Offline/Online Reading Strategies of Yemeni Engineering Professionals

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Abstract

Engineering Professionals are often perplexed by the difficulties that they experience while reading offline/online engineering materials. The causes of these difficulties are many and such difficulties require highly developed techniques to reduce them. These problems are many-sided and must be discussed from more than one point of view if a satisfactory solution is to be secured.

The present study focuses on the use of the offline/online reading strategies by Yemeni Engineering Professionals (YEP).Therefore the present study aims to determine the attitudinal as well as intellectual factors that affect the offline/online reading strategies. It then compares and contrasts the online/offline reading strategies used by these engineers at the workplace. The findings of this study will help to align the teaching of reading strategies and reading skills in the classroom environment with the needs at the workplace. A questionnaire survey method is used to gather data in this study. The questionnaire taps three different types of information: global reading strategies, problem solving strategies and support strategies.

KEYWORDS: Reading Strategies, Offline/Online Reading Strategies, Language Learning, Workplace.

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1. INTRODUCTION

1.1 Background of the Study

Reading is an essential skill for learners of English to ensure success in learning. With strengthened reading skills, learners of English tend to make greater progress in other areas of language learning. Reading should be an active, fluent process that involves the reader and the reading material in building meaning.

Reading strategies are conscious actions that readers take in the reading process to comprehend the reading texts. The use of reading strategies can be observable behavior such us taking notes while reading to help comprehend the reading texts, reading aloud when the text becomes difficult, underlining or circling information in the text, and using reference materials for example a dictionary to help understand the content in the text.

The use of reading strategies can also be unobservable mental process, such as thinking about what one knows to help understand the content, critically analyzing and evaluating the information presented in the text, and trying to guess what the content of the text is about when reading.

According to (Paris and Lindauer, 1982) "readers should make decisions about taking proper actions for reading based on three variables: task dimension, limited cognitive abilities and motivation". It is also imperative "to distinguish reading strategies from reading skills. Reading strategies are used deliberately while reading skills are automatic" (Carell, Gajdusek , and Wise, 1998; p.107).

Offline/Online Reading strategies are classified differently by different researchers according to the variables that they intended to explore. Reading strategies can be categorized into two groups, global reading strategies and local reading strategies.

To date much research has been conducted to investigate the reading strategies of Engineering Professionals whose first language (L1) is Arabic and that of second language learners (L2) of English. Some of these studies have investigated the effect of teaching the strategies used by L1 learners to L2 learners. Comparisons have been done to elicit the most appropriate methodology to be used in language classes. Such research has had pedagogical implications in reading classes for L2 learners.

Strategic awareness and monitoring of the comprehension process are important aspects of skilled reading (Sheorey and Mokhtari,2001). Such awareness and monitoring is known as "metacognition" which entails knowledge of strategies for processing texts, the ability to monitor comprehension, and the ability to adjust strategies as needed. According to Sheorey and Mokhtari (2001) , it is the combination of conscious awareness of the strategic reading processes and the

actual use of reading strategies that distinguishes the skilled from the unskilled readers. Researches in L1 and L2 show that successful reading strategy use is dependent on whether a strategy is used meta cognitively. Studies have also shown that unsuccessful Engineering Professionals lack this strategic awareness and monitoring of the comprehension process. These less successful Engineering Professionals ought to be helped to acquire reading strategies that have been found to be successful (Mokhtari and Reichard, 2002).

Shoerey and Mokhtari (2002) have conducted significant research on the identification of offline/online reading strategies of twelve (12) learners. They developed an instrument known as the survey of reading strategies (SORS). The survey of offline/online reading strategies (SORS) focuses on offline/online reading strategies used in academic reading. The SORS survey was developed by Mokhtari for university students who are native and non-native English speakers. The SORS was based on a separate offline/online reading strategy developed for non-native speakers of English.

SORS was used to measure the type and the frequency of reading strategies that the students perceive they are using while reading academic materials. The SORS, which is developed by Mokhtari is composed of 28 items with 5- point likert-scale ranging from 1(never) 5 (always).

The SORS measures three broad categories of reading strategies, namely,Global Reading Strategies (GLOB), problem solving strategies (PROB) and support reading strategies (SUP). A brief description of these strategies is as follows:

- Global reading strategies (GLOB): those intentional, carefully planned techniques by which learners monitor or manage their reading such as having purpose in mind when reading, such as previewing the text as to its length and organization.
- Problem solving strategies (PROB): actions and procedures readers use while working directly with the text. These are localized, focused techniques used when problems develop in understanding textual information, such as adjusting the speed of reading when the material becomes difficult or easy.
- Support reading strategies (SUP): basic support mechanisms intended to aid the reader in comprehending the text, such as circling information in the text highlighting textual information or referring to a dictionary.

The table below displays the three subcategories of the SORS and the specific items.

Table 1:Sub-categories of SORS (Mokhtari ,2001,2004) and specific items

Strategy category	Item No.
Global reading strategies(12 items)	1,2,3,5,7,11,16, 19, 20, 22, 23, 26
Problem solving strategies(8 items)	6, 8, 10, 13, 15, 18, 24, 27
Support reading strategies(8 items)	2, 4, 9, 12, 17, 21, 25, 28

Note: Total = 28 items

Results of the research revealed that native English–speaking and ESL students display all of the strategies included in the survey. It was found that the ESL students reported using a greater number of support offline reading strategies. There was a significant difference in the use of the strategy of underlining information in the test for ESL students. The female ESL students reported using the strategy more frequently than the male ESL students. Secondly, both groups attribute the same order of importance to categories of reading strategies in the survey, regardless of their reading ability or gender. Thirdly, both native English – speaking and ESL students of higher reading ability show comparable degrees of higher reported usage of offline reading strategies in comparison to students with lower reading ability. Native English-speaking students of higher reading ability also seem to consider support offline reading strategies more valuable compared to non-native English-speaking students with lower reading ability.

Mokhtari and Sheorey (2008) later explained that skilled readers of FL and SL were characterized as globally aware. They were able to think about the reading process, to focus on planning, monitoring, goal-setting and assessment strategies, and to promote global skills as well as reading comprehension. Highly proficient students appear to use more and a greater variety of strategies in the reading of English texts. Kummin and Rahman (2010) reported that ESL university students from Kebangsaan, Malaysia, who were proficient in English often used a variety of strategies, but those who were less proficient had little knowledge of metacognition. They were not able to use suitable strategies to evaluate their own reading comprehension.

Talebinejad et al., (2015) explained that non-natives used "memory and cognitive strategies" more than natives. They added that using more strategies by non-native readers can be attributed to the factor of transfer and knowledge of their native language, i.e. "L2 learners use their L1 as a resource to understand an L2 reading text" (Belet & Gursoy, 2008). Proficient non-natives can use strategies of two

languages, their first and second languages, and transfer them from L1 to L2. As a result of transfer, non-natives can use strategies more frequently than natives.

1.2 Statement of the Problem

Most of researchers assume the importance of the use of reading strategies; however, there is a debate as to the most effective reading strategies that have to be adapted in the reading classrooms. Searching the literature has shown that Yemeni Engineering Professionals use offline/online reading strategies while reading engineering materials. They face problems in terms of offline/online reading, and that's because they do not have enough information as to the appropriate use of offline/ online strategies. Many YEP have reported that they have spent a long time to comprehend the content of the texts especially when reading in foreign language(s). Once we understand the importance of reading strategies, particularly the offline/ online reading strategies, we will begin to visualize answers or solutions for such problems.

In light of the above discussion, the present work proposes to investigate the use of offline/online reading strategies which are used by Engineering Professionals, i.e. Yemeni Engineering Professionals so as to develop Engineering Professionals' awareness of the use of appropriate offline/online reading strategies. We plan to carry out an overall inclusive investigation to discover what kind of problems the Engineering Professionals face when reading academic/engineering materials, and what are the possible solutions for these problems.

1.3 Purpose of the Study

The primary aim of this study is to obtain a better understanding of the offline/online reading strategies adapted by Yemeni Engineering Professionals (YEP). This goal will be achieved through addressing the following research objectives:

1. To investigate the use of offline/online global strategies among YEP.
2. To determine the problems faced by YEP while reading academic engineering materials.
3. To investigate the use of offline/online problem-solving strategies.
4. To identify appropriate solutions for these problems.

1.4 Research Questions

The research was guided by the following research questions:

1. What are the offline/online reading strategies most often used by Yemeni Engineering Professionals (YEP)?
2. Are there any similarities in offline/online reading strategies used by Yemeni Engineering Professionals (YEP)?

3. What are the problems faced by Yemeni Engineering Professionals (YEP) in terms of offline/online reading?
4. How these problems can be solved?

1.5 Significance of the Study

This research will provide a brief description on the various offline/online reading strategies used by YEP. To Engineering Professionals, the proposed research serves as a guide to get them equipped with the necessary reading strategies and reading skills to function effectively at the workplace. It will also help Engineering Professionals to read and understand what they are reading at the same time.

As to teachers, the proposed research will help them improve appropriate teaching methods in the reading classes. The need to facilitate offline/online reading strategies is due to the dearth of information available on texts and the need for language leaning Engineering Professionals to assess such materials for specific purposes. Therefore, the present study hopes to bridge the gap between what is taught in the reading classrooms and the Engineering Professionals' needs.

1.6 Limitations of the Study

The present study focuses on the offline/online reading strategies used by Yemeni Engineering Professionals (YEP). Due to the fact that the study confines itself to studying one sample group that is Engineering Professionals, particularly Yemeni Engineering Professionals, the present study is limited in its scope and generalizability of results to participants similar to the present one, i.e. the study is generalizable to Yemeni Engineering Professionals.

2. LITERATURE REVIEW

2.1 Difficulties in Reading Scientific Texts

Difficulties in reading scientific texts can rise due to numerous factors. Ignoring text organization and lacking the specific vocabulary are just few factors. Imagine if these two reasons are coupled with lack of proficiency in the foreign language of instruction, of course, things will be tougher for engineering to hold. Reading scientific texts in a foreign language complicates the situation to learn for science learners who find themselves overwhelmed by obstacles on both sides. On the one hand, they have to understand the new concepts in their subject matter. On the other hand, they have to know the basic elements in the foreign language system that is used as the medium of presentation. Besides, they have to be aware of the conventional rhetoric of science in order to cover all the aspects (knowing the language, knowing the new concepts in their field, and knowing the rhetoric of scientific texts) that help them comprehend effectively. Wiggin (1977) reports that

"many foreign engineering professionals lack the ability or training to understand the implicit messages that result from an interaction of syntax and rhetoric" (p.4).
This is of course applied to engineering professionals who study English as their subject matter. In this study, the engineering professionals are unfortunately unable even to understand the 'explicit' messages, which are indicated by 'explicit' cohesive markers. It is so not because they do not study English, but as we understood from them, it is because they did not study English as it should be either as GE or as EST. In order to read efficiently in English, engineering professionals need knowledge of how the English language is used in scientific writing. This includes:
-Knowledge of language itself, its grammatical structure and vocabulary, which are generally found under the heading of GE.
-Knowledge of how these features of language are used in scientific context and in the presentation of information and this can be found under the heading of EST.

2.2 Definition of Reading

The most common definition of reading is that it is a 'cognitive' activity where a kind of 'involvement/interaction' between the reader and the text is taking place to get the meaning out. So, reading is an activity in which readers have to extract and construct meanings from written texts and to dependent on many psychological, linguistic, and contextual factors. In this respect, Widows (1979) (as cited in Carrell et al., 1988) views the reading process (as not simply a matter of extracting information from the text. Rather, it is one in which the reading activates a range of knowledge in the reader's mind that may be refined and extended by the new information supplied by the text. (p. 56).

In the present study, we will most of all focus on one particular kind of reading which has to do with 'reading the lines' or 'reading in scientific English'. It is 'reading with comprehension'. We believe that exposing EFL science learners to instructional information on how to read with comprehension is beneficial for them to overcome their difficulties in reading scientific texts in English.
Indeed, since reading comprehension above sentence-level (discourse level) has moved to another dimension, science learners should be equipped with adequate and possible ways to access discourses. This new consideration becomes the main concern of linguists to help engineering, understand such types of discourse efficiently. Reading with understanding the whole discourse brings to the surface some hidden difficulties that are generally faced by EFL learners who really need to read their academic writings successfully. Hence, understanding the kind of knowledge involved in constructing these linguistic units should be made clear to non-natives to read with maximum comprehension.

2.3 The Reading Comprehension

In this study, we want to spotlight reading that is accompanied by understanding and comprehending a piece of language, i.e., the 'making sense' of what one reads. Most of the time, reading comprehension is accustomed to be seen as the ability of the reader to answer direct questions that usually follow certain texts, and which contain the same words that are found in the text. However, some studies (Widdowson, 1979; Nuttal, 1982; Smith, 1982) suggest that the ultimate purpose from reading is actually more to comprehend what to read than to merely answer questions. Despite this, the questions are in fact important elements for comprehension because they work as tools for assessing one's ability to comprehend. For this reason, it has been thought that it is likely more beneficial if questions are put before one reads the text to make reading both a 'purposeful' and a more 'meaningful' activity (Herr - Augustine et al, 1982). In the same vein, Smith (1982, p.166) points out that "the twin foundation 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."

Being able to comprehend is an essential element in good reading because it indicates the ability of the reader to paraphrase, synthesize the content, answer questions about materials, make predictions and inferences, and of course understand the main ideas and facts.

In this respect, reading comprehension as an aspect of language learning is defined as a "careful reading" (McConkie, 1973). That is, when one reads is not only to comprehend the material in hands so that to answer the questions following it, but it is also to memorize the information he gets from the text to be used later on as his background knowledge in a particular topic.

We can say that it is due to the new tendency; that is, the consideration of reading as an 'active skill', linguists such as Person & Johnson (1978) define reading comprehension as "any reader's interaction with the text". Comprehension, as a matter of fact, is an outcome of a successful interaction between a reader and a writer who mediates through the text. It is evident that one facet of interaction is establishing the logical connections between ideas in a text. According to Pearson & Johnson (1978), readers comprehend a text only when they have understood these connections for reformulating them in another fashion, paraphrasing. In this way, inferences are considered as critical acts of comprehension: if readers are able to identify the relationships between ideas in a text and the logical connectors that indicate them, they will be able to infer the conceptual and structural gaps in the text. Foss & Haykes (1978) claim that if reading comprehension is not based

on syntax, semantics, discourse, and pragmatics, it will definitely lead to short-term retention and memorization.

2.3.1 Reading Comprehension with EFL Engineering professionals:

In Yemen, EFL engineering students are seen as to solely develop the engineering' ability to answer exam questions. Because of this, their reading skills are limited to just answering exam questions based on the comprehension of a text at the end of each semester.

In an attempt to improve the comprehension skills, some studies try to find out what skills and strategies that are commonly used by good engineering professionals when processing a text. They suggest that it is possible to teach students with reading problems like engineering professionals, for instance, how to develop reading skills and strategies that are proved to be used by good engineering professionals. These skills and strategies should be taught through explicit and specific reading constructions. In the following section, we will present one model of reading, which is thought to be of great usefulness for EFL engineering professionals who need to read in English.

2.3.2 Reading as a Communicative Process

In a series of four books under the title of *Reading and Thinking in English*, Oxford University (1986) provides in the third book *Discovering Discourse* an integrated course in reading comprehension for students of English as a foreign language. This book specifically targets students whose main aim is to gain access to information through English because it intends to help them and others read textbooks, works of reference and read in a professional way .

Reading comprehension is seen as a communicative process where the engineering professional communicates something through the text and the reader has to get it by interacting with the text during reading. In order to make readers aware in the process of reading, four reading strategies are introduced. These strategies can help scientific learners to read with comprehension and hence to improve their reading skills efficiently.

2.3.2.1 Understanding Language Patterns

The first strategy for improving the reading comprehension is 'understanding language patterns'. Engineering professionals should first be aware of the language patterns that exist in English in order to understand the message. There are situations where the same message can be conveyed using different means: visually (non-linguistically) or linguistically. In science, as a matter of fact, we can use diagrams, maps, graphs, and pictures to communicate a particular message visually. Likewise, we can use words, phrases, and paragraphs to express

and present ideas and information by means of linguistic elements. In any language, the small linguistic elements are grouped together into different patterns to produce large units. Some of them are meaningful such as words, phrases, and sentences.

However, not all the patterns make sense or can carry meaning. Understanding the conveyed message of a text (its communicative function) can be achieved when the readers are able to understand the meanings of sentences in English. However, reading does not stop at understanding the sentence patterns. In order to present information in a logical way, sentences are usually arranged into larger patterns. It is possible to understand every word in a passage without understanding the message simply because understanding in this case requires knowledge of another level, a discourse level. Comprehending necessitates from engineering to know the logical structure of the whole passage, which depends in the first place on how the writer wants to organize and present the information in it. To succeed in establishing this knowledge, the engineering has to know the expressions that connect ideas together. The logical structure of a passage is generally signaled by these 'textual connectors' which act as signposts to help the engineering to find their way through the passage. In sum, the first strategy for improving reading comprehension can be summarized as the following: "Recognize patterns of language inside the sentence and between sentences by increasing your understanding of vocabulary, grammar and textual connectors" (Oxford, 1986, p.6).

2.3.2.2 Understanding by the Use of Context

Occasionally, there are situations where engineering professionals meet words or phrases they do not know, and to overcome such a problem, there are some strategies. One of them is to 'deduce/infer' the meaning of the unfamiliar words and phrases by referring to the neighboring words and phrases that engineering professionals know. The engineering professionals can actually benefit from the 'linguistic context' (co-text) of the text by reference to the grammar and connectors in the sentence and within the paragraph. Understanding the relation between the known part of the context and the unfamiliar part helps engineering professionals deduce and guess the meaning of the unknown elements.

In brief, the second strategy for improving reading comprehension can be summarized as the following: "Use the information from the context to discover the meaning of unfamiliar words or phrases and to help choose the appropriate meaning from the dictionary" (Oxford, 1986, p.7).

2.3.2.3 Reading with Prediction

Insofar, the above two strategies will help engineering professionals to read more 'accurately'. To read more 'fluently', there is another technique that should be used by EFL learners, it is to 'predict' as possibly as one can about what he is reading. The first thing to do is to benefit from the 'title' of the written material (book, article, or passage) because it tells him about the topic. Second, the use of the 'background knowledge' about the topic is another way of possibly and successfully predicting about the content. Third, the 'non-linguistic devices', such as those mentioned in the first strategy, can provide a good context for prediction. On the other hand, using one's knowledge about the context of texts helps readers in making prediction.

In short, the third strategy for improving reading comprehension can be summarized as the following: "Make predictions about the content of a passage based on: titles and subtitles, your own background knowledge of the topic, non-linguistic context: pictures, diagrams, etc. and the linguistic context" (Oxford, 1986, p.8).

2.3.2.4 Purpose in Reading

The final set of strategies that will help engineering professionals to read more 'efficiently' is 'reading with a purpose'. We have seen in the first strategy that writers structure information in a way that suits the purpose they have in mind. Similarly, engineering professionals have a purpose when they read.

Generally, a common purpose in reading is to find out some information opposed to that kind of reading that is for pleasure. In academic settings, the purpose of learners is to find out the needed information that helps them in their studies. One way to make reading an efficient process is the ability to locate information necessary for the reader's purpose in a passage. This sometimes leads the engineering professionals to ignore or pass by what is not relevant to his purpose. Reading with purpose shows the possibility that one passage can be read differently by two people simply because they have different purposes in mind. In a few words, the fourth strategy for improving reading comprehension can be summarized as the following: "Have a clear purpose before reading; locate the parts of a passage which are relevant to your purpose" (Oxford, 1986, p.9).

In short, a good recipe to read 'accurately, fluently, and efficiently' should include the following ingredients:

(1)Understand language patterns and the use of context.

(2) Use the topic to read with prediction.

(3) And do not forget to read with a purpose.

2.4 Reading as an Important Skill:

Reading is an important skill to help people learn from human knowledge and experience. Through reading, knowledge has greatly contributed to the growth of mankind. Reading is the fastest and simplest way to raise people's educational level. Reading is like opening the door of understanding to human' spats, where it can serve as a looking glass for our present. Reading also stimulates the development of brain cells, reinforces language skills, enhances organizational abilities, improves one's temperament and poise, and provides strength to endure frustration. In short, reading is the best and only way of enabling humans to absorb new experience and replace old views.

2.5 The Perspectives of Reading

To help students derive meanings from a text, Engineering professionals have to understand the process of reading. Reading can easily be defined as the process in which a person receives and interprets a message from printed materials. Reading is a process of how information is processed from the text into meanings, starting with the information from the text, and ending with what the reader gains. Goodman (1976) and Smith(1973) indicated that reading is a language process, not merely the sum of various decoding and comprehension sub skills. In short, reading is the process of reconstructing the author's ideas and information. Reading was traditionally viewed as a passive process in which the readers simply decode the written symbols without bringing their own knowledge to interact with the text (Clarke & Silberstein, 1977; Rudd ell, 1976). Alderson (2000) called these readers passive decoders of sequential graphic-phonemic-syntactic-semantic systems. But after the emergence of the psycholinguistic model of reading (Goodman,1976; Smith, 1971; 1973), research on reading showed that reading is actually an active process, in which the reader creates meaning from the printed words. As Goodman (1976) described, reading is a psycholinguistic guessing game, in which the reader actively interacts with the text to construct meaning. Goodman (1973) and Smith (1973) both elaborated the "psycholinguistic method" of reading and argued that it had provided new insights into the reading process as well as the process of learning to read. To sum up, reading is the act of constructing meaning while transacting with text.

2.6 Research on Reading Strategies

In this section, the research on EP/EFL reading strategies instruction will be reviewed.

2.6.1 Research on EP/EFL Reading Strategies Instruction

Much research indicates that all Engineering professionals (EP) can benefit from strategy instruction. For instance, to aim at investigating the effects of using

reading strategies on reading comprehension for EP, Zhang (1992) conducted a study to incorporate four reading strategies into reading instruction. The four strategies are cognitive, memory, compensation, and test-taking strategies. The result indicates that the reading strategies instruction really help the EP in the experimental group make more improvement in reading comprehension than the control group. However, there was no interactive effect between the reading levels of the reader and the teaching method used.

3. Methodology

3.1 Participants

For the purpose of this study, one location was selected as a venue where the questionnaire was distributed. Yemeni engineering professionals, from a private Yemeni petroleum company participated in this study. The choice was due to the fact that the above mentioned company employed large numbers of engineering professionals. It also serves the purpose of identifying reading strategies used by EFL engineering professionals.

A total of thirty(30)participants took part in the questionnaire survey. The participants were all engineering professionals and were selected randomly. The study involves participants from different cultural backgrounds with an age ranging from below 20 to above 35 years old.

3.2 Research Instruments

The main purpose of the study is to identify offline/online reading strategies used by Yemeni engineering professionals. A survey of reading strategies (SORS),originally developed by, Mukhtari and Sheorey's (2001),was adapted in the present research to investigate the use of the offline/online reading strategies by engineering professionals when they read offline/online academic materials. The survey intended to probe the reader's perceived use of reading strategies and the frequency of the use of the reading strategies while reading.

The engineers were selected randomly. The questionnaire was first distributed to 50 engineers but only 30 engineers were able to fill out the questionnaire completely. The questionnaire comprises of 2 global reading strategies items; 29 problem offline reading strategies items, and 29 online reading strategies items. The questionnaire uses a five-likert scale where '1' means that' I never do that' when I read offline/online'2' means that ' I do this occasionally' '3' means that ' I sometimes do this ' '4' means that 'I usually do this ' and '5' means that 'I always do that when I read offline/online .

4. RESULTS AND INTERPRETATIONS

The findings of the study are discussed below.

4.1 Profile of respondents

Table 2 shows the profile of the respondents. For the SORS, thirty engineers responded. 100% of the respondents are from the same company A. There were 82.5% male and 17.5% female respondents respectively. 20% are below the age of twenty–five, 30%between twenty-six to thirty, 7% between thirty–one to thirty–five age bracket and the remaining 43%were above the age of thirty–five. The majority of the respondents ,therefore, are young engineers. 64% of the respondents are engineers, 7% are architects , 7% geophysical , 3% commercial DEPT, 3% IT network admins, 10% programmers ,3% accouters and 3% are working in the safety division.

Table 2: profile of respondents

		Frequency	Percent
Mode	Online	30	50 %
	Offline	30	50 %
Gender	Male	25	82.5 %
	Female	5	17.5 %
Age	Below 25	6	20 %
	26 – 30	9	30 %
	31 – 35	2	7 %
	Above 35	13	43 %
Occupation	Engineers	19	64 %
	Architects	2	7 %
	Geophysical	2	7 %
	Commercial DEPT	1	3 %
	I T network admin	1	3
	Programmers	3	10 %
	Accountants	1	3 %
	Safety division	1	3 %

Independent sample T-test were run in the analysis. In response to the research question if there are any significant differences in online and offline reading strategies, the results indicate that there are no significant differences between

online and offline reading strategies , t(28)= ~1.23,p~0.22 (see Table3).The mean for the online reading strategies was 3.30, while that of offline reading strategies was3.30.

Table 3: Independent sample t-test for online and offline reading strategies

	Mode	Mean	SD	SE	T	df
Reading strategies	Online	3.30	0.56	0.16	1.23	28
	Offline	3.30	0.53	0.20		

4.2 Differences in online and offline reading strategies

In response to the research questions (1&2) whether there are acute differences in the online and offline reading strategies used by engineering professionals according to the three categories , Global, Problem- solving , Support Strategies , the results indicated that there were significant differences in the use of global and problem-solving strategies. As for the use of global reading strategies in online reading, the mean was 2.13 while that of offline reading was 2.16; for problem-solving strategies where the mean for online reading was 1.10, the mean for offline reading was 1.33

However , there was significant difference in the use of supporting strategies where the mean for online reading was 1.40 and the mean for offline reading was 2.23 (see table 4).

Table 4: Mean for reading strategies

	Mode	N	Mean	Std. deviation	Std. Error mean
Global	Online	30	2.13	2.56	1.13
	Offline	30	2.16	3.30	0.33
PROB	Online	30	1.10	2.53	0.83
	Offline	30	1.33	2.4	0.46
SUP	Online	30	1.40	3.70	1
	Offline	30	2.23	3.8	0.56

There is however, a significant difference in the use of support reading strategies between online and offline reading. It has been found that more support reading strategies were used for offline reading then for online reading. This could be due

to the fact that when the engineers read manuals or reports, they spend more time trying to understand the content in the material compared to what they read on their computers.

Generally, more support reading, global and problem-solving strategies were used by the engineers at the company where they spend more time using various reading strategies.

4. 3 Frequency of strategy use

To answer the question: which strategies are most often used, whether global, problem-solving and support, the mean statistics indicates that Global reading strategies were most often used in online and offline reading, followed closely by support reading strategies for which the mean was 3.70. The strategies which were used the least were Problem- solving strategies. The mean for the use of Problem-solving strategies was 2.50 (see Table 5). These findings are consistent with the findings of Anderson (2003) in his study of EFL learners. Global reading strategies were more often used by the EFL learners .

Table 5 : Means of reading strategies more often used

	N	Minimum	Maximum	Mean	Std . deviation
GLOB	30	0.33	3.30	2.16	3.30
PROB	30	0.46	2.50	1.33	2.50
SUP	30	0.56	3.80	2.10	3.80

The independent sample t-test indicated that there are significant differences in the use of Support reading strategies between online and offline reading of engineering materials : p (30)= -3 , p <1.50 (Table 6) . On the other hand , the test indicated that there are no significant differences in the use of global and support reading strategies between online and offline reading of engineering professionals.

Table 6: Independent sample t-test between online and offline reading strategies

Reading strategy	Mode	Mean	SD	SE	DF
GLOB	Online	2.13	2.56	1.13	28
	Offline	2.16	3.30	0.33	
PROB	Online	1.10	2.53	0.83	28
	Offline	1.33	2.4	0.46	
SUP	Online	1.40	3.70	1	28
	Offline	2.23	3.8	0.56	

The engineering professionals read online and offline engineering materials for various purposes. The materials that they refer to are manuals and reports. From this study, the use of reading strategies most often used by engineering professionals are made clear. The significant difference in the use of reading strategies by the company could be the differences in the nature of work. It is that the engineers at the company use more problem-solving strategies in contrast to global and support reading strategies .

For both online and offline reading, support reading strategies were most often used by the engineering professionals at the company, followed by global reading strategies and then only by problem-solving strategies. Support reading strategies are such as" I paraphrase to better understand what I read", "I underline or circle information in the text to help me remember it', and " I go back and forth in the text to find relationships among ideas in it". Problem-solving strategies include: " I try to picture or visualize information to help me remember what I read", "I have a purpose in mind when I read ","I read slower according to engineering material I read", "when reading, I decide what to read closely and what to ignore", "When reading, I translate from English into my native language". Problem-solving strategies are the least often used by engineers in the field, most probably because of constrains of time or due to the need to meet with deadlines.

5.CONCLUSION

Reading is an essential skill for English learners to ensure success in learning. With strengthened reading skills, English learners tend to make greater progress in other areas of language learning. Reading is an important skill to help people learn

from human knowledge and experience. Through reading, knowledge has greatly contributed to the growth of mankind. The most common definition of reading is that it is a 'cognitive' activity, which implies a certain amount of thought on the part of the 'engineering', and where a kind of 'involvement/interaction' between the reader and the text is taking place to get the meaning out.

The reading strategy instruction will improve reading comprehension of EFL, so the engineering professionals (EP) perform best in the types of main idea questions, detail questions and word-guessing questions from the strategies instruction, but they cannot do well in the inference questions, the strategies of skimming, scanning, guessing word meanings are most frequently used by EPs; while self-monitoring is the least used strategy, and EPs have positive responses toward the explicit instruction of reading strategies.

We can define the reading strategies as a conscious actions that readers take in the reading process to comprehend the reading texts, and the use of reading strategies can be observable behavior such us taking notes while reading to help comprehend the reading texts, reading aloud when the text becomes difficult, underlining or circling information in the text, and using reference materials for example a dictionary to help understand the content in the text.

The present work proposes to investigate the use of offline/online reading strategies used by Engineering Professionals, i.e. Yemeni Engineering Professionals so as to develop Engineering Professionals' awareness of the use of appropriate offline/online reading strategies. The SORS measures three broad categories of reading strategies, namely, Global Reading Strategies (GLOB) ,problem solving strategies (PROB) and support reading strategies (SUP) . Some studies suggest that the ultimate purpose from reading is actually more to comprehend what to read than to merely answer questions. And also reading comprehension is seen as a communicative process where the engineering communicates something through the text and the reader has to get it by interacting with the text during reading. To succeed in establishing this knowledge, the engineering has to know the expressions that connect ideas together.

The engineers at the company use more problem-solving strategies in contrast to global and support reading strategies. For both online and offline reading, support reading strategies were most often used by the engineering professionals at the company, followed by global reading strategies and then only by problem-solving strategies.

As seen in the literature review, many studies have been done to investigate the meta cognitive reading strategies of EFL learners but none to date has been

conducted on professionals at the workplace. This study thus bridges the gap between what is done in classrooms and what is practiced at the workplace. Examining the meta cognitive reading strategies of engineering professionals shed light on why reading strategies are significant to accomplish the tasks of engineers. More of such research should be carried out in other professional fields such as business, information technology, medicine, architecture etc,.

The results of this study have pedagogical implications for English for specific purposes (ESP) classes. In most institutions of higher education, Technical English classes for engineering students are conducted. On the basis of the current findings and the literature, a fair balance between strategic and linguistic training should be achieved in skills development programs such as for technical English classes. When exposing students to authentic engineering materials, both offline and online, teachers should (1) assess students' awareness of strategy use (for example by using instruments such as the SORS and OSORS), (2) raise awareness of the importance of strategic reading, (3) raise awareness of the array of strategies available to aid comprehension (for example global , problem- solving and support reading strategies) , and then (4) provide strategy training problem-solving strategies such as the once employed by the engineering professionals in the study can be emphasized to enable students to become efficient and effective readers .This will have implications when the students enter the workplace .

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