An Investigation into the Reading Strategies of ESP Students in the College of Medical Sciences at Umm Al-Qura University

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ABSTRACT

This study is an investigation into the reading strategies used by a group of medical sciences students enrolled in an intensive ESP program. It is launched with the objective of identifying the reading strategies commonly used by these students. The study also aims to point out which strategies that the students need to develop in order to pursue their academic studies successfully and to get the maximum out of the text they read. The sample is composed of 24 students from the college of medical sciences at Umm AL Qura University .Results obtained through a questionnaire and think – aloud protocol reveal that the subjects use an astonishingly limited number of reading strategies. Out of 20 strategies claimed to be used by the subjects in response to the questionnaire, only eight reading strategies have been actualized during the think-aloud protocol. It is also found that some of the strategies claimed to be or actually used by the subjects are really poor strategies and are not likely to yield proper comprehension

.The study ends up giving some suggestions which involve training the students to use more effective strategies to help them accomplish their reading tasks successfully. Further research into the area is also recommended.

Dr. Abdul majeed Al-Tayib Omar

بحث في استراتيجيات القراءة باللغة بالانجليزية التي يستخدمها طلاب العلوم الطبية بجامعة أم القرى

د. عبد المجيد الطيب عمر

ملخص الدراسة

هذه الدراسة عن أساليب القراءة التي يستخدمها مجموعة من طلاب كلية العلوم الطبية بجامعة أم القرى بمكة المكرمة، المسجلين في برنامج اللغة الانجليزية للأغراض الخاصة. أجريت هذه الدراسة بهدف تحديد الاستراتيجيات التي يستخدمها الطلاب عادة حين يباشرون القراءة في اللغة الانجليزية، كما هدفت الدراسة إلى تحديد أساليب القراءة التي يحتاجها الطلاب ليتمكنوا من مواصلة دراستهم الأكاديمية بنجاح، وتحديد السبل التي تمكن الطلاب من الاستفادة القصوى مما يقرءون.

تكونت عينة هذه الدراسة من أربعة وعشرين طالبا من كلية العلوم الطبية، وجاءت نتائج هذه الدراسة التي تم الوصول إليها من خلال استخدام الاستبانة وبروتوكولات التفكير بصوت عال إلى أن أفراد العينة يستخدمون عددا محدودا جدا من استراتيجيات القراءة. فمن مجمل عشرين استراتيجية زعم أفراد العينة استخدامها (من خلال الاستبانة)، لم يُستخدم منها في الواقع سوى ثماني استراتيجيات. كما تبين أن بعض الاستراتيجيات التي زعم أفراد العينة استخدامها أو تم استخدامها فعلا هي استراتيجيات قراءة ضعيفة وغير مثمرة، ولا تؤدي إلى فهم جيد.

وخُتمت الدراسة بتقديم بعض المقترحات والتوصيات التي تساعد الطلاب على القراءة الجيدة. وهذه تشمل ضرورة تدريب الطلاب على استخدام أساليب القراءة الجيدة التي يمكن أن تعينهم على إتمام واجباتهم الأكاديمية بنجاح، كما اقترحت الدراسة القيام بمزيد من البحوث في هذا الحقل المهم.

Introduction

Since the early seventies, reading researchers have concentrated on describing strategies and procedures used by second / foreign language learners while or when they read a text. Findings of these studies indicate that students use a variety of strategies in order to read better (Hosenfeld, 1977; knight, Pardon & Waxman, 1985; Garcia and Pearson, 1995). In Singhal (2001) terms, strategies can be defined as learning techniques, behaviors, and problem-solving or study skills that help learners to read more effectively and efficiently. Block (1986) adds that reading strategies show how readers conceive a text, what textual cues they attend to, how they make sense of what they read, and what they do when they do not comprehend the text. Meiraf (2013) states that these strategies may involve skimming, scanning, recognizing synonyms and word families, predicting, activating general knowledge, making inferences, and identifying main ideas from supporting ones.

Furthermore, reading strategies may involve evaluating content, finding an association between the text and previous knowledge or experience, asking and answering questions

relevant to the text, identifying key words, using grammatical analysis to determine the various components of the sentence, skipping, rereading, paraphrasing and summarizing (Almasi, 2012).

Obviously these strategies can be useful tools for teachers of English as a foreign language, who normally do not find sufficient practice time for their students who are required to cope with studying a new language and reading for content (Wafi, 2012). It is also reported that the need for efficient reading skills is heightened at the post secondary levels, especially at tertiary education, where English gains significant importance as it becomes a medium of instruction and a vehicle of content information. To cope with this situation, students must take English for special purposes (ESP) courses. Such courses are specially designed to assist students read technical subject matter written in English.

Typically, in colleges of medicine, sciences, engineering and technology in Saudi Universities as it is the case in many other Arab countries, English is solemnly adopted as a medium of instruction. Students in such colleges are oftentimes assigned for intensive ESP courses with the ultimate objective of raising their standard of English and

qualifying them to benefit by instruction provided through English medium. However, in spite of the tremendous effort made by both teachers and students during their ESP courses, students reading skills remain far away from being satisfactory. Terribly slow reading, word-for-word translation and hence minimum comprehension are characteristic features of many ESP readers.

Although many ESP textbooks include clear prescriptions of activities that call for the use of fruitful reading strategies, such as skimming, scanning, activating background knowledge and paraphrasing or summarizing, the implementation of these techniques in actual reading practice of the students is hardly noticeable. Consequently, students face significant difficulties when reading English textbooks related to their specializations. This situation may lead to students' frustration and may induce them to develop negative attitudes towards reading which may, in its turn, result in students' low achievement or, even worse, failure in their respective fields of study.

To avoid such unnecessary tragic consequences, this study is launched to investigate the reading strategies which ESP students at Umm Al-Qura University generally use when

they read a text, and which strategies they do not use but they need to develop to improve their reading comprehension.

This study, therefore, aims to find answers for the following questions:

1- Which strategies do medical sciences students at Umm Al-Qura University use when they read texts related to their field of specialization?

2- Which reading strategies should be developed by these students in order to improve their reading skills and to continue their academic studies successfully?

3- Are there any differences between "good" and "poor" readers in term of their reading strategies use?

Review of Literature
Theoretical Considerations

Strategies are learning techniques, activities and problem solving skills that enhance learning (Singhal, 2001). Oxford (1990) provides a useful classification scheme of the various strategies used by second language learners. This involves: (1) Cognitive strategies: these are used by the learners to manipulate language. This category covers note-taking, formal study of the specific aspects of the target language, summarizing, paraphrasing, predicting, analyzing and using context clues. (2) Memory Strategies: these help the reader remember information through creating mental pictures, grouping and associating. (3) Compensation strategies which involve activities such as guessing while reading, or using

dictionaries. (4) Meta-cognitive strategies: these involve activities done by the learner to plan, arrange, and assess their own learning. Such strategies may also include setting goals and objectives, self- monitoring and correction of errors. (5)Affective strategies: these include self-encouraging behavior, to reduce anxiety. (6) Social strategies: which cover cooperation with peers and asking for correction and feedback.

Sanders (2013) confirms that reading researchers have identified a wide variety of strategies. She maintains that these reading strategies range from traditionally recognized reading behavior such as skimming a text to get the general idea, and scanning a text for specific piece of information to more recently recognized cognitive strategies such as activating prior background knowledge and recognizing text structure.

Generally speaking, research in first and second language reading has provided a binary division of cognitive reading strategies as bottom-up and top-down. Goodman (1986), for instance, refers to the bottom-up model as a process of decoding, which involves identifying letters, words, phrases and then sentences in order to get the meaning. On the other hand, the top-down model is based on "the selection of the fewest and most productive elements from a text so as to make sense of it" (Lynch & Hudson, 1991, p.218). Goodman (1998) describes reading as a psycho-linguistic guessing game in which the reader reconstructs a message that has been coded by a writer as a graphic display.

The above mentioned cognitive model of reading is very much influenced by the schema theory which is broadly defined as the building blocks of cognition. According to

Rumelhart (1980), schemata are used for the interpretation of both linguistic and non-linguistic information, for retrieving information from memory, for arrangement of actions, and largely for the direction of the flow of processing in the system.

Rumelhart (1980) defines schema as an abstract representation of generic concepts, stored in the memory for objects, actions, events and situations. In this sense, schema may help in interpretation of new information by linking it to past experience and prior knowledge. For Galicia, (2006) Schema is a summary of different conditions that have general features in common, but differ in details. It is a structure that represents an organization pattern of relationships among its constituents.

In order to understand the role of schemata in reading comprehension, it is worthwhile to differentiate between two types of schemata: formal and content Schema (Carrel, 1983). Formal Schemata stand for the background knowledge about the text structures. These may include differences in organization and structure of different types of writing such as articles, expository texts, scientific reports, and so on. Content schemata, on the other hand, involve the cultural and the background knowledge about the content of the text such as a text about economics, medicine, chemistry, biology and the like. Numerous studies have shown that content schemata have great influence on reading comprehension (Pearson, 1990; Basloum, 1996; Singhal , 2001; Phan, 2006).

Empirical studies

A number of empirical studies have been conducted since the late seventies. Several of these studies have identified concrete relationships between certain types of reading strategies and successful and unsuccessful second language reading. Other studies have investigated individual differences in strategy use by second language learners while engaged in different reading tasks. In recent years, a great deal of research has been conducted on reading strategy training. Such research is based on the assumption that success in reading depends mainly on appropriate strategy use and that poor readers can improve their reading by being trained to use effective strategies.

Of the early empirical studies conducted to demonstrate the relationship between strategy use and successful reading is that by Hosenfeld (1977). Hosenfeld studies high school students reading French, German or Spanish, but thinking aloud in English. She finds that successful French readers do several things :

1- They keep the meaning of the passage in their mind during reading.
2- They read in what she terms as broad phrases.
3- They skip words unimportant to total phrase meaning.
4- They have positive self-concept as readers.

On the other hand, Hosenfeld finds that unsuccessful French readers:

1- Lose the meaning of sentences as soon as they are decoded.
2- Read in short phrases.
3- Seldom skip words as unimportant and view words as equal in their contribution to total phrase meaning.
4- Have negative self-concept as readers.

Using a Think-aloud Protocol, Olshavsky (1977) examines the reading strategies used by tenth grade students. Students' strategies are analyzed according to the following criteria: reading proficiency (good vs. poor), readers' interest (high vs. low), and reading material (abstract vs. concrete). Olshavsky finds that students who have high reading proficiency and are interested in what they read can easily employ problem solving strategies to surpass their reading problems. It is then concluded that effective use of strategies is a feature of good readership.

Block (1986) studies non-proficient readers enrolled in remedial reading courses in the US. She finds that there are four characteristics that distinguish the more successful from the less successful of these non-proficient readers. The four characteristics are: (1) integration, (2) recognition of aspects of the text structure, (3) use of general knowledge, personal experiences, and associations, (4) response in an extensive as opposed to a reflexive mode.

Barnett (1988) investigates the relationship between reading strategies and perceived strategy use on reading comprehension. This study dealt with 278 French language students. Initially, these students are required to read an unfamiliar text and to report what they understand in English. The second part asks the subjects to answer a set of background questions before reading a text, and the third part of the study asks the students to respond to a seventeen-item questionnaire in English about the types of reading strategies they think best denote their method of reading. 'Background knowledge scores' 'Comprehension scores', and 'Strategy use score' are used for analysis. This analysis reveals that the

subjects who effectively consider and clearly remember context as they read, understand more of what they read than those who employ this strategy less or less effectively. Moreover, it is found that the subjects who think they use some strategies (i.e. perceived strategy use) actually "understand more than those who do not think they use such strategies" (p.156).

Basloum (1996) investigates the effect of text structure on 'good' and 'poor' EFL female readers at a Saudi University. This study involves 114 subjects and aims to examine how 'good' and 'poor' readers differ in the quantity, quality and variety of the reading strategies they use in reading two types of text structures. Basloum finds that 'good' and 'poor' readers differ significantly in their approach to the text. More specifically, she finds that good readers approach the text independently and adjust their scheme to accommodate that of the writer. Conversely, poor readers approach the text dependently and adjust the text to fit their own scheme of meaning. Basloum ends up her study giving some useful pedagogical and methodological recommendations for the support of the interactive theory of reading. These include the use of retrospection tasks, reading instruction, students' training and classroom practice.

Kern (1997) studies the case of two American university students learning French as a second language; one 'a good reader of French as L2,' the other less good. Kern finds that no strategy is inherently a 'good' or a 'bad' strategy; that some of the so-called "bad" strategies are oftentimes used by 'good' readers and vice-versa. The researcher goes on to explain that using prior knowledge may sometimes be an effective strategy

for one reader in a certain reading situation, but not for another reader in another reading context.

Galicia, (2006) studies reading strategies used by Swedish secondary school students studying English as a foreign language. The sample is comprised of four fifteen-year-old students. Data are collected through a series of interviews with the subjects. Results of this study reveal that pupils who are subjected to different reading strategies are better readers than those who are not. It is clearly demonstrated that when reading strategies become part of the learning process, they will increase the pupils' reading comprehension. This study also reveals that there are some important strategies that the subjects need to use. These include summarizing, paraphrasing and rereading to enhance comprehension.

In a relevant area of investigation, Song (1998) proposes a method for training students to use reading strategies in an EFL university reading program. This training method is based on the procedure developed by Brown and Palincsear (1984). It includes four consecutive reading strategies: summarizing, questioning, clarifying and predicting. The study addresses the following research questions: "Does strategy training enhance reading ability of EFL college students?" If so" How is effectiveness reading strategy training related to the reading proficiency of the students?" Which types of reading comprehension questions are affected by strategy training? "(P:41). Results show that "strategy training enhances EFL reading and that the effectiveness of training varies with L2 reading proficiency"(P"41). The results also indicate that students' performance on certain types of reading

comprehension questions is improved by the training method. These findings suggest that foreign language reading methodology should include explicit and direct strategy teaching.

Based on his empirical studies on Iranian students reading strategies, Vaez (2006) offers guidelines which can be used as general ideas to aid students in reading and comprehending materials. These guidelines can be seen in three consecutive phases: before reading, during reading, and after reading. Before starting to read a text, it is recommended that the reader should think of the purpose of reading that particular text. The during reading technique may include re-reading for better comprehension. Filling out forms and charts can be used as an after-reading activity. Vaez proposes that these tasks and ideas can be implemented to enhance reading comprehension.

Ozek and Livelek (2006) conduct a study to find out which reading strategies are commonly employed by ELT students when reading a text, and which reading strategies that need to be developed to understand the text better. The population of this study involves beginner and final students in ELT department at a Turkish university. The researchers use two different instruments to collect data for this investigation: a Self –Report Questionnaire and a Think-aloud Protocol. The Questionnaire which is composed of 25 items is administered to a sample of 185 subjects. The Think-aloud Protocol is conducted with 23 subjects. Reading strategies are evaluated under three categories: pre-reading, while-reading and post-reading in both parts. The result of the Think-aloud Protocol analysis shows that the subjects use one single strategy, that is "relating the title to the text content", in the pre-reading phase.

In "the while-reading stage", the most commonly employed strategies are "using the dictionary", "guessing the meaning of a word from the context", "skipping some unknown words", and "assimilating the text with the background knowledge". However, none of the participants has used any of the post-reading strategies.

Tung-hsien He (2012) studies the effect of goal orientations on strategy use patterns and reading comprehension of adult EFL readers. Thirty-eight Taiwanese EFL college students are randomly selected and assigned into "the mastery-oriented" and the combined mastery and performance-oriented group. Results of this study show that at least two strategy use patterns have surfaced in the participants' Think-aloud Protocols. The combined group goes through more turns of strategy use and employs more follow-up strategies, compared to its counterpart. The combined group also attains better reading comprehension. On the other hand, the mastery-oriented group is found to be more liable to stop its efforts at understanding the unknown vocabulary/expression. This study concludes that goal orientations leads to significant differences in strategy use patterns and reading comprehension. EFL reading teachers are, therefore," advised to investigate the links among these variables and to encourage their students to adopt a dual rather than a single achievement goal".(P.130).

Quite recently, Mieraf (2013) in collaboration with the researcher have conducted a comprehensive study which aims to explore the reading strategies used by Sudanese students at tertiary level. They used the Think - Aloud Protocols and a questionnaire to collect data. It is found that out of eight

common reading strategies only three materialize in the reading activities of the selected sample.

From the above empirical studies on reading strategies, one may conclude that there is a strong relationship between reading strategies used by readers and their proficiency level. It is also strongly demonstrated that there are indeed differences between successful readers and less successful readers in terms of strategy use. Overall, successful readers or proficient readers appear to be using a wider range of strategies. Furthermore, it becomes clear that these successful readers use strategies more frequently than poor readers. It is also demonstrated that successful readers know when and how to implement reading strategies for different reading tasks.

One common denominator among these empirical studies is the use of interviews, questionnaires and/or Think-aloud Protocols as a means for data collection. Interviews and questionnaires are commonly conducted during or after the task. In the case Think-aloud Protocols, researchers require the subjects to verbalize their thoughts and say aloud everything that occurs to them while performing the task of reading (Garner, 1987). This technique "requires the reader to stop periodically, reflect on how a text is being processed and understood, and relate orally what reading strategies are being employed" (Singhal, 2001.p10). In fact, Think- aloud Protocols involve the overt verbal expression of the normally covert mental process readers engage in when constructing meaning from text. Singhal (2001) admits that verbal protocol has made a significant contribution to the understanding of

reading and provides rich descriptions of ways in which less successful readers differ from proficient readers.

Generally speaking, the above literature review reveals that researchers in different parts of the world have shown great interest in the study of reading strategies. Indeed, hundreds of investigations have been launched around the globe with the ultimate objective of identifying the best strategies that may help students become effective and efficient EFL/ESL readers. In the Arab world, where English is still the main medium of instruction in many higher and technical education institutes, such studies on reading strategies remain widely unexplored. This is indeed very unfortunate. Arab researchers are, therefore, sincerely called upon to look into the reading strategies used by Arab learners when they read English, a language that is so vital in today's world of science and technology.

This current study, and hopefully many others that are yet to follow, will investigate the reading strategies adopted by Arab ESP students. It is hoped that this will help to identify the strategies commonly used and those which are not used by this group of learners. Results of this study will promote understanding of the reading processes adopted by these learners and pave the way for solving the many problems that face them while they approach their reading tasks.

Method

Participants

The sample of this study consists of 24 male subjects drawn purposively from the population of first year students in the College of Medical Sciences at Umm-Al-Qura University, Saudi Arabia. The total of this population is 494 students. They are registered in a compulsory ESP course which aims to help them pursue their study through an English medium. This group of students has already learned English for six years (three years at the intermediate and three years at the secondary school) plus one term of an intensive ESP course at the University. The sample of the study is selected from the above population on the bases of their performance in a series of reading comprehension tests conducted during the first term of their ESP course. The sample is formed of the highest 12 plus the lowest 12 scorers in the series of the above mentioned reading tests. Their ages range between 18.5 and 20 years and they all speak Arabic as their first language.

Data Collection Procedures

To collect data for this study, two instruments are used: a 'Questionnaire' and a 'Think-aloud Protocol'. The Questionnaire consists of two parts: the first part is intended to provide background information about the subjects, whereas the second part aims to identify the reading strategies claimed to be commonly used by the participants while reading a scientific text relevant to their specialization. This part includes 20 items classified under three headings: Pre-reading, While-reading, and Post-reading phase. (This questionnaire is administered at the beginning of the experiment).

The other instrument, i.e., the Think-aloud Protocol aims to capture the overt, verbal expressions of the normally covert mental processes readers engaged in when trying to construct meaning from texts (Oxford, 1990). In this study, the Think-aloud Protocol is conducted in a series of sessions during which the participants are asked to think aloud in front of a tape recorder which captures their reflections on how the text is being processed and understood.

The text used in this study is an excerpt from Harbor (2005) Bio-Chemistry, a textbook widely adopted in teaching bio-chemistry in colleges of medicine in the Arab World. The text selected deals with protein structures and it is presented to the subjects in its original form without any modification. There are 542 words in this text and it includes some illustrations, headings, subheadings, drawings and tables. Staff from the bio-chemistry department confirm that this text represents material commonly encountered by medical students during their pre-medical course of study.

Data Analysis

Data generated through these two instruments, i.e., the Questionnaire and the Think-aloud Protocol, are analyzed quantitively using an SPSS 12 computer program. Frequencies and percentages are calculated straight away for all Questionnaire items. The Think-aloud Protocol responses are analyzed qualitatively. In the first step, the entire playback of the Think-aloud Protocol is coded into strategies by following an initial strategy coding scheme. This coding scheme is created by adapting the taxonomy provided by Oxford (1990). Identified strategies are eventually presented in the form of

frequencies and percentages. Frequency and percentage calculations for responses generated through the two instruments are then used to help in comparing the self-reported data generated through the Questionnaire with the actual reading process in terms of reading strategy use reflected in the Think-aloud Protocol.

Results

Analysis of data generated through the Questionnaire and Think-aloud Protocol has revealed some interesting results. In the first place, it is found that the 12 best scorers in the reading comprehension tests, hereafter 'the good readers', differ both quantitatively and qualitatively from their counterparts, the low scorers, and hereafter ' the poor readers' in terms of reading strategy use. It is also revealed that both 'good readers' and 'poor readers' are very limited in their strategy use and a considerable number of effective strategies never materializes neither in the subjects' self-report nor in their Think-aloud Protocols.

Furthermore, the analysis reveals that the subjects (both good and poor readers) employ much less reading strategies in-to-to than what they self-reported in response to the Questionnaire. The following sections will show the details of these findings.

Results of the Questionnaire
Pre-reading Strategies

The first four items of the Questionnaire are intended to generate data pertinent to pre-reading strategies. Broadly speaking, these are strategies related to activating background

knowledge and understanding what the text is about. Table-I below reveals the strategies reported to be used by the subjects during this phase.

Table-I: Percentage of Pre-reading Strategy Use by 'Good' and 'Poor' Readers

Strategy	% of use by good readers	% of use by poor readers
1-Relate the title and illustration to the text	66.6%	41.7%
2-Skimming	41.7%	25%
3-Reading the first sentence	50%	25%
4-Thinking about previous knowledge.	75%	41.7%

From the above table, it is revealed that the group of subjects termed 'good readers' claim that they use the pre-reading strategies more often than their counterparts, 'the poor readers'. For instance, it is shown that (66.6%) of the good readers report that they relate the title and illustrations to the text content, while only (41.7%) of the 'poor readers' report they use this strategy. Skimming is said to be used by (41.7%) of the 'good readers' compared to (25%) of the 'poor readers'. Reading the first sentence of each paragraph strategy is employed by (50%) of the 'good readers', but only (25%) of the 'poor readers' adopt this strategy. With regard to 'thinking about previous knowledge, (75%) of the 'good readers' claim that they use this strategy compared to (41.7%) of the 'poor readers'.

While-Reading Strategies

This section includes eleven items aimed to identify strategies said to be employed in the while-reading phase. Data related to this section are presented in Table-II below.

Table-II: Strategy Use of the Participants for the While-reading Phase

Strategy	% of use by good readers	% of use by poor readers
5-Look up every unknown word in the dictionary.	33.3%	75%
6-Check the dictionary only for important words.	75%	66.6%
7-Contexual guessing	75%	25%
8-Using grammatical clues to guess the meaning.	66.6%	25%
9-Skipping unknown words.	66.6%	33.3%
10-Rereading a sentence if not understood.	66.6%	33.3%
11-Translating the text word-for-word.	25%	66.6%
12-Think-aloud when reading	8.3%	25%
13-Taking notes on important points.	33.3%	8.3%

Strategy	% of use by good readers	% of use by poor readers
14-Making guesses about what will come next based on information already given.	50%	8.3%
15-Relating the text to background knowledge.	33.3%	25%

As shown in the above table, items 5 and 6 are both related to dictionary use strategies. Responses to these items reveal that (33.3%) of the 'good readers' look up every unknown word in the dictionary and (75%) of the 'poor readers' claim that they do look up every unknown word in their dictionary. Furthermore, (75%) of the 'good readers' confirm that they check an unknown word in their dictionary especially if this word seems important or crucial to the understanding of the text. On the other hand, (66.6%) of the 'poor readers' admit that they check important words in the dictionary. With reference to contextual guessing, (75%) of the 'good readers' claim they attempt to guess the meaning of new words from context, whereas only (25%) of the other group claim that they try to guess meaning of words from context. Furthermore, (66.6%) of the 'good readers' report they use grammatical clues to guess the meaning of new words compared to (25%) of the 'poor readers' who claim that they use this strategy.

In response to item No. 9, (66.6%) of the sample of the 'good readers' admit that they skip some unknown words, whereas (33.3%) of the 'poor readers' claim that they use this

strategy. (66.6%) of the 'good readers' say that they reread a sentence when they do not understand its meaning the first time. On the other hand, only one third of the 'poor readers' group say they reread sentences to understand them better. More than two thirds of the 'poor readers' group admit that they always attempt translating the text word-for-word, whereas only one fourth of the 'good readers' confirm that they resort to 'word-for-word translation.

About only (8.3%) of the 'poor readers' say that they think aloud when reading, but (25%) of the 'good readers' claim that they think aloud while reading. (33/3%) of the 'poor readers' mention that they take notes on the important points in the text compared to (8.3%) of the 'poor readers'. Furthermore, half of the 'good readers' assume that they make guesses about what will come next based on the information already given in the text, whereas only about (8.3%) of the 'poor readers' attempt such guessing strategies. With reference to relating the text to background knowledge to consolidate important information, (33.3%) of the 'good readers' and (25%) of the 'poor readers' point out that they attempt this strategy.

Post-reading Strategies

This final section of the Questionnaire attempts to pinpoint the reading strategies claimed to be used by the subjects during the last phase of the reading process. Table-III highlights the main strategies adopted by the participants.

Table-III: Strategy Use of the Participants for the Post-reading Phase

Strategy	%of use of good readers	% of use by poor readers
16-Classifying words according to meaning.	33.3%	16.7%
17-Classifying words according to grammatical categories.	33.3%	8.3%
18-Summarizing the main points in the text.	41.6%	8.3%
19-Rereading the text to make up for comprehension failure.	58.3%	33.3%
20-Rereading the text to remember the important points.	41.7%	33.3%

The findings in this section indicate that (33.3%) of the 'good readers' say they classify words according to their meanings, whereas only (16.7%) of the 'poor readers' mention that they follow this strategy. Furthermore, (33.3%) of the 'good readers' note that they classify the words according to their grammatical categories compared to only (8.3%) of the 'poor readers'.

On another level, (41.6%) of the 'good readers' claim they summarize the main points in the text, whereas only (8.3%) of the 'poor readers' point that they summarize the main ideas of the text they read. Furthermore, (58.3%) of the 'good readers' and (33.3%) of the 'poor readers' claim that they reread the text to make up for comprehension failure. Finally, (41.7%) of the 'good readers' and (33.3%) of the 'poor readers'

acknowledge that they reread the text to remember important points.

The Results of the Think-aloud Protocols

The Think-aloud Protocol technique is used, as mentioned earlier, to identify the actual strategies implemented by the subjects when they are involved in the reading process. Analysis of these protocols reflects considerable discrepancies between the strategies claimed to be used and those actually put into practice by the subjects when they approach their reading task.

Out of the four pre-reading strategies claimed to be used by the subjects in response to the Questionnaire, only two have materialized in the Think-aloud Protocol. These are reading the title and imagining what the text might be about, and thinking about the previous knowledge on the topic of the text. It is also observed that the 'good readers' use these strategies more often than the 'poor readers'. More specifically, it is found that (58.3%) of the 'good readers' read the title and try to relate it to the text compared to (33.3%) of the 'poor readers'. As with reference to thinking about previous knowledge and relating it to the text, this strategy is used by (41.7%) of the 'good readers' compared to (33.3%) of the poor readers. The following table shows the actual strategies used in the Pre-reading phase.

Table-IV: Strategy Use of the Participants for the Pre-reading Phase as Shown in the Think-aloud Protocol

Strategy	% of use by good readers	% of use by poor readers
1-Reading the title and relating it to the text.	58.4%	33.3%
2-Thinking about previous knowledge.	41.7%	33.3%

Considering the While-reading strategies, it is found that the subjects (both good and poor readers) rely heavily on their dictionaries. It is found that (83.3%) of the 'poor readers' and (66.6%) of the 'good readers' resort quite often to dictionaries to check the meaning of words. Another popular strategy is 'the word-for-word translation' which is used by (83.3%) of 'poor readers' and by (33.3%) of the 'good readers.'

Rereading a sentence and assimilating the text with background knowledge are used by the two groups, but with different levels of frequency during the While-reading phase. Rereading a sentence to enhance understanding is used by (58.4%) of the 'good readers' and by (41.7%) of the 'poor readers'. The 'good readers' seem to assimilate the text with background knowledge more often than their counterparts, the 'poor readers'. Indeed, (66.6%) of the 'good readers' apply this strategy compared to (17.7%) of the 'poor readers'. The following table shows strategies used by the subjects during the While-reading phase.

Table-V: Strategy Use of the Participants for the While-reading Phase as Reflected in The Think-Aloud Protocol

Strategy	%of use by good readers	% of use by poor readers
1-Using the dictionary to check new word.	66.6%	83.3%
2-Translating word-for-word.	33.3%	83.3%
3-Relating the text to background knowledge.	66.6%	17.7%
4-Re-reading a sentence to enhance understanding.	58.4%	41.7%

With reference to Post-reading strategies, the Think-aloud protocol reveals that these strategies are the least used by both groups. More specifically, only two strategies are used in this phase. These are rereading the text to remedy comprehension failure and summarizing the main ideas. The former is used by (58.4%) of the 'good readers' and by (41.7%) of the 'poor readers'. The latter, i.e., summarizing the main ideas used by (17.7%) of the 'good readers' but none of the poor readers has attempted this strategy. The following table shows the strategies actually used during the Think-aloud Protocol in the Post-reading phase.

Table-VI: Strategy Use for the Post-reading Phase As Reflected In The Think-Aloud Protocol

Strategy	% of use by good readers	% of use by poor readers
1-Re-reading the text to remedy comprehension failure.	58.4%	41.7
2-Summarizing the maid ideas.	17.7%	00%

Findings and Discussion

When the data generated through the Questionnaire and the Think-aloud Protocols are compared, one may clearly observe the gap between the self-reported information and the actual practice of the subjects with regard to their reading strategy use. Differences between 'good readers' and 'poor readers' in terms of type and frequency of strategy use are also documented. In the self-reported data, the subjects claim that they use a relatively wide range of reading strategies at various reading phases; however , when it comes to actual practice , it is revealed that the subjects have used a limited number of reading techniques, and even these are used with a limited level of frequency.

Indeed, out of more than twenty reading strategies claimed to be used by the subjects in the various stages of the reading process, only eight have materialized in their actual reading practice. This difference can be partially attributed to the natural gap that normally exists between theory and practice. Another reason for this discrepancy could be related to the inability of the subjects to verbally express the covert mental processes readers engaged in when trying to extract meaning from the reading text.

During the pre-reading phase, the subjects have claimed that they tend to relate the title to the text content, practice some skimming, read the first sentence in each paragraph and think about previous knowledge. However, only two of these strategies are realized during the Think-Aloud protocols; namely, reading the title and relating it to the text content, and thinking about the previous knowledge.

During the While-reading phase, the subjects admit that they use their dictionaries, resort to word-for-work translation, reread sentences and assimilate the text with background knowledge. During the Think-Aloud Protocols, however, only a few of these claims are confirmed. It is confirmed that the subjects rely quite heavily on their dictionaries, reread sentences, and oftentimes resort to word-for-word translation.

During the Post-reading phase, the subjects, in their responses to the Questionnaire, indicate that they classify words according to their meaning and according to their grammatical structures. Furthermore, the subjects state that they summarize the main ideas and sometimes reread the text to remember important points and to make up for comprehension failure.

During the Think-aloud Protocols, however, it is found that only two of the post-reading strategies have been put into practice. These are rereading the text to, perhaps, remedy comprehension failure, and summarizing the main ideas. The latter is used by only (17.7%) of the 'good readers' but by none of the 'poor readers'.

The above findings can be cited to answer the first question of this study which inquires about the reading strategies that are commonly used by ESP students in the College of Medical Sciences at Umm-Al-Qura University.

Findings generated through the Questionnaire and the Think-aloud Protocol also indicate that the participants from both groups, i.e. ' good readers' and 'poor readers' do not always use or even consider using certain effective reading strategies. Indeed, a considerable number of the subjects tend

to use some of the most unproductive strategies, such as their heavy reliance on the dictionary, and word-for-word translation. Such poor strategies are likely to reflect negatively on the students' reading comprehension and may lead to boredom and frustration.

It has become clear that these ESP students need to develop more effective reading strategies to help them cope with the increasing demands of their academic reading. These may include relating the illustrations, pictures and background knowledge to the text they read. Skimming, using dictionary parsimoniously, guessing, remembering a word through situations, and rereading to enhance understanding, being careful about how the text is organized, making notes and summaries of important information and classifying words according to their meanings and grammatical categories are also strategies that may help ESP students enhance their comprehension .Indeed, Effective use of these strategies is bound to help students to improve their reading ability and to accomplish their cumbersome academic tasks successfully.

The above list of reading strategies could be cited to answer the second question of the study which asks for the kind of strategies that ESP students need to use to improve their reading skills.

As for third the question which inquires about differences between 'good' and 'poor' readers in term of their reading strategy use, it is now clear that 'good readers' use more strategies than the 'poor readers' and that 'good readers' use these strategies more often than their counterparts.

Conclusion and Recommendations

This study is launched with the objective of identifying the reading strategies commonly used by a sample of ESP students in the College of Medical Sciences at Umm-Al-Qura University. The study also aims to point out which strategies that the students need to develop in order to pursue their academic studies successfully and to get the maximum out of the texts they read.

Results obtained through a Think-aloud Protocol reveal that the subjects actually use an astonishingly limited number of reading strategies. Out of 20 strategies claimed to be used by the subjects in response to a Questionnaire, only eight reading strategies have been actualized during the Think-aloud Protocol. It should be pointed out that some of the strategies claimed to be or actually used by the subjects are really poor strategies and are not likely to yield proper comprehension. Strategies such as translating word-for-word and depending heavily on dictionary are just frustrating and conducive of boredom.

To encourage students to use effective reading strategies, the ESP instructors may play a key role through working out simple exercises to elicit information through targeted strategies. These exercises can be divided in accordance with the reading stages.

During the Pre-reading stage, for instance, the activities should be geared to introduce the students to the target text, provide relevant background knowledge and activate necessary schemata. Previewing a text with the students, should be planned to capture students' interest and help them

approach the text in a purposeful manner as the discussion should attract them to think about the questions or points raised in the text. In addition, Pre-reading activities should include discussion of the text type, brain storming, reviewing familiar scientific points or facts in the text, considering illustrations and titles, skimming and scanning.

While-reading exercises could be manipulated to develop effective reading strategies, improve students' control of the target language, and decode difficult reading text passages. Assisting ESP learners to employ while-reading strategies is observed by many researchers as a difficult task as different learners need different strategies. Nevertheless, the teacher can outline the most valuable strategies for his students, explain which strategies individual students most need to implement, and provide concrete examples in the form of guided reading activity sheets (Barnett, 1988). Such exercises may include guessing meaning, using context clues, word formation clues or cognate practice, analyzing reference words to predict text content, and using the dictionary only when necessary.

Finally, Post-reading exercises should focus on checking the students' comprehension and lead them into deeper analysis of the text. Since the goal of scientific reading is not simply to memorize the text, but rather to generate new information from what one already knows, ESP reading activities must go beyond shallow comprehension skills to help the students recognize that different strategies are suitable for different texts. Scanning and summarizing, for example, are appropriate strategies to use for long scientific passages, whereas predicting and following text cohesion are effective strategies for shorter texts. Group discussion and rereading a

text may help students to focus on issues they do not comprehend fully or correctly during the first reading.

Given that one of the most important objectives of teaching reading is to help students develop as strategic and independent readers, several of the above mentioned strategies can be taught systematically according to a two-fold plan. In the first place, strategies should be taught via direct explanation, explicit teacher modeling, and extensive feedback. Students should be fully acquainted with the most productive reading strategies, where and when they can be used and how they are used. Second, ESP readers, particularly the poor or less capable ones, should be given intensive and direct strategy training for a reasonably long period. Gaskin (1994) reserves that teaching of strategies without direct explanation and explicit teacher modeling would not have a long-term effect on students and would not help them to develop as strategic readers.

Recommendations for Future Research

In future research, it is recommended that the number of participants and the text that will be used during the Think-aloud Protocol sessions be increased to give more reliable results.

Since this study reveals significant discrepancy between the self-reported data and the protocol data regarding strategy use, the reasons of these differences can be adequately investigated in future research. However, improved Think-aloud Protocols can be recommended as suitable methodology since they allow objective observation of both ongoing behavior and the mental images created by the participants.

Since this study focuses on reading strategies used by male Medical sciences students, a parallel study should be conducted in the near future to elicit strategies used by female ESP learners in the same college. Such a study is likely to yield some interesting results.

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Appendix 1 THE QUISTIONNAIRE

Please, Tick the Strategy you commonly use in the pre-reading, while-reading and post-reading stages

Pre-reading Strategies

Strategy		
1-Relate the title and illustration to the text		
2-Skimming		
3-Reading the first sentence		
4-Thinking about previous knowledge.		

While-reading Strategies

Strategy		
5-Look up every unknown word in the dictionary.		
6-Check the dictionary only for important words.		
7-Contexual guessing		
8-Using grammatical clues to guess the meaning.		
9-Skipping unknown words.		
10-Rereading a sentence if not understood.		
11-Translating the text word-for-word.		
12-Think-aloud when reading		

Strategy		
13-Taking notes on important points.		
14-Making guesses about what will come next based on information already given.		
15-Relating the text to background knowledge.		

Post-reading Strategies

Strategy		
16-Classifying words according to meaning.		
17-Classifying words according to grammatical categories.		
18-Summarizing the main points in the text.		
19-Rereading the text to make up for comprehension failure.		
20-Rereading the text to remember the important points.		