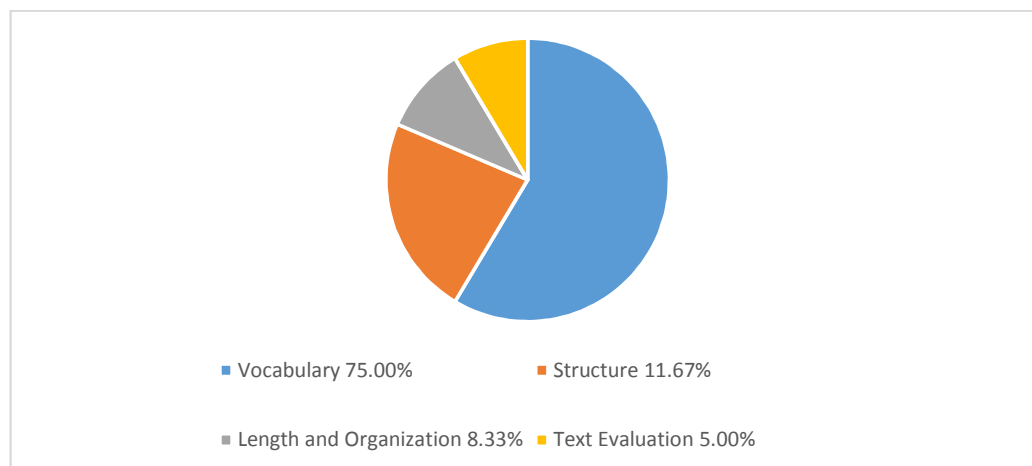
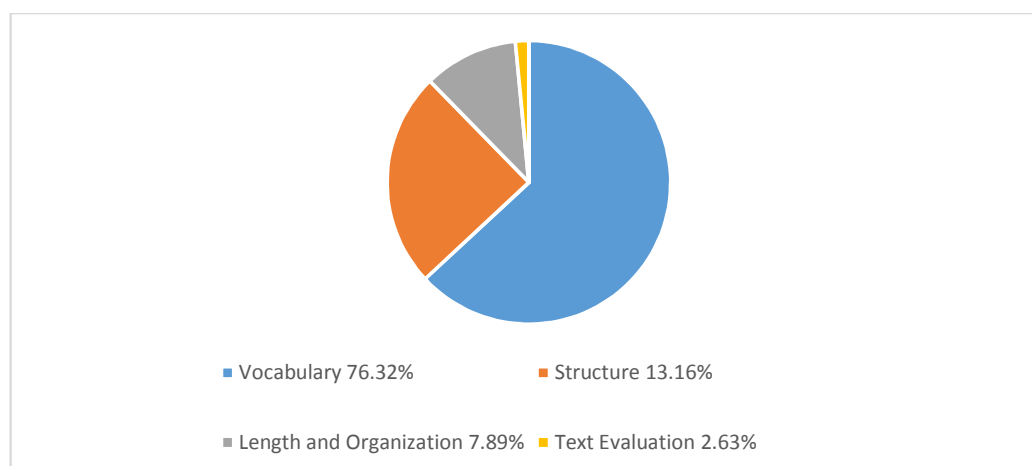


Figure 4.3: Types of Difficulties Reported by the Less Proficient Students (N = 38)

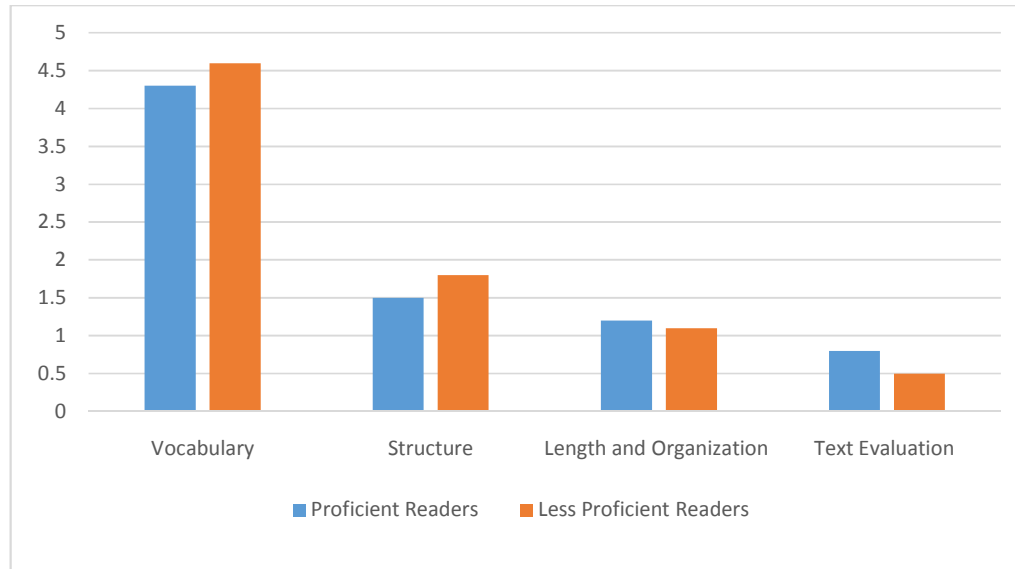


Taking into account the data revealed in Figure 4.2 and 4.3 above, it was found that both groups' reported reading difficulties were relatively similar to each other. First of all, the majority of students – 45 (75%) proficient students and 29 (76.32%) less proficient students – had difficulty with vocabulary when they academically read online in English. Within each group, grammatical structure difficulties were also reported by seven (11.67%) proficient students and five (13.16%) less proficient students as a major hindrance to reading comprehension. Among the rest of the students in each group, five (8.33%) proficient students and three (7.89%) less proficient students reported struggling with the length and organization of the text.

Also, three (5%) students in the former group and one (2.63%) student in the latter group viewed text evaluation as their difficulty during online reading.

In order to provide a clearer picture of the students' perceived online reading difficulties, the percentages in each of the four areas reported on the OSORS by proficient and less proficient students were summarized in Figure 4.4 below.

Figure 4.4: Differences in Reported Reading Difficulties between Both Groups of Students



According to the graph above, the perceived types of difficulty among both proficient and less proficient students in this study were ranked in the same order (i.e., vocabulary difficulties, grammatical structure difficulties, difficulties regarding the length and organization of the text, and difficulties regarding the text evaluation). Additionally, the values of percentages as indicated in Figure 4.4 were strikingly similar. In other words, the proficient and less proficient students in this study encountered these areas of difficulty to a very similar extent when they read online in English for academic purposes.

The following section discusses in greater detail each type of reading difficulty that the students in both groups reported on the OSORS and encountered during the think-aloud sessions and the independent reading tasks.

4.6.1 Vocabulary Difficulties: Based on the data from the students in both groups, the percentages of each vocabulary difficulty aspect among proficient readers were higher than those among less proficient readers.

Following is how the students in each group expressed their concern about each aspect of vocabulary difficulty during online reading for academic purposes. Translation appears to be important for thorough comprehension of the online text as the proficient students pointed out as follows:

“I encounter so many difficult words in English. Even though I use dictionaries, I sometimes don’t understand the whole sentences in Arabic”.

I don’t feel like reading when I can’t translate what I read into Arabic”.

I like to translate as it helps me better understand what I read. For global comprehension, I can simply grasp main ideas of the text. But to gain a full understanding, it takes me a lot of time to look up unknown words in the dictionary before I know what they mean in Arabic”.

Sometimes, I still can’t interpret difficult sentences in the text even when I try to translate them into Arabic. Also, when I read the text on my own and have trouble understanding it, I can’t ask for help from other people”.

As indicated above, the skilled readers translated not only words but also sentences they found difficult. Also, they tended to lose motivation to read when they failed to make sense of the text. Likewise, the less skilled readers articulated how their narrow repertoire of vocabulary hindered their understanding of the text, even though they attempted to translate words into their native language. They asserted,

I find most vocabulary used in the text difficult, which sometimes makes my translation of the text not very accurate”.

I can’t make sense of difficult vocabulary. Also, when the text is too challenging, I am unable to translate not only the unknown words but also the context surrounding the words into Arabic”.

The biggest problem I face when reading online academically is vocabulary. I just feel lazy every time I have to look up unknown words in the dictionary for the meanings in Arabic”.

“I translated English sentences into Arabic when I read both for class assignments and for pleasure. This text will become too hard for me to understand if I do not translate it”.

5.6.3 Understanding Technical Terms and Academic Vocabulary: When reading online, students are exposed to a wide variety of texts written for different disciplines such as science, business, psychology, and education. Inevitably, they are also confronted with a large number of technical terms or specialized vocabulary. With specific definitions within the field, these terms do not necessarily mean the same as their meaning in common use. For EFL students, understanding technical terms used across a range of content areas presents a challenge. According to the informants in this study, technical terms and academic vocabulary which are commonly used in the text hindered their comprehension at times. In contrast, a good understanding of the terms and essential academic vocabulary not only facilitated reading comprehension but also made their reading experience pleasant. Here are some excerpts from the proficient reader group:

“I have trouble understanding difficult vocabulary, especially technical terms. It seems to me that I can’t make use of the surrounding words to determine the “meaning of those terms. So, not understanding them, I find reading the text difficult”.

“I usually get stuck on certain parts of the text I read because of the technical terms used. I don’t know how to understand the text without knowing what the terms mean first”.

“An academic text usually contains a lot of technical terms specific to each discipline. Sometimes, I don’t understand what they mean. Even when I try to consult a dictionary, the meaning I get may not be very accurate. I then have to learn more about these so I can understand the text more fully”.

Similar to the first group, the less skilled readers added,

“I experience great difficulty reading academic texts full of technical terms. Also, general academic vocabulary seems too complicated for me to understand. Such use of words usually prevents me from making sense of the text”.

“The text often becomes difficult to read when too many technical terms are used. Oftentimes, the author does not provide adequate explanations of the terms in order to facilitate readers who may not be familiar with the concepts presented”.

“The language used in academic texts is typically difficult to understand because of technical terms and sophisticated vocabulary. Anyway, one of the important advantages of the Internet is that it gives you everything you need ranging from the meaning of unknown words to the detailed clarification of the complicated concepts”.

4.6.4 Understanding English Idioms and Slang: One of the problems for learning English in Arab Countries is that most Arabs EFL learners are provided with limited exposure to the use of English language outside of the classroom.

Moreover, they do not have enough opportunities to practice the target language with native speakers of English. While teachers concentrate primarily on formal English for academic purposes, the actual use of English in online texts often includes colloquial expressions such as idioms and slang. Only known through their common uses, idioms or phrases whose meanings differ from what they say are difficult for those who are not highly competent in English to understand or use properly. According to the informants in this study, colloquial expressions become a big barrier to them trying to read English texts. Some proficient readers claimed,

“Idioms and slang are one of the biggest obstacles when I read in English. I need to learn idioms separately because certain words together can have different meanings”.

“I know very little about English idioms and slang because I don’t use English very much. Anyway, it is good to know them as well as the culture those idioms come from”.

“I think understanding English idioms is pretty difficult. I usually know every word in each idiom, but it doesn’t make sense to me when they are used together as an idiom. So, reading an English text with unfamiliar idioms is absolutely a challenge”.

As pointed out, the students in the proficient reader group believed that knowing individual words used in English idioms and slang do not guarantee accurate meanings of these expressions. Below are some excerpts from the less proficient reader group in this study:

English words are hard enough for me to understand. When idioms and slang are used in the text, I need to put much more effort to look them up in a dictionary and then continue reading the text”.

Unfortunately, I didn’t have many opportunities to communicate with native speakers very often. Chances are I lack knowledge of colloquial language. Sometimes, I face such language when I read online news and articles, which makes the text more difficult to understand”.

4.6.5 Understanding Incorrect Use of English Words Regularly, academic writing requires meticulous proofreading. Readers do not often find incorrect use of words in offline academic texts. However, with an increasingly large amount of information on the Internet, online readers are far more likely to locate misuses of words or phrases, which occasionally short-circuit comprehension. With the introduction of computers and small electronic devices such as cell phones which enhance a wide range of convenient communication channels, many people stray from the proper use of the words, spelling and punctuation. Both groups of students in this study pointed out how the quality of online texts varies according to the use of language and how they regarded this aspect as one of their online reading difficulties. The first group pointed out,

At times when I read online in English, it seems to me that the author makes up his or her own words. I guess they are not correct or maybe the words mean something else that I will never know. This makes reading online become difficult”.

I sometimes find mistakes in the online text in terms of the spelling. I believe this type of mistake not only makes the text more difficult to approach but also loses reader’s attention”.

I usually get frustrated when I find spelling errors. These errors not only included misspelled words, but also inconsistent use of the British and American writing

systems. The author should have made a better job of proofreading the text before making it available online”.

Like the first group, the less skilled readers articulated,

When I read articles online, I often find certain misspelled words or incorrect use of punctuation. Even though I can try to make sense of what they intentionally mean, it’s just irritating”.

Some online texts contain misspelled words which I really dislike. Sometimes, I don’t know that they are wrong and try to memorize the words. That’s too bad”.

4.6.6 Grammatical Structure Difficulties: Some writers of academic texts tend to use long and complicated sentences which potentially interfere with reader’s comprehension of the text. Readers may get lost in the complexity of the sentence and fail to grasp the information the sentence conveys.

According to the informants in this study, grammatical structures become one of the most serious problems in English online reading for academic purposes, below is a list of excerpts from both groups of students in this study:

“I find sentence structures in most academic texts complicated. Undoubtedly, this makes me read the text very slowly”.

“My reading difficulty results from English complex sentences written in an academic style”.

“I need to read aloud the sentence: “People who have chronic sleep loss are also at a higher risk of being obese, having heart disease, diabetes and kids with ADHD often have sleep disorders.” It is complicated because of the fact that sentence structures of English are very different from those of Arabic. To fully understand this sentence, for example, I am now translating what “chronic sleep loss” is. In Arabic, we use a noun followed by adjectives”.

“This sentence is a bit complicated. [She read out loud, „Today, researchers wonder if it may be the brain’s way of processing random fragments of information received during the day”.] Reading aloud helped me not only to better focus my attention on the text but also to separate this long sentence into clauses which are easier to understand”.

I think sometimes it's hard to find the main idea or the purpose of the text. Because of very long and complicated sentences, many ideas the author conveys are usually presented in an academic text”.

I don't enjoy studying grammar, so I usually have a hard time understanding English complex sentences found in most academic texts”.

At times, even when I know most vocabulary words used in each sentence, I still can't make sense of the whole text because of the complexity of the sentence structures”.

As shown above, the students from both groups commented that it directly affected both their reading speed and their ability to identify the main purpose and ideas expressed in the text. Moreover, despite an understanding of most words in the text, at least one student in the less proficient group failed to fully comprehend the text because of long and complex sentences. They reported,

“I have a difficult time translating certain complex sentence structures in English used in academic texts. They are too long and full of modifiers. It is very time-consuming”.

“Translation usually takes a lot of time, especially when the sentences are full of complex sentences”.

Further, a small group of students perceived that this type of text was misleading as some EFL learners. Two of the students indicated,

“I think some websites contain not only complex sentences which are difficult to analyze but also ungrammatical sentences which make EFL readers memorize these incorrect rules unknowingly”.

“Some English sentences I found seem ungrammatical. I think we, as EFL readers, need to be very careful and skeptical when we read them”.

The students in both groups considered grammatical structures one of the most serious problems in English online reading for academic purposes.

4.6.7 Difficulties Regarding the Length and Organization of the Text:Text length and organization potentially affects students' motivation to read and thereby their reading comprehension of the text. With regard to the length of the text, a large

number of students generated an intuitive belief that the longer a text, the more difficult it will become.

According to the informants in this study, text length and organization became another aspect of online reading difficulty that the students in both groups experienced when reading academic texts. First of all, the proficient students stressed,

Whenever I face a long academic passage, I just don't feel like reading it. Perhaps the vocabulary or sentence structures themselves may not be too challenging to understand".

I usually have a hard time forcing myself to read a text with serious content. In my opinion, it lacks attractiveness that invites eagerness and willingness to read".

Like a normal reader, I prefer to read a short passage to a long one. I think academic long texts require a lot of time and effort to concentrate. Even though just because it is long doesn't mean that it's harder to understand in terms of vocabulary or ideas presented, I still feel bored when reading it. Text organization plays a crucial role as well. If the text is well organized with ideas clearly presented in each paragraph or section, I can simply learn to ignore some detailed information and increase my reading speed. However, many online academic texts I've found are usually filled with complicated ideas and way too tedious".

As reported above, the students in the proficient group mentioned their decreased motivation to read when faced with lengthy academic texts. Moreover, how texts are organized was also influential, particularly when a number of complex ideas were presented in the text. The perspectives of the less skilled readers below echoed those of the skilled readers who viewed text length and organization as one of their greatest concern when reading academically online.

Some texts are too lengthy, which makes me feel too lazy to read. Knowing it takes a lot of time, I tend to skip the text as much as I can".

Academic texts tend to be longer than ordinary texts I normally read for pleasure. To be honest, these texts really decrease my motivation to read, even though I am not sure how easy it could be".

Due to the daunting length and organization of the text they found problematic, the students in both groups articulated their lessened willingness to attempt to read in the

target language. Most students in both groups decided to read the comprehension questions first so they could later focus on the text much more precisely. Also, when reading a lengthy text, the use of this strategy led them to be aware of what to read closely and what to ignore.

In addition, trying to come up with answers to the comprehension questions, some students demonstrated their competent computer skills by opening a search window (Ctrl + F) to figure out where exactly the unknown words were in a long text, for instance. This shortcut was very useful for the students as they were able to shorten the time necessary for locating specific information in academic texts.

4.6.8 Difficulties Regarding the Text Evaluation: Students gain more and more information from the Internet so, they need to possess the essential skills of evaluating Internet resources. During online reading comprehension, different stages of critical evaluation of information take place as readers evaluate (1) the comprehension questions to explore which specific information they need to focus on; (2) the search engine results to determine which will provide further information they need; and (3) the reliability of information in the text. Nevertheless, the form of evaluation that will be examined in this section is the critical evaluation of how reliable online information might be in the text.

Among all students in this study, some explicitly stated that they had difficulty with the text evaluation. While some pointed out the prevalence of online information and how it should be critically evaluated, others empirically demonstrated how they evaluated the text they were reading in the think-aloud session or the independent reading task. Following is a list of excerpts from the proficient reader group:

A great deal of information on the Internet varies in terms of credibility. At times, they do not contain references, which takes readers a lot of time to distinguish fact and opinion in online texts”.

The information presented should be trustworthy because the article contains reliable research references. Also, I believe that the selected website itself ([http://discover magazine.com](http://discovermagazine.com)) is well respected in the field”.

This entire section provides readers with facts only. I can conclude that each sleep stage is important for overall quality sleep. Anyway, I can see that the author doesn't judge which stage is the most important".

A few students from the less skilled readers added,

There are a whole lot of websites out there which discuss the same subject but provide different perspectives. This always confuses me as I am not so sure which one to trust".

I believe this article is trustworthy. There are a lot of ideas presented in this article, and they all sound credible based on the information the writer gave. Actually, I think anything you can call an article is entirely credible".

While most of the less proficient group attempted to critically evaluate information of the online texts, at least one of them (Raghad) should be cautiously investigated, the fact that she developed a misconception that all articles are trustworthy unavoidably prevented her from becoming an efficient critical reader, particularly in the online reading context where critical reading skills are of vital importance.

4.6.2 Verification of the Study Hypothesis (4): It was revealed that, there are reading difficulties faced the students in the proficient and less proficient groups when they read online texts. The reported areas of difficulty could be separated into the following themes: (1) vocabulary difficulties; (2) grammatical structure difficulties; (3) difficulties regarding the length and organization of the text; and (4) difficulties regarding the text evaluation.

This **confirms** the fourth hypothesis that, the students face many difficulties when they read academic texts online.

4.7 Summary:

This chapter analysis the data, present the results, interpretation and discussion.

The first hypothesis in this study aimed to prove that, the students use reading strategies when reading English text online. Due to the outcome of the results this hypothesis is fulfilled.

The second hypothesis in this study aimed to ensure that students in different proficiency level use several reading strategies in actual reading tasks. Regarding the above mentioned analysis, the hypothesis is fulfilled.

The third hypothesis in this study aimed to find the differences and similarities between proficient and less proficient readers. According to the study results, this is fulfilled.

The fourth hypothesis aimed to reveal the difficulties that face the students when they read academic texts online, the analysis reported many difficulties faced the students when reading online texts. Per this the hypothesis is fulfilled.

Chapter Five
Main Findings,
Conclusions, Reconditions
and Suggestions for
Further Studies

5.0: Introduction:

The results of the current study continue to add to our understanding of what and how strategies that are used by second language readers within the online reading context. As stated earlier, the purposes of this study were to examine what online reading strategies the surveyed students reported using for academic purposes and also the selected students used them in actual reading tasks, whether there were similarities and differences between the actual use of strategies among proficient and less proficient readers. In addition to what types of difficulties they reported and encountered when reading academic texts online. The data were derived from multiple sources, namely the OSORS, English reading proficiency test scores, background information questionnaires, pre- and post-reading interviews, observations through think-aloud sessions, and self-reports of online reading strategies.

In order to investigate the use of online reading strategies among Arabs EFL university students in a wide range of dimensions, the present study attempts to address four research hypotheses which are reiterated below for convenience.

1. The students use reading strategies when reading English text online.
2. Students use several reading strategies in actual reading tasks.
3. There are many differences and similarities between proficient and less proficient readers.
4. The students face many difficulties when they read academic texts online.

5.1 Main Findings:

1. Most of the students need to orchestrate strategy use to cope with different reading demands, particularly the struggling ones, relied on a fixed set of reading strategies they had been accustomed to regardless of text difficulty level.
2. The students, regardless of their language proficiency, used their schema or background knowledge frequently when reading online.

3. Students' vocabulary knowledge relates strongly to their reading comprehension and academic success. Due to the number and complexity of the English words students were confronted with, the skilled and less skilled readers in this study regarded vocabulary as their greatest concern when they read in English on the Internet.
4. Large number of students articulated their concerns regarding this specific type of vocabulary that they often encountered in the course of reading online texts in a wide range of disciplines, students regarded English idioms and slang as another big hurdle to fully understand English texts.
5. In addition to offline reading strategies that students could also employ while reading online, they could be equipped with critical evaluation skills in relation to the information that appears online.
6. This study indicated that the OSORS was created as a useful and convenient tool for providing valuable information about the students' online reading strategies, this type of information assists students in raising their awareness of reading strategies, enhancing their understanding of the reading process and increasing confidence in their own reading ability.

5.2 Conclusion:

The Internet becomes an increasingly important dimension for all readers, redefining what it means to be literate in the online world. The nature of online reading comprehension has therefore become a significant area of research. Through empirical evidence, this study enriches our understanding of what additional skills and strategies are required as Internet readers in the Arabic EFL context constructed meaning from their reading experiences in ways that differ from how reading takes place within the offline reading environment.

In addition to conventional strategies that prove helpful for readers, some strategies specific to online academic reading include using online reference materials (e.g., dictionaries), clicking on hyperlinks to other sites, seeking online materials in the native language, resolving conflicting information using online resources, and

evaluating online information. Occasionally, they articulated their concerns with several difficulties regarding online texts (e.g., grammar, spelling, and punctuation errors and incorrect use of English words).

5.2 Recommendations:

Based on the finding of the study, the researcher recommends the following:

1. Teachers need to incorporate strategy awareness training before engaging students in online reading tasks, they should also introduce a few strategies at time and extensively model strategies to explain and discuss with students the value of strategies. Also they should provide feedback and discussion with students as they attempt strategies in attempt to help students maintain a high level of motivation.
2. Teachers should pay special attention to selecting texts that address students' interests and their English proficiency, they should gradually proceed from easy texts to more challenging ones whose topics are of interests to students, and incorporate a student-centered approach and collaborative learning approach into instruction. In the same way, teachers should begin with some reading strategies that are easy for students to implement in order to inspire their confidence and build a greater sense of achievement.
3. Teachers can model and teach to students so as to help them figure out the meaning of unknown words on their own, they should provide an effective word-learning strategies such as: the efficient use of the dictionary, the use of word parts (prefixes, suffixes, and roots) to unlock a word's meaning and the use of context clues.
4. Teachers should introduce their students to a list of helpful online resources in order to deal with vocabulary difficulty because technical terms have one or more specific meanings that are not necessarily the same as those in common use. Also they should encourage students to pay attention to full-sentence examples showing how idioms are really used so that they not only understand these expressions but also use them with confidence.

5. Teachers should help students to develop strategies for critically evaluating information they encounter on the Internet. During a class session, teachers can have students work individually or in groups to discuss some possible ways in which they evaluate websites they find on the Internet and report to the whole group. Teachers then explain why students need these skills for online reading.
6. Teachers can benefit from OSORS information as they help their students to become more highly responsive and thoughtful readers.

5.4 Suggestions for Future Research:

The findings obtained from this study could be used as a guideline for teachers to figure out what effective strategies are and how they can teach students a repertoire of reading strategies that would facilitate students' adjustment to the different types of texts they are reading online. Following are recommendations for further investigation into the use of online reading strategies in the EFL context:

1. Researchers might seek to examine whether there are any similarities and differences between the participants' use of strategies in the online and offline reading environments, it would be interesting to explore the manner in which readers use strategies when they read for different purposes such as academic and non-academic purposes.
2. The study demonstrated what strategies students used and what types of difficulty they encountered when reading online in English, further studies in this area may begin to explore whether there is also a relationship between L1 and L2 in online reading performance such as reading online texts in English and in Arabic.
3. As described earlier, all think-aloud sessions in this study were conducted in Arabic. Because participants in several research studies have been allowed to report in either L1 or L2 that they feel more comfortable with, further studies might look into this aspect more carefully.

Empirical data may yield valuable insights into how each language used during the think-aloud protocol impacts on the EFL learners' choices and frequency of strategies,

particularly the translation strategy which was claimed to be largely influenced by the use of L1 in the study.

4. Even though the data obtained in the study revealed that observed and self-reported reading strategies generally tended to match, there might be some legitimate concerns about the extent to which the survey items on the OSORS influenced the selection and frequency of strategy use among learners during both think-aloud sessions and independent reading. By reversing the order of research instruments, future research could verify whether the use of strategy varies according to the preceding instrument.

5. The current study aimed to explore what similarities and differences existed between the use of strategies among proficient and less proficient readers. Even though reading proficiency level is a major factor affecting strategy use, other equally important variables such as motivation, gender, years of study, academic majors should also be taken into account. Further research might discover whether and to what extent these other variables play a role in students' use of strategies in the online reading environment.

6. Based on the findings of this study, how the students from the proficient reader group and those from the less proficient group employed reading strategies were different from each other in terms of both frequency and quality of use. In further studies, the importance of strategies for other language skills (i.e., listening, speaking, and writing) should be scrutinized in order to confirm that this type of strategy is essential to these skills as it is to reading comprehension.

5.5 Summary about the Chapter:

This study investigated EFL Students Perception of Self- Reading Efficacy through Online Strategies. Several instruments and approaches are used to collect data: 1) the Online Survey of Reading Strategies (OSORS), 2)TOEFL reading proficiency test scores, 3)Internet use questionnaire, 4) pre- and post-reading interviews, 5)observations through think-aloud sessions, and 6)self-report of online reading strategies. This chapter concludes the study and it contains the findings of the research, recommendations and suggestions of potential areas for further study.

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Appendix

Appendix (1)
Reading Course Syllabus
University of Hail- Preparatory Year- Second Semester (2019)
Reading for Information

Course Description: Study and practice of reading skills used in reading informative texts, outlining and summarizing, giving opinions about the texts through oral discussion or writing.

Course Objectives: To practice various reading skills helpful to understand informative writing.

Topics to be covered:

- Predicting what the text to be read is about.
- Identifying text organization.
- Skimming and reading for main ideas.
- Dealing with new words.
- Recognizing references.
- Drawing inferences.
- Finding specific information.
- Recognizing relationships between ideas.
- Outlining and writing a summary from the outline.
- Giving opinions about the subjects discussed in the text.

Teaching-Learning Methods:

1. Classroom teaching.
2. Classroom practice.
3. Self-study

Teaching Aids:

Self-study materials in the Resource Center Room, Liberal Arts- Building (E) Room (103), Female Campus.

1. Reading materials prepared by the instructors (in folders).
2. Commercial reading exercises intended to help English as a second language learners develop reading skills.
3. Newspapers and magazines.
4. Commercial texts.

Evaluation:

Midterm Exam	50 points
Final Exam	90 points
Classwork	60 points

Total 200 points

Grading Criteria:

A = 170 and over

B+ = 160-169.99

B = 150-159.99

C+ = 140-149.99

C = 120-139.99

D+ = 110-119.99

D = 100-109.99

F = 99 or below

Details of the Exams:

Types	Question Types	Points
Midterm	1 seen passage <ul style="list-style-type: none"> • Multiple choice questions (2 points each) • Open-ended questions (with an outline/ a summary) • 	(25)
	1 unseen passage <ul style="list-style-type: none"> • Multiple choice questions (2 points each) • Open-ended questions (with an outline/ a summary) 	(25)
Final	2 unseen passages: <ul style="list-style-type: none"> • Multiple choice questions (2 points each) / 10 points/ 1 passage. • Open-ended questions (with an outline/ a summary) / 15 points/ 1 passage. 	(50)
	Outside Reading: <ul style="list-style-type: none"> • Multiple choice questions (1 point each). • Open-ended questions (an outline/ a summary may be included). 	(40)

Required text:

Rajatanun, P. (2009). Reading for Information. Bangkok: Thammasat University Press.

Outside Reading: O’Connell, D. (2006). Strong Force: the Story of Physicist Shirley Ann Jackson. Washington D.C.: Joseph Henry Press.

NOTE: Students are allowed to bring the outside reading text into the exam room but are not permitted to bring dictionaries and have any kind of notes attached to the outside reading text.

Appendix (2)

Online Survey of Reading Strategies

The purpose of this survey is to collect information about the various strategies you use when you read online in ENGLISH for academic purposes. The entire survey will take you approximately 15 minutes. Your response will be confidential and anonymous. Only the researcher of this study will have access to it.

1. Gender Male Female
2. Age _____
3. School _____ Major _____
4. Years of English learning _____

5. Why are you learning English? (Check all that apply)

- I need to use English in my work I am interested in learning languages.
- English will help me earn a higher salary I am taking English to pass a language requirement.
- I want to make friends with native English speakers. I must know English to apply for admission to universities.
- I am interested in understanding cultures where English is spoken. English is an interesting language.
- Knowing English will bring me prestige or status. Others(please specify _____)

6. How important is it for you to become proficient in English?

- Very important important not so important

7. How would you rate your own Poor Fair Good Excellent

Overall English proficiency?

Reading skill?

8. What are your English exam results?

- A+ A B+ B C+ C D+ D

9. How many hours do you spend reading online/use the Internet per day?

- Less than 1 hour Between 1 and 2 hours Between 2 and 3 hours Between 3 and 4 hours Between 4 and 5 hours More than 5 hours

10. What do you mostly read online? (Check all that apply)

- Class materials Journals E-mails Comic Books Blogs/personal websites Local news
 Travel Others

- movies/celebrity/gossips World news Magazines _____

11. What types of difficulties do you encounter when reading academic texts online? Please explain below:

12. Are you willing to participate in the second phase of the study?

If yes, please click NEXT to continue _____

13. How often do you use each of these strategies when you read online in English for academic purposes? Note that there are no right or wrong responses to any of the items in this section.

No	Strategies	Never	occasionally	Sometimes	Usually	Always
1	I have a purpose in mind when I read online.					
2	I participate in live chat with other learners of English.					
3	I participate in live chat with native speakers of English					
4	I take notes while reading online to help me understand what I read.					
5	I think about what I already know to help me understand what I read online.					
6	I first scroll through the online text to see what it is about before reading it.					
7	When online text becomes difficult, I read aloud to help me understand what I read.					
8	I analyze whether the content of the online text fits my reading purpose.					
9	I read slowly and carefully to make sure I understand what I am reading online.					
10	I review the online text first by noting its characteristics like length					

	and organization.					
11	I try to get back on track when I lose concentration.					
12	I print out a hard copy of the online text then underline or circle information to help me remember it.					
13	I adjust my reading speed according to what I am reading online.					
14	When reading online, I decide what to read closely and what to ignore					
15	I use reference materials (e.g., an online dictionary) to help me understand what I read online.					
16	When online text becomes difficult, I pay closer attention to what I am reading.					
17	When academic sites have links to other sites, I click on them to see what they are.					
18	I use tables, figures, and pictures in the online text to increase my understanding.					
19	I stop from time to time and think about what I am reading online.					
20	I use context clues to help me better understand what I am reading online.					
21	I paraphrase (restate ideas in my own words) to better understand what I read online.					
22	I try to picture or visualize information to help remember what I read online.					
23	I use typographical features like bold face and italics to identify key information.					
24	I critically analyze and evaluate the information presented in the online text.					
25	I go back and forth in the online text to find relationships among ideas in it.					
26	I check my understanding when I come across new information.					
27	I try to guess what the content of the online text is about when I read.					
28	When online text becomes difficult, I reread it to increase my understanding.					
29	I ask myself questions I like to have answered in the online text.					
30	I check to see if my guesses about the online text are right or wrong.					
31	When I read online, I guess the meaning of unknown words or phrases.					
32	I scan the online text to get a basic idea of whether it will serve my purposes before choosing to read it.					
33	I skip words or sections I find difficult or unfamiliar.					
34	I critically evaluate the online text before choosing to use information I read online.					
35	I can distinguish between fact and opinion in online texts.					
36	When reading online, I look for sites that cover both sides of an issue.					
37	When reading online, I translate from English into Arabic.					
38	When reading online, I think about information in both English and Arabic.					
39	When I encounter difficult reading in English, I seek material on the same topic in Arabic.					

Appendix 3

Categories of the Online Survey of Reading Strategies

A. Global Reading Strategies

1. I have a purpose in mind when I read online.
2. I participate in live chat with other learners of English.
3. I participate in live chat with native speakers of English.
5. I think about what I already know to help me understand what I read online.
6. I first scroll through the online text to see what it is about before reading it.
8. I analyze whether the content of the online text fits my reading purpose.
10. I review the online text first by noting its characteristics like length and organization.
14. When reading online, I decide what to read closely and what to ignore.
17. When academic sites have links to other sites, I click on them to see what they are.
18. I use tables, figures, and pictures in the online text to increase my understanding.
20. I use context clues to help me better understand what I am reading online.
23. I use typographical features like bold face and italics to identify key information.
24. I critically analyze and evaluate the information presented in the online text.
26. I check my understanding when I come across new information.
27. I try to guess what the content of the online text is about when I read.
30. I check to see if my guesses about the online text are right or wrong.
32. I scan the online text to get a basic idea of whether it will serve my purposes before choosing to read it.

B. Problem Solving Strategies:

9. I read slowly and carefully to make sure I understand what I am reading online.
11. I try to get back on track when I lose concentration.
13. I adjust my reading speed according to what I am reading online.
16. When online text becomes difficult, I pay closer attention to what I am reading.
19. I stop from time to time and think about what I am reading online.
22. I try to picture or visualize information to help remember what I read online.

28. When online text becomes difficult, I re-read it to increase my understanding.
31. When I read online, I guess the meaning of unknown words or phrases.
33. I skip words or sections I find difficult or unfamiliar.
34. I critically evaluate the online text before choosing to use information I read online.
35. I can distinguish between fact and opinion in online texts.
36. When reading online, I look for sites that cover both sides of an issue.

C. Support Reading Strategies:

4. I take notes while reading online to help me understand what I read.
7. When online text becomes difficult, I read aloud to help me understand what I read.
12. I print out a hard copy of the online text then underline or circle information to help me remember it.
15. I use reference materials (e.g., an online dictionary) to help me understand what I read online.
21. I paraphrase (restate ideas in my own words) to better understand what I read online.
25. I go back and forth in the online text to find relationships among ideas in it.
29. I ask myself questions I like to have answered in the online text.
37. When reading online, I translate from English into Arabic.
38. When reading online, I think about information in both English and Arabic.
39. When I encounter difficult reading in English, I seek material on the same topic in Arabic.

Appendix 4
Internet Use Questionnaire

Please fill out the following information:

1. Name _____ 2. E-mail _____

3. Age _____ 4. Gender _____

5. Major _____

6. How long have you been studying English? _____

7. How do you rate your English reading proficiency as compared with the proficiency of other classmates?
Please circle one.

Excellent Very Good Good Fair Poor

8. Do you like to read on the Internet? Please circle one.

Yes Sort of No

9. Please rank the following six activities in order of use from 1-6. Write a "1" beside the

Internet activity you do the MOST, a "2" beside the activity you do second most, and so on, ending by writing a "6" beside the Internet activity you do the LEAST. You can also ignore

certain items that do not apply to you.

_____ Playing interactive games on the Internet

_____ Searching for a topic using a search engine

_____ Reading certain websites to learn more about a topic

_____ Using e-mail, Instant messenger, or chat rooms

_____ Browsing or exploring many different webpages

_____ Downloading music and software games

10. How good are you at figuring out where to go on the Internet to find what you want?

Please circle one.

Very good Good Fair Poor

11. How good are you at using a search engine to find what you want? Please circle one.

Very good Good Fair Poor

12. Name two of your favorite Internet sites.

1. _____ 2. _____

13. How do you find something you are searching for on the Internet? Please explain.

14. What else would you like to tell me about how you use the Internet?

Appendix 5

Think-Aloud Reading Texts

Text 1: Choosing Foods to Help You Sleep:

Getting a good night's sleep makes your work day (or school day) go so much better. If you have difficulty sleeping, you already know how tough staying alert during the day can be. But did you know that sleep is also important for your health? People who have chronic sleep loss are also at a higher risk of being obese, having heart disease, diabetes and kids with ADHD often have sleep disorders.

If you don't get enough sleep at night, you might rely on caffeine to keep you awake during the day. Caffeine is a popular stimulant, found in tea, chocolate, some types of soda, energy drinks and in coffee. Enjoying a cup or two of coffee in the morning is fine, but you're drinking a whole pot of coffee, it might be time to cut back. Especially if you're drinking a lot of that coffee in the afternoon. Too much caffeine makes you jittery and if you consume it later in the day, the caffeine makes it more difficult to sleep at night. It can become a vicious circle. You use caffeine to perk up, but then you can't sleep, so the next day you use more caffeine and lose sleep again that night. And so it goes.

Quitting the caffeine habit isn't easy or comfortable. Many people suffer from withdrawal symptoms such as headaches, drowsiness, flu-like feelings, irritability and lack of concentration when they give up caffeine cold turkey. You can avoid those symptoms by gradually withdrawing. Try blending decaffeinated coffee with regular coffee. Increase the amount of decaf over a few weeks' time.

The relationship between your diet and good sleep doesn't end with caffeine. There are several other ways to use your diet to help you sleep.

Avoid heavy foods or spicy foods. Or any foods you know that may cause heartburn, making it difficult for you to sleep at night.

Don't drink too much alcohol. Although alcohol may make you drowsy, over-consumption of your favorite adult beverages may cause a very restless uncomfortable night.

Eat cherries. Not only are they rich in vitamins, cherries contain melatonin, a substance also found in the human body that helps regulate sleep. Eating fresh or dried cherries before you go to bed at night may help you sleep better.

Enjoy a light bedtime snack. Choose carbohydrates and dairy products, like a small bowl of whole grain cereal and non-fat milk. Carbohydrates make it easier to fall sleep. Dairy products contain tryptophan, which promotes sleep. Other foods that contain tryptophan are bananas, oats, and honey.

Avoid eating excessive fats. People who eat large amounts of fat may also have more difficulty sleeping. Be sure to get enough omega-3 fatty acids each day, however, because eicosapentaenoic acid (one type of omega-3 found in fish, especially tuna, salmon and trout) has a role in sleep induction in your brain.

People who don't get enough sleep tend to overeat by adding extra sugary and carbohydrate-rich snacks to their diets. All the extra calories from the snacking can lead to obesity, so not only do the foods you eat affect how you sleep, but the amount of sleep you get also affects the foods you choose to eat.

(Source: <http://nutrition.about.com/od/foodfun/a/foodsandsleep.htm>)

Text 2: Sleeping Well: What You Need to Know

Sleep Requirements, Needs, Cycles, and Stages:

Why can't I sleep? Why am I so tired? If you're like half of all adults, you may not be sleeping well and not getting the right amount of sleep. Today's fast paced society can make sleep seem like a luxury, not a need, but this is simply not true: you need quality sleep for good health. Sleep deprivation affects your entire body and mind.

Getting good, restorative sleep is not just a matter of hitting the pillow at night and waking up in the morning. Regulated by your body clock, your nighttime journey consists of sleep cycles with specific sleep stages, all vital for your body. Understanding these sleeping needs, cycles and stages can help you get better sleep.

What happens if we don't get enough sleep?

Many of us want to sleep as little as possible. There is so much to do that sleep seems like a waste of time. Yet sleep, an essential time of rest and rejuvenation, benefits our minds and bodies in many ways. When you continuously don't get the amount of sleep you need, you begin to pay for it in daytime drowsiness, trouble concentrating, irritability, increased risk of falls and accidents, and lower productivity.

Sleep benefits to our mood, memory and concentration

Have you ever pulled an "all nighter" to study for a final exam, only to find that you can barely remember what you studied during the test? Sleep helps to organize memories, solidify learning, and improve concentration. Proper sleep, especially sleep where you are actively dreaming (REM sleep), regulates mood as well. Lack of sleep can make you irritable and cranky, affecting your emotions, social interaction, and decision making. Sleep deprivation also affects motor skills, enough to be similar to driving while drunk if seriously sleep deprived. Driver fatigue, according to the National Highway Traffic Safety Administration, causes over 100,000 accidents and 1500 deaths each year.

Sleep benefits to our immune system, nervous system and development

Immune system: It doesn't seem fair. Right when you are exhausted after a stressful move or a big project at work, you come down with a cold. That's no accident - sleep is essential to the immune system. Without adequate sleep, the immune system becomes weak, and the body becomes more vulnerable to infection and disease.

Nervous system: Sleep is also a time of rest and repair to neurons. Neurons are the freeways of the nervous system that carry out both voluntary commands, like moving your arm, and involuntary commands, like breathing and digestive processes.

Brain cellular repair, replenishment and growth

Recent studies have suggested that sleep downtime of the brain, so active during the day, may replenish dwindling energy stores that cells need to function, repair cellular damage caused by our busy metabolism, and even grow new nerve cells in the brain.

Hormone release: Many hormones, substances produced to trigger or regulate particular body functions, are timed to release during sleep or right before sleep. Growth hormones, for example, are released during sleep, vital to growing children but also for restorative processes like muscle repair.

Sleep deprivation and how it affects your life

How do you know if you're getting the sleep you need? Sleep deprivation occurs when you are not sleeping the right amount for your individual needs. Sometimes sleep deprivation is short term, like a college student pulling an all nighter. Chronic sleep deprivation often occurs in professions who work long hours, caregivers with multiple responsibilities, a concurrent sleep disorder or another disease that interferes with sleep. If you

are falling asleep as soon as your head hits the pillow, regularly need an alarm clock to wake up, or feel the need for frequent naps during the day, it is very likely you are sleep deprived.

Other signs you may be suffering from sleep deprivation include:

- difficulty waking up in the morning.
- poor performance in school, on the job, or in sports.
- increased clumsiness.
- difficulty making decisions.
- falling asleep during work or class.
- feeling especially moody or irritated.

Sleep deprivation can be dangerous not only to you but others, since it affects motor skills like driving. Chronic sleep deprivation is also thought to cause long term changes to the body, which contribute to increased risk for obesity, diabetes and heart disease.

Think you’re getting enough sleep?

If you’re one of those people who think 5 hours of sleep per night is all you need, you may be surprised to learn that you’re actually sleep deprived. The BBC has a fun test to help determine your reaction time directly related to sleep.

Find out how much sleep you need

So how much sleep do you need? A rule of thumb is to consider how you normally feel after sleep. Do you feel refreshed and alert, or groggy and exhausted? If you don’t feel refreshed, chances are you’re not sleeping enough. Sleep requirements are highly individual and depend on many factors:

- your age and genetic makeup.
- what you do during your waking hours, including exercise.
- the quality of your sleep.

Typical Sleep Needs:

Group	Amount of Sleep Needed
Infants Babies and toddlers	About 16 hours per day of sleep From 6 months to 3 years: between 10 and 14 hours per day. Infants and young children generally get their sleep from a combination of nighttime sleep and naps
Children Ages 3 to 6	between 10 and 12 hours of sleep Ages 6 to 9: about 10 hours of sleep Ages 9 to 12: about 9 hours of sleep
Teenagers	About 9 hours of sleep per night. Teens have trouble getting enough sleep not only because of their busy schedules, but also because they are biologically programmed to want to stay up later and sleep later in the morning, which usually doesn’t mesh with school schedules
Adults	For most adults, 7 to 8 hours a night appears to be the best amount of sleep.
Older adults	Older adults are also thought to need 7-8 hours of sleep. However, this sleep may be for shorter time spans, is lighter than a younger adult’s, and may include a nap during the day. Pregnant women During pregnancy, women may need a few more hours of sleep per night, or find that they need small catnaps during the day.

Paying off your sleep debt

Your body can't just bounce back from not sleeping enough. Sleep deprivation adds up to what is called a sleep debt. A sleep debt can range from one night's very poor sleep to the accumulation of many days of not enough sleep. Although you won't be getting letters from creditors if you ignore this sleep debt, not paying it off leads to decreased mental and physical health.

Paying off your sleep debt and getting your body back to normal may seem difficult or impossible with work and family responsibilities. However, making up for lost sleep and improving future sleep habits will increase your productivity and health in the long run.

Short term sleep debt

For a short term sleep debt, like a night or two of little sleep, you may just need a day or two of increased sleep to make it up. However, try not to make it a habit. Making up sleep on the weekends so you can sleep less during the week, for example, can disrupt overall sleep quality. Your sleep will be better if you go to bed and wake up at roughly the same time each day.

Long term sleep debt

If you have been chronically sleep deprived, you might need a longer time to make up your sleep debt. You may even need to take a sleep vacation, where you devote a few days to sleeping as long as needed. Although it may seem excessive at first, soon your body will revert to your optimum sleep needs

Sleep stages: the sleep cycle. How we fall asleep?

How do our bodies know when it is time to sleep? We all have an internal circadian clock that provides cues for when it is time to sleep and time to wake. This clock is sensitive to light and time of day, which is why having a good bedtime routine and a quiet dark place to sleep is so important. At the same time, a chemical messenger called adenosine builds up during the day as our bodies are busy using energy. The more adenosine builds up in the brain, the sleepier you will feel. Adenosine combined with the circadian clock sends a powerful message of sleepiness to your body.

Understanding sleep stages and the sleep cycle can help you get better sleep. Your sleep is regulated by an internal body clock, sensitive to light, time of day and other cues for sleep and awakening. When you fall asleep, your sleep goes in cycles throughout the night, moving back and forth between deep restorative sleep and more alert stages and dreaming. As the night progresses, you spend more time in dream sleep and lighter sleep.

There are two main types of sleep. REM (Rapid Eye Movement) sleep is when you do most active dreaming. Your eyes actually move back and forth during this stage, which is why it is called REM sleep. Non-REM (NREM) sleep consists of four stages of deeper and deeper sleep. Each sleep stage is important for overall quality sleep, but deep sleep and REM sleep are especially vital.

A typical night of sleep follows this steps:

- **Stage 1 (Drowsiness)** - Stage 1 lasts just five or ten minutes. Eyes move slowly under the eyelids, muscle activity slows down, and you are easily awakened.
- **Stage 2 (Light Sleep)** - Eye movements stop, heart rate slows, and body temperature decreases.
- **Stages 3 & 4 (Deep Sleep)** – You're difficult to awaken, and if you are awakened, you do not adjust immediately and often feel groggy and disoriented for several minutes. Deep sleep allows the brain to go on a little vacation needed to restore the energy we expend during our waking hours. Blood flow decreases to the brain in this stage, and redirects itself towards the muscles, restoring physical energy. Research also shows that immune functions increase during deep sleep.
- **REM sleep (Dream Sleep)** – At about 70 to 90 minutes into your sleep cycle, you enter REM sleep. You usually have three to five REM episodes per night. This stage is associated with processing

emotions, retaining memories and relieving stress. Breathing is rapid, irregular and shallow, the heart rate increases, blood pressure rises, males may have penile erections, and females may have clitoral enlargement.

Importance of deep sleep and REM sleep:

Deep Sleep

Each stage of sleep offers benefits to the sleeper. However, deep sleep is perhaps the most vital stage. It is the first stage that the brain attempts to recover when sleep deprived, and the strongest effects of sleep deprivation are from inadequate deep sleep. What might disrupt deep sleep? If you are caring for someone around the clock, whether it is a small infant or an elderly relative with a serious illness, you might need to attend to them suddenly in the middle of the night. Loud noise outside or inside the home might wake you. If you work the night shift, sleeping during the day may be difficult, due to light and excess noise during the day. Substances like alcohol and nicotine also disrupt deep sleep.

Maximize your deep sleep. Make sure your sleep environment is as comfortable as possible and minimize outside noise. If you are being awakened as a caregiver, make sure that you get some time of uninterrupted sleep, especially if you have had some unusually disruptive nights. Don't be afraid to ask for help.

REM sleep

REM sleep, or dream sleep, is essential to our minds for processing and consolidating emotions, memories and stress. It is also thought to be vital to learning, stimulating the brain regions used in learning and developing new skills. Most of dreaming occurs during REM sleep, although it can happen during other sleep stages as well. There are different theories as to why you dream. Freud thought that dreams were the processing of unconscious desires. Today, researchers wonder if it may be the brain's way of processing random fragments of information received during the day. Much of dreaming is still a mystery. If REM sleep is disrupted one night, your body will go through more REM the next to catch up on this sleep stage.

Getting more REM sleep

Studies have shown that better REM sleep helps boost your mood during the day. How can you get more REM sleep? One simple way is to try to sleep a little more in the morning. As your sleep cycles through the night, it starts with longer periods of deep sleep. By the morning, the REM sleep stage is longer. Try sleeping an extra half hour to hour and see if your mood improves.

Improving your overall sleep will also increase your REM sleep. If your body is deprived of deep sleep, it will try to make that up first- at the expense of REM sleep.

Getting the sleep you need

How can you make sure you get the sleep you need? A few extra hours here and there if you are sleep deprived might make you feel better for a short time. But it won't get you the quality sleep you need for the best health. To consistently meet sleep requirements for both deep sleep and REM sleep, you need to set the stage for good sleep on a daily basis. This involves:

- improving your daytime habits.
- creating a better sleep environment.
- avoiding food and drink that might interfere with sleep.
- developing a good bedtime routine.

What if insomnia or another sleep problem is interfering with my sleep?

- Do you spend hours staring at the wall at night, worrying more and more that you can't sleep? You are not alone - over 40 million Americans a year will suffer from some sort of sleep disorder. Common sleep disorders include insomnia, sleep apnea, restless legs syndrome, and narcolepsy.

(Source: <http://www.helpguide.org/life/sleeping.htm>)

Appendix 6

Online Reading Comprehension Questions

Choosing Foods to Help You Sleep

1. What does the word “jittery” in the second paragraph mean?
2. Explain how we can avoid those symptoms of caffeine withdrawal mentioned in the article.
3. How are omega-3 fatty acids helpful for your sleep?
4. According to the article, why should we get enough sleep?

Sleeping Well: What You Need to Know

1. What does the word “deprivation” in the fourth paragraph mean?
2. How can you tell when someone is sleep deprived?
3. Why does each person need different amount of sleep?
4. Describe how our bodies know when it is time to sleep.
5. According to the article, which stage of sleep is probably most important and why?
6. What can we do to improve our mood during the day?



In the Name of Allah, the Most Compassionate the Most Merciful

To: Abeer Abdallah Ebrahim Mohammed Zain

Based on your request to apply your thesis on the students of the Preparatory Year in University of Hail, under the title:

Shaping EFL Students Perception of Self-Reading Efficiency through Online Strategies

(A Case Study of the Preparatory Year Students at University of Hail / KSA)

I would like to inform you that we have no objection concerning this topic, provided that confidentiality is maintained and that the information is strictly used for the purposes of this research.

The Vice Dean of Preparatory Year

Dr. Mona Al-Yousef

The Online Reading Strategies that Preparatory Year Students at University of Hail / KSA Use for Academic Purposes

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Abstract:

This study investigates the online reading strategies that students use for academic purposes among Preparatory Year students at University of Hail / KSA academic year 2018/2019 during the second semester. The data gathered to address this topic came from multiple sources. First, to examine the students' responses to the open-ended question as to what they perceived as their reading difficulties when reading online for academic purposes, I calculated the percentage of their responses to the OSORS and investigated whether the reported data from both groups were found to be different from each other.

To gain more insights into the students' actual use of strategies when they were asked to undertake online reading tasks, the research question was formulated. To address this question, I used qualitative data from multiple sources: Internet use questionnaires, pre- and post-reading interviews, observations through think-aloud sessions, and self-reports of online reading strategies.

Keywords: online reading strategies, academic purposes, preparatory year students, University of Hail/KSA

The difficulties that Preparatory Year students at University of Hail face when reading online materials

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Abstract:

This study investigates the difficulties that face students when they read online materials among Preparatory Year students at University of Hail / KSA academic year 2018/2019 during Second Semester. The data gathered to address this topic came from multiple sources. First, to examine the students' responses to the open-ended question as to what they perceived as their reading difficulties when reading online for academic purposes, I calculated the percentage of their responses to the OSORS and investigated whether the reported data from both groups were found to be different from each other.

In a later part, I discussed in greater detail each type of reading difficulty separately by means of their responses to the OSORS' open-ended question in conjunction with the other qualitative data, namely pre- and post-reading interviews, observations through think-aloud sessions, and self-reports of online reading strategies. Also, to ascertain inter rater reliability, the co-coder and I separately coded the data. Disagreements were resolved by discussion.

The following points report different types of online reading difficulties that were reported by the OSORS respondents, the reported areas of difficulty could be separated into these emerging themes: (1)