

## **Exploring reading strategies through introspective and retrospective think-aloud protocol**

**Abdulkhaleq A. Al Qahtani**

Department of English, Faculty of Languages and Translation, King Khalid University, PO Box 9100, Abha, Saudi Arabia

dr.abdukhaleq@gmail.com; aalqahtani1@kku.edu.sa

### **Bio-profile:**

With PhD from Oklahoma State University, Stillwater, OK, Dr. Abdulkhaleq Al-Qahtani works for King Khalid University, Saudi Arabia, as an Associate Professor in the Department of English, Faculty of Languages and Translation. He is actively involved in conducting research on both Linguistics & Applied Linguistics. Presently, he is hosted in the University of Southern Indiana as a visiting faculty. His research interests include SLA and reading strategies in EFL.

### **Abstract**

The present study reports reading strategies of Arabic L1 EFL college-level learners at three reading ability levels: high, medium, and low. Thirty students were asked to take the reading section of the TOFEL to determine their reading abilities. Then two participants from each level were selected randomly to go through the think-aloud protocol and the retrospective report. Then they were interviewed for further insights. Ten reading strategies were identified with the high ability, 10 with the medium ability, and 2 with the low power. The findings support that each reading ability employs these strategies differently and apparently for different purposes. Pedagogical suggestions were presented.

**Keywords:** EFL, introspective think aloud, L1 interference, reading strategies, retrospective reporting.

## 1. Introduction

It is a fact that reading is at the essence of literacy. As reading ability goes higher, academic success positively correlates (Grabe, 1991; Sheorey & Mokhtari, 2001; Al-Ahdal, 2020). This importance kept educators and researchers on their tiptoes to analyze the underpinnings of reading and the skills required to enhance their students' reading abilities. A sizable amount of research was geared to find a possible relationship between reading comprehension and reading strategies (ex. Giath and El-Sanyoura, 2019; Gurses & Bouvet, 2016; Hong-Nam & Leavell, 2006; Malcolm, 2009; Park, 2010). Many studies yielded mixed results as to the extent to which reading strategies correlate positively to reading comprehension. Many of these studies were quantitative and were done with various learners from different cultural and linguistic backgrounds. For example, there are studies which were conducted with Persian EFL learners like Ahmadian & Pasand (2017) and Koshima & Samani (2014), with Arab EFL students like Al-Sobhani (2018) and Meniado (2016), with Taiwanese EFL learners such as Chen (2015), etc.

There are three possible explanations for the inconsistent results when it comes to reading strategies and comprehension relationship. First, it seems that there are cultural/educational/linguistic features that do not share with other cultures or at least have their approach to literacy in L1, and that approach affects the way they handle reading in L2, as contended by Abbott (2006) and Bang & Zhao (2007). This explanation may account for the discrepancies found in numerous replicated studies with various groups of EFL learners. Second, the reading ability level of the participants in those studies could account for the mixed results. High ability readers tend to use strategies in a way that is different from lower ability learners (Gaith & El-Sanyoura, 2019; Malcolm, 2009; Lai, Li & Amster, 2013; Zhou & Zhao, 2014; Alkhudiry & Al-Ahdal, 2020; Almakrob & Al-Ahdal, 2020).

The third possible explanation could be ascribed to research methodology. From about 30 studies that I reviewed partially for methodological purposes since the year 2000, only Abbott (2006) and Bang & Zhao (2007) were qualitative. All the other studies were quantitative and were based mainly on preceptive reports about strategy use. This might have caused the inconsistency in the results of previous research. Twenty years ago, Lazaraton (2000) reported a paucity of qualitative research in applied linguistics in the nineties, and it appears that the same scarcity remains until now. Thus, the need for qualitative studies to describe the actual use of reading strategies by EFL learners from a given culture at various reading abilities is appealing and well-justified.

The present study explores the reading strategies relevant to Arabic L1 learners of English as a foreign language at three reading ability levels: high, medium, and low. It specifically seeks to answer the following key questions:

1. what are the strategies that Arabic L1 students use when they read English as a foreign language?
2. Will different ability readers use other methods?

## **2. Method**

### *2.1 Participants*

The participants were selected in two phases: First, a whole class of thirty EFL college students was asked to participate in the present study. They were all enrolled in third-semester reading comprehension class in an English BA program at one major university in Saudi Arabia. They were all male and their ages ranged between 19-23 years old. The participants were recruited as volunteers who would receive 10% extra marks in the reading course. The class was selected randomly from 8 other courses/sections enrolled in the same reading course. It is hoped that this class is representative of the general population of enrolled university students. In the second phase and based on test results, only six were selected: two students at three ability levels: High, medium, and low.

### *2.2 Materials*

Three types of materials were employed in this study. First, an older version of the reading section of the TOFEL were retrieved from the WWW (the World Wide Web). A think-aloud Protocol and a retrospective report about their reading process were gathered through audio recording and note-taking. Third, based on their reports, a semi-structured interview questions were asked for further clarification.

The TOFEL test consisted of five passages with varying topics and difficulty levels. The test is valid and reliable and widely accepted globally as a valid assessor of reading ability. The Think-aloud Protocol is one of the best techniques to measure higher-order mental processes (Olsen, et al, 1984). The retrospective report was also essential to cover the elliptical nature of the think-aloud procedure. Both procedures were audio recorded during the second phase of data collection concurrently (without interruption). The audio-records were saved in audio files on a smartphone. After the think-aloud protocol finished, the participants are prompted to describe their reading process as it has just happened.

Then, they would answer five questions based on their specific performances. The interview questions were meant to elicit information about how they rated their comprehension and described the kind of problems they faced and how they solved them. Thus, each participant had to answer a set of questions that were adapted based on their reports in the think-aloud and the retrospective report.

### *2.3 Procedures*

This study aimed to explore the reading strategies or techniques that are commonly used by EFL learners whose L1 is Arabic. We need to sort the participants according to their reading ability levels. Thus, the ability levels were determined by having participants sit for a reading section of the TOFEL test. Based on their reading test performance, they were divided into three groups: High, medium, and low-ability readers.

Then the concurrent and retrospective think-aloud protocol was employed to identify those strategies; the elicited techniques should reflect the actual reading strategies used not the perceived ones (actual use not opinion which is an established strength of the think-aloud protocol, usability). To do so, all participants read the TOFEL passages and responded to the questions during one of the class meetings that went on for 60 minutes. After that, a total of six participants were randomly selected after sorting the three levels: two participants from each level. They were interviewed by the researcher and were asked to describe their reading processing in one of the passages where they performed the highest. They were asked to read each passage individually, verbalize their thoughts while reading, and then stopped and asked to describe their mental processes without knowing how they did in those passages. The whole procedure of thinking aloud and the retrospective report was audiotaped for further reflection and analysis by the researcher. Then, the interview questions followed.

Since the language used in the think-aloud and the retrospective report was Arabic, the participants were summoned once more couple of days later to doublecheck that what was translated into English was an accurate representation of their intentions.

### *2.4 Analysis*

The artifacts were collected, the participants were given ID numbers and were assigned to their ability levels according to their performance on the TOFEL. Those who scored one standard deviations above the mean were considered high ability, and one below the mean were low. The rest were considered medium ability. Table 1 shows the descriptive statistics of the test results.

**Table 1: the descriptive statistics of the TOFEL scores**

	N	Minimum	Maximum	Mean	Std. Deviation
TOFEL Score	30	7	25	13.10	4.286
Valid N (listwise)	30				

Then, two participants from each level were selected randomly to do the concurrent (introspective) and retrospective think aloud protocol. The researcher gathered the six participants to a meeting. In the meeting, the researcher modeled the think-aloud procedure couple of times until the participants got the hang of it. Then one from each level rehearsed the procedure to the group to make sure they know the exact task. They would be asked to verbalize their thoughts and after reading will describe their reading process in Arabic, their reports would be transcribed in Arabic. Afterwards, they would be asked the five interview questions in Arabic and their responses would be written down. Then, the reported strategies were identified and typified. They were discussed and conclusions were made.

### **3. Results and discussion**

To answer the first question, “What are the strategies that Arabic L1 students use when they read English as a foreign language?” , and the second question, “will different ability readers use different strategies?”, six participants were randomly chosen from the 30 students pool based on their levels, two from high, two from medium, and two from the low reading ability levels.

#### ***3.1 The two high ability participants***

the scores of the two participants were: 25, and 24 of 30. They were assigned the numbers 1 and 2 as IDs, respectively.

##### ***3.1.1 No. 1 Participant***

The first student came to the meeting and was asked to read the first passage in which he attained the full score, Passage 2, he attained the full score in passages 2 and 3 (see appendix A). Following the modeling session procedure, he glanced over the entire passage up and down, and then he started reading to himself, he tended to raise his voice in the middle of each sentence around the verb phrase. He slowed down at some points and stopped at certain words then moved ahead a little bit and reread the sentence in which the word occurred. Then moved on following the same pace until the end. When asked to report his reading process in retrospect, he stopped and recollected saying that he did not know one word (debris) and tried to guess its meaning but could

not (he said that he replaced it by the word waste in his mind). He stopped when he made this exchange of meaning. he reread a few sentences and tried to connect the topic to a video that he watched on YouTube about communication satellites.

The interview session started immediately by the first question:

**How well did you comprehend the passages: 1, 2, and 3? (for this participant they were Passages 2,4, & 5 respectively)**

He replied around 95% for Passage 1. He claimed that if he knew that word it would have been 100%. As for passages 2 &3, he claimed his comprehension to be around 85%. The lack of comprehension was ascribed to unknown words and insufficient familiarity with the topics. He also said that pondering ones understanding of a written text help enhance comprehension. When asked how, he said, "after reading I usually check my comprehension and review the passage and think about it." I said, but I did not see you doing this, he said, "I already know this topic very well. The reading did not add to my knowledge about the topic."

**Why were you raising your voice around the verb phrase in almost every sentence?** He said, "I don't know, I think I do that when I believe I got the point in that sentence". He added, "at times I do that when I meet an unfamiliar word or a new idea that I did not connect to my understanding of the passage".

**You were repeated some of the sentences that you read, did you look ahead to the following sentences?** he inquired about the exact meaning and said, "yes I usually move my eyes to the subsequent sentence to confirm my understanding of the ideas already established from the previous sentences, I try to connect them".

**What do you do when you face a new word that you could not possibly know?** He said that he would try to make a meaning for that word that fits the general understanding of the whole passage. he said that he usually replaces such words with his own words that would fit the general meaning. When asked about dictionary use, he said that it would be a wasted time at the expense of the flow of ideas. I asked he to elaborate, and he said, "when I am reading, I construct a mental dialogue with myself about the topic, pulling up a dictionary would be like someone who disrupts your line of thought by a question in the middle".

**What would you add to our curriculum that you think would help you enhance your reading ability?** He replied, "I believe if you would assign extra readings to the students to read on their own other than the assigned texts, the reading level would rise".

### 3.1.2 No. 2 Participant

This participant attained the full mark on Passage 3 (Appendix A). Therefore, he was asked to read it according to the think aloud protocol that we rehearsed in the training session. He looked at the passage from beginning to end. Then, he read aloud in almost monotonous tone with higher pitch at the end of each sentence. He seemed to jump whole words and phrases and then at the *1.6 km phrase*, he stopped and said “amazing”. Then he stopped in the second paragraph at *the phrase 100* and then moved on. He was raising his voice pitch at the last word in almost each sentence, and then he stopped and moved his eyeballs ahead and then resumes reading. After he finished, he said, “I love this”, reflecting about the entire passage. Retrospectively, he reported in Arabic that he loves this topic and watched a few documentaries on bacteria. He reported that he reads the familiar topics with ease and that help him use English and expand his vocabulary size. He also said that he previewed the whole passage and he remembered that he liked it when he sat for the exam the first time.

The interview followed immediately:

**How well did you comprehend the passages: 1, 2, and 3? (for this participant they were Passages 3,2, & 1 respectively)** He replied for Passage 3, I had no problem I found it very easy and informative. He thought that he felt as if he were reading it in Arabic. Passage 2 (scored 5/6, the missing point was question 4, reference question) provided a lot of information. He said that he is not fond of these types of topics particularly issues that are related to physics. As for Passage 1, (scored 3/5. He missed items 2 &5) he believes that he got it right except for unfamiliarity with two or three words like the word *feat* in the passage. he complained about the large number of passages and questions that worried him when he received the test paper. He had a general look at the entire exam and quick glance at the questions. He did not actually mark the answers on the exam sheet for the two items he missed in Passage 1. He reported that he got preoccupied with the amount of work that he had to do in 60 minutes.

**Why were you raising your voice at the end of almost every sentence and then paused for a second or two?** He recollected and then said, “yes, I was actually previewing the following sentence not reflecting on the said word”. I, the researcher, have noticed that his eyeballs were moving forward. I did not tell him about my observation so I would not be leading the witness, as the saying goes. That reported previewing was possibly the reason for those quick jumps that I observed.

**What do you do when you face a new word that you could not possibly know?** he responded to this question by saying, “Nothing. I just ignore it and if I feel it was a key to understanding, I underline it and look it up in my dictionary application”. I asked, “what if you were in the exam and you were not allowed a dictionary”, he said, “I would try to guess it form context”. I asked about how often he used dictionaries when he reads, and he replied, “I do not use a dictionary when I read passages and chapters, I usually understand without looking up single words here and there.”

**What would you add to our curriculum that you think would help you enhance your reading ability?** He said that we should concentrate more on vocabulary building exercises in our reading classes because reading is about vocabulary that if you do not have, your reading would be meaningless.

I did not ask this participant about rereading strategy because he did not display it in the reading aloud or the retrospective report. However, he did reflect on his general understanding and pondered the ideas in the text.

To sum up, the two high ability participants manifested high use of reading strategies. The researcher did not ask about them directly, but they were observed while they were in actual use during think-aloud protocol and retrospective reports. The questions helped clarify the observed behaviors. The following reading strategies were observed:

- previewing the text, its length and structure.
- Moving back and forth around unfamiliar words
- Glancing ahead to confirm understanding
- Guessing meaning of unfamiliar diction from context
- Connecting the topic to previous knowledge
- Speed reading when there is no comprehension need to slow down
- Slowing down to construct meaning
- Raising their voice to indicate difficulty
- Connecting ideas within the text through repetition and moving eyeballs ahead
- Reflecting and checking their comprehension after reading

### ***3.2 The two medium ability participants***

The two participants in this group scored 15 and 14 out of 30. They were assigned the numbers 1 and 2 as IDs, respectively.

### 3.2.1 No. 1 Participant

The first participant in the intermediate level scored 15/30. The best score was on Passage 1 where he made 3/5. I asked him to read the passage following the read aloud protocol model. He started by looking up and down the passage and then said, “okay”. He read loud enough for me to hear and enunciate each word as if it stands alone. He mispronounced several words, I took note of them without interruption, he reread the second and third sentences. and moved on saying, “I don’t get this word (in Arabic)”. He stopped at the word “reckoned” read it twice and paused for couple of seconds moving his eyeballs back and forth and then moved on. When he came to the boldfaced *which* in the passage, he looked down to the questions item 4. Then moved on until he finished doing the same technique. Then he was asked to describe his reading process in retrospect in Arabic. He said that I usually start by seeing the length of the text. I look at any outstanding aspects of the text like boldfaced words and italics. Then he started reading sentence by sentence trying to know what it is all about. But he always meets words that are not familiar or do not seem to fit to his emerging comprehension. This creates a serious problem to him. Then he rereads and imagine the connection to his general knowledge. He thinks that reading is a huge challenge and boring.

The interview session started immediately by the first question:

**How well did you comprehend the passages: 1, 2, and 3? (for this participant they were Passages 1 ,5 & 2 respectively)** He scored 3/5 in Passage 1, 4/7 in Passage 5, 2/6 in passage 2. To this question, like all the others, he replied unknowing about his scores by saying, “well I did not comprehend them 100%. The best one was Passage 1 because we talked about this topic in another class. So, I know what it was all about. I also, did not know a number of words”, when asked about them, he responded that they were “feat and reckoned}, I asked about *Acquiring* because he mispronounced it. He said that he got right because the context gave the meaning away. As for the other two passages he said he did not understand them because it was his first time ever to read about the topic of Passage 5. As for Passage 2 in which he scored the least, 2/6, he said,” I could not locate the main idea, I did not understand the questions, and I spent a lot of time trying to connect the story to anything that I already know, but failed.”

**Why were you enunciating each word alone as if they were standing alone?** He said, “I feel trapped by the words I only focus on one word at a time. That is why I spend a lot of time on a short passage”. He also complained about many unfamiliar words whenever he reads.

**You were repeating the second and third sentences, and then repeated the word *reckoned* two times, but you did not repeat other sentences?** he said that he repeated while thinking about the other class information as they were talking about first language acquisition in that class. He claimed that he understands the gist even though he did not know many words such as *reckoned*, but he guessed it correctly in Question 3 (see Appendix 1). So, I checked my understanding by asking, you repeated while trying to connect to the other class and to have time to guess a word from the context and he confirmed my understanding.

**What do you do when you face a new word that you could not possibly know?** He said that he would guess it from the context like the word *reckoned*, or if it is allowed would use a dictionary. Otherwise, he would leave it.

**What would you add to our curriculum that you think would help you enhance your reading ability?** “I think if the teacher explains the new words before the reading passage, then it would help a great deal”. He replied without much thinking.

### 3.2.2 No. 2 Participant

This participant scored 14/30. His top score was in Passage 3 which was 6/6. I asked him to read Passage 3 following the read-aloud model as we did in the training session. He looked at the passage up and down, flipped the page and said, “three paragraphs”. He started reading each word alone and sometimes a word and a subsequent word together especially if they were functional words before and after (function words like determiners, demonstratives, and auxiliaries). He paused at the word *microns* in the second line and then moved on and read the third sentence. He went back to the middle of the third sentence reread it, faster and better this time. He said, “yes I got it, size of bacteria.” He would stretch his pronunciation of a word with a gap filler like “aaaaaaa” or sometimes he would prolong the middle vowel of a word and moves his eyeball forward two or three jumps or fixations ahead. He did not pass a number without a pause. He read the first sentence of each paragraph carefully and repeated the first sentence of the third paragraph. After he finished, I asked him to describe his reading process as it just happened. He said, “first I checked the passage, the length I skimmed for numbers or dates, I read the first sentence and I recognize the topic right away. The first word was bacteria, so I knew it was about bacteria I also realized that measurements and sizes were important”. He said that he did not know what the word micron was, but he knew it was a tiny/microscopic measurement from the context. Then he said that is it.

The interview questions were asked as follows:

**How well did you comprehend the passages: 1, 2, and 3? (for this participant they were Passages 3, 4 & 1 respectively)** He responded that he did not have a problem with Passage 3, as a matter of fact he said that he enjoyed it. Also, he mentioned that he employed the reading strategies that he was learning in the reading class. But as for Passage 4 he said, “I started losing hope because I exerted most of my energy in Passage 3. The topic was different and frankly I do not like history”. He continued, “I had an idea when I responded to this passage. I thought to scan for words used in the passage and if I find the word used in the options, I will pick that choice, apparently it did not work”. I asked, “How about Passage 1? He replied, “I did not understand it I was overwhelmed with new words and did not know what it was about”.

**Why were you enunciating two words together and prolonging the vowels (I modeled his performance to him to make the question clearer)?** He said that he learned in the reading class that reading should flow in chunks of related phrases and he was trying to do just that. He thought phrases not words alone should be read together to build comprehension.

**You repeated the second sentence from the middle and then you repeated the third sentence, and then you repeated the first two sentences in the second and third paragraphs, you also repeated the word *microns*, why all these repetitions?** He said, “I was trying to understand and from an accurate meaning of the topic.” As for the word microns, I did not know its meaning, but I knew it was a very tiny unit of measurement as I said earlier.”

**What do you do when you face a new word that you could not possibly know?** He said that he would try to guess its meaning from the context like the word microns. When asked what if he could not. He said, “I would use a dictionary. If in the exam I would just find the question with the same word and then pick that option hoping it would be the right answer”.

**What would you add to our curriculum that you think would help you enhance your reading ability?** He answered this question by praising the focused instruction of reading strategies that we were implementing in our curriculum, but he adds that practicing and ensuring that those strategies are actually used is the problem.

The following strategies were observed:

- previewing the text, its length and structure.
- Moving back and forth around unknown words.
- Guessing meaning from context though not as effective as the high ability readers.

- Using previous knowledge as a tool to grasp the ideas in the text
- Reading pace is very slow and careful.
- Stopping to construct meaning.
- Raising their voice to show difficulty
- Connecting ideas within the text through repetition and moving eyeballs ahead. Did this but not as frequently as the high ability.
- Skimmed and scanned for print features
- Expressed need for dictionary

### ***3.3 The tow low ability participants***

The two participants in this group scored 9 and 8 out of 30. They were assigned the numbers 1 and 2 as IDs, respectively.

#### ***3.3.1 No. 1 Participant***

The first participant scored 9/30 which is considered low. He scored 3/6 in both Passages 3 and 4. So I asked him to choose one of them and read it to me and verbalize his thoughts as he reads. He looked at both passages and chose Passage 3. He started by looking at the first page and read the first sentence word by word as if they were in isolation. he completed the whole task in this manner. No repetition, no movement of eyeballs back and forth. It was monotonous all long with lots of mispronunciation. He did not verbalize his thoughts. He was too absorbed in the text. He was holding a pen in his hand and underlined five words: *microns, 100 times, power, are so small, molasses*. After he finished, I asked him to tell me in retrospect how he approached the reading task. He had this to say, “I started by reading the first word which is bacteria. I realized that the passage is about bacteria. I read microns, and I know this word. Frankly, I did not know most of the words”. He said it was difficult.

The interview questions were presented, and he responded to them as follows:

**How well did you comprehend the passages: 1, 2, and 3? (for this participant they were Passages 3 or 4 ,5 & 1 respectively).** He replied to this question by saying not much. He admitted that he did not know much except for Passage 3 because it started with the words *bacteria and microns* which was a measurement unit that he knew before. Similarly, he knew the words *children and language* in Passage 1 and guessed the passage was about how children acquire language, which is true.

**Why were you enunciating each word alone as if they were standing alone?** He replied that he was just reading each word as they appear in the text one by one. I wondered about how he read in Arabic and said that he was a good reader. I suggested that he would better apply the same speed in English. he commented that he has a problem with unknown words. He reported that he did not know almost all the words and could not make the connection. So, I pulled his test paper and showed him his responses and I asked him to explain how he managed to score 3/6 in Passage 3 despite the fact that he admitted not comprehending the text. He said, “Question 1 had the word bacteria in option A so I picked it. The second had the word microns so I picked it. As for the third option he just made a wild guess”.

**You underlined the words, microns, 100 times, molasses, power, and so small, why?** He said that these were the familiar words. I wondered are you saying you do not know the words like water, place, different, etc. words that are very common to many people. Puzzled as if was caught off guard, he replied that he definitely knew all these words, but he did not know how the passage meaning was constructed along with the unfamiliar words.

**What do you do when you face a new word that you could not possibly know?** He answered saying that he would use a bilingual dictionary to look it up. I asked what if it were in the exam, he said that he would just leave it. I asked if he had been practicing ways to guess meaning from context and the like (we practice this strategy in our reading classes), he said that he knew that but never applied it.

**What would you add to our curriculum that you think would help you enhance your reading ability?** He said, “I suggest that we do more reading and practice reading strategies more”.

### *3.3.2 No. 2 Participant*

This participant scored 8/30. His best score was in Passage 3, 4/6. So, asked him to read Passage 3 following the read-aloud protocol that we modeled in an earlier session. He started by reading the first word bacteria and moved on reading each word alone with difficulty. He spelled out almost every word. He said “I don’t know what this is” about almost every content word. The same tone went on for the whole passage. He had no problems with function words particularly prepositions but struggled a lot in content words. In retrospect, I asked him to describe his reading process, and he said, “I start by looking at the comprehension questions to know what to look for, then I start reading from the beginning to try to understand what the passage is about and find similar words in the questions.” When I find a word, I underline it then I choose the item in which the word is

mentioned.” I asked even if you do not know the word. He smiled and said, “I usually do not them.”

The interview questions followed immediately:

**How well did you comprehend the passages: 1, 2, and 3? (for this participant they were Passages 3, 4, & 5 respectively).** He replied that he his comprehension was extremely low in all the three passages even Passage 3. He admitted that his limited vocabulary was his main problem like many others.

**Why were you enunciating and spelling out each word as if they were standing alone?** He replied by saying that he was trying to read hoping that if he would recognize a word, he would know something about the topic of the passage. I asked, did you? He said, “yes” the passage was about bacteria. I asked about his score of 4/6 in Passage 3, and he said that he just scans for the same words that are mentioned in the text and in the question. Then he would choose the option with similar word. As for the rest, he would guess them.

**You were reading word by word to the end, why did not you reread to check your understanding?** He said that he did not understand anything accept the first word so he kept going to see if he would find a clue to connect to the first, but he did not. So, there was no need to reread or double check. He said that he would reread when he attempts the questions and connect repeated words in the passage.

**What do you do when you face a new word that you could not possibly know?** he responded by saying I would look it up in google translation website. When asked what if it was in the exam, he said then only connecting repeated words and the questions that he explained earlier.

**What would you add to our curriculum that you think would help you enhance your reading ability?** He said that vocabulary is a huge obstacle. H said,” many students resort to test taking tricks to overcome their lack of reading ability”. He added, “It would be great to find a solution for this problem.”

The observed strategies were as follows:

- Expressed need for bilingual dictionary.
- Underlining familiar words

In sum, L1 Arabic learners of EFL exhibited high use of reading strategies at the high and medium ability levels. They did not, however, display much use at the low level. Table 2 shows the observed reading strategies in the three ability levels.

<b>Table 2: reading strategies observed in the three levels of reading ability</b>		
<u>High ability strategies</u>	<u>Medium ability strategies</u>	<u>Low ability strategies</u>
<ul style="list-style-type: none"> <li>• previewing the text, its length and structure. (GLOB)</li> </ul>	<ul style="list-style-type: none"> <li>• previewing the text, its length and structure. (GLOB)</li> </ul>	<ul style="list-style-type: none"> <li>• Expressed need for bilingual dictionary. (SUP)</li> </ul>
<ul style="list-style-type: none"> <li>• Moving back and forth around unfamiliar words (PROB)</li> </ul>	<ul style="list-style-type: none"> <li>• Moving back and forth around unknown words. (PROB)</li> </ul>	<ul style="list-style-type: none"> <li>• Underlining familiar words (SUP)</li> </ul>
<ul style="list-style-type: none"> <li>• Guessing meaning of unfamiliar diction from context (PROB)</li> </ul>	<ul style="list-style-type: none"> <li>• Guessing meaning from context though not as effective as the high ability readers. (PROP)</li> </ul>	
<ul style="list-style-type: none"> <li>• Connecting the topic to previous knowledge (GLOB)</li> </ul>	<ul style="list-style-type: none"> <li>• Using previous knowledge as a tool to grasp the ideas in the text (GLOB)</li> </ul>	
<ul style="list-style-type: none"> <li>• Speed reading when there is no comprehension need to slow down (PORB)</li> </ul>	<ul style="list-style-type: none"> <li>• Reading pace is very slow and careful. (PROB)</li> </ul>	
<ul style="list-style-type: none"> <li>• Slowing down to construct meaning (PROB)</li> </ul>	<ul style="list-style-type: none"> <li>• Stopping to construct meaning (PROB)</li> </ul>	
<ul style="list-style-type: none"> <li>• Raising their voice to indicate difficulty (SUP)</li> </ul>	<ul style="list-style-type: none"> <li>• Raising their voice to indicate reading difficulty (SUP).</li> </ul>	

<ul style="list-style-type: none"> <li>• Connecting ideas within the text through repetition and moving eyeballs ahead (PROB)</li> </ul>	<ul style="list-style-type: none"> <li>• Connecting ideas within the text through repetition and moving eyeballs ahead. Did this but not as frequently as the high ability. (PROB)</li> </ul>	
<ul style="list-style-type: none"> <li>• Glancing ahead to confirm understanding (PROB)</li> </ul>	<ul style="list-style-type: none"> <li>• Skimmed and scanned for print features (GLOB)</li> </ul>	
<ul style="list-style-type: none"> <li>• Reflecting and checking their comprehension after reading (GLOB)</li> </ul>	<ul style="list-style-type: none"> <li>• Expressed need for dictionary (SUP)</li> </ul>	

To sum up the results and answer the research questions, I can say in addressing Question1 (*what are the strategies that L1 Arabic students use when they read English as a foreign language?*) that L1 Arabic readers of English used 22 reading strategies not 14 or 16 because each level use what seems to be the same strategy in their specific way for their different purposes; they are listed in Table 1. These strategies can be classified in accordance with one of three renowned reading taxonomies:

1. Block (1986); Lee-Thompsn (2008) where they classified reading strategies to local strategies which are considered bottom-up and general strategies which are considered top-down strategies.
2. Mokhtari and Sheorey (2002) who classifies reading strategies into global (GLOB), problem-solving (PROB)and support (SUP) strategies.
3. O'Malley & Chamot (1990) who classified reading strategies into cognitive, metacognitive, and social/affective strategies.

However, the taxonomy employed in this study is Mokhtari and Sheorey's because it's the most used and referred to in the literature (Gaith and El-Sanyoura, 2019; Lin, 2018). Thus, the strategies are marked according to their type in Table 2.

The answer to Question 2 (*will different ability readers use different strategies?*) is as follows: yes, these readers use reading strategies differently based on their reading ability. High ability uses more problem-solving strategies (60%) than the medium ability who used them 50% with one more support strategy. The low level did not employ reading strategies as much. The only observed

ones were the two support strategies listed in Table 1. The use of dictionary though did not happen, but the need for it was expressed in both the medium and the low level.

#### **4. Discussion and conclusion**

The main finding in this study asserts that Arabic L1 learners use reading strategies variously. Each reading level has its own set of strategies that are used to serve comprehension. The high ability readers used a set of ten strategies, the medium ability used nine strategies, and the low ability readers used two strategies. Most of these strategies have been recognized in the literature and were typified as metacognitive/global, cognitive/problem solving, and support strategies (Sheorey & Mokhtari, 2001).

The entire spectrum of the strategies used by high ability readers seems to land between two parentheses: The opening parenthesis is a preview of the entire task, and the closing parenthesis is a reflection on general comprehension. What happens in between these two global strategies six problem solving strategies, one other global and one support strategy, following Mokhtari & Sheorey (2002) taxonomy. The effort exerted on the written text was minimal. Most of the work dwelled around comprehension and fitting the reading content into the readers' existing knowledge. Thus, readers at this level read strategically. They would fit Grabe's (2009) definition of what strategic reading is. As he put it in his words, "reading is a strategic process in that a number of the skills and processes are needed on the part of the reader to anticipate text information, select key information, organize and mentally summarize information, monitor comprehension, repair comprehension breakdowns, and match comprehension output to reader goals" (p.15).

However, the strategies observed with the medium ability readers are to some extent similar to the ones listed for the high ability. However, the anomaly in the way these readers used the strategies was not to be mistaken. They seem to use a modified version of the same reading strategies for different ends. Thus, the medium ability readers were strategic but in their own ways. They used skimming and scanning to get a general idea of a reading text (Participant 2); a strategy that was not used by the high ability readers. They also employ their background knowledge as a supporting tool to access the text, while the high ability readers seem to use the text to reflect on and evaluate their previous knowledge. Further, repetition and speed were at a much lower rate than those observed in the high ability readers. This finding supports Abbott (2006) findings who compared intermediate Arab readers with their Chinese counterparts. She suggested that Arab readers employ

strategies like skimming, connecting ideas to general knowledge, and inferring from reading. These strategies were similar to the ones observed for this level.

By contrast, the two low ability readers did not actually use reading strategies compared to both the high and medium ability users. This could be ascribed to what Ericsson and Simon (1980) call the “high cognitive load” of the task. The only strategy they used was the underlining known words. They, as Participant 1 put it, were trying to connect those words to the comprehension questions. Thus, it was a test taking technique not a reading strategy. So, as the low ability used underlining strategy as a technique to make connection between ideas, the high and medium ability readers did not. It seems that the high ability did not use this technique because they simply did not need to as the passages were short and not that demanding.

We can conclude that the use of reading strategies escorts reading level above the low ability level. We observed that low ability readers did not use reading strategies. As a matter of fact, the low ability readers were trapped at the word recognition level leaving no room for any other process to take part. As reading ability moves higher and word recognition becomes better, readers seem to free some space for the use of reading strategies.

The intermediate level exhibited more use of reading strategies, but still in a different manner from the high ability readers. They managed to search their previous general knowledge to establish connection with the text through previewing techniques and keywords. They at this level are just becoming aware of the importance of connected reading and constructing comprehension. Resorting to previous knowledge was used as a means to comprehend the reading. Thus, the purpose and use of previous knowledge is different from the high ability readers.

By the same token, as the reading ability rocket higher, the free space for strategy employment becomes vaster and more effective. Reading strategies at this level extends its role from being a helping tool to comprehension as a main job to help evaluate and reconstruct readers’ schemata through reflection on newly acquired knowledge after reading. The text, at this level and unlike the medium ability level readers, is used as a tool to reconstruct, evaluate and/or modify existing knowledge.

#### *4.1. Implications*

the present study, though qualitative in nature, builds on mounting evidence of the importance of reading and its pertinent skills to lead EFL and ESL learners to academic success. Even though reading strategies might not have a causal relationship with reading ability, but we now know they

are related somehow. Thus, teachers should help their students in two in tandem phases: First, as proven in this study, there are indeed other factors that are involved in the reading process, for example, they need to have their students build their lexicon. We cannot teach reading as a skill if students do not know the words to begin with (Hu & Nation, 2000; Schmitt et. al., 2011). Second, teachers need to find ways to enhance word recognition process; low ability readers get trapped at this level. Thus, the immediate goal should be the automatization of word recognition and sentence structure. I have seen this problem firsthand in practice and as explained in this paper. It might not be an effective suggestion to instruct students on reading strategies at this level except for dictionary use, as it was considered a support reading strategy by Mokhtari and Sheorey (2002). One approach to help learners at this low level is to employ a narrow reading instruction approach as discussed by Han and D'Angelo (2009). In this approach the reading material is narrowed down to read for a single author or a single topic. Krashan (2004) argued that developing readers need topics that are easy and excessive to allow for the realization of his Input Hypothesis (1985). In doing so, learners would have ample opportunity to practice reading, build vocabulary, get acquainted with grammatical forms, and consequently allow incidental language learning and acquisition as supported by Gass & Slennher (2008).

Once learners are freed from word-recognition trap, we can now talk about reading and reading strategies. Students should be instructed in metacognitive strategies like prereading and planning strategies to help them make the connection between the main idea of the reading with their previous experiences. One way of doing this is to continue to present readings with familiar topics as suggested in the narrow approach but in addition to strategy training. As their reading level moves higher, the topics showed move to less familiar zones, and cognitive strategies should be introduced at this level. By and by students will become more versed in reading strategy use and consequently in reading ability level.

As I suspect that reading strategies might be language/culture specific, teachers and researchers should replicate reading strategy studies in their learners' first language to discover culture-specific preferences and possible difficulties.

## References

- Abbott, M. (2006). ESL reading strategies: Differences in Arabic and Mandarin speaker test Performance. *Language Learning*, 56(4), 633-670.

- <http://dx.doi.org/10.1111/j.1467-9922.2006.00391.x>
- Ahmadian, M., & Passand, P. (2017). EFL learners' use of online metacognitive strategies and its relation to their self-efficacy in reading. *The Reading Matrix*, 17(2), 117–132.
- Al-Ahdal, A. A. M. H. (2020). EBook Interaction Logs as a Tool in Predicting Learner Performance in Reading. *Asiatic: IIUM Journal of English Language and Literature*, 14(1), 174-188.
- Alkhudiry, R. I. & Al-Ahdal, A. A. M. H., (2020). Analysing EFL Discourse of Saudi EFL learners: Identifying Mother Tongue Interference. *The Asian ESP Journal*, 16 (2.1), 89-109
- Almakrob, A. Y., & Al-Ahdal, A. A. M. H. (2020). Culture-Specific Aspects of Turn-taking: An Analysis of Conversations in a Saudi Context. *The Asian ESP Journal*, 16 (2.1), 50-69.
- Al-Sobhani, Y. (2018). Language learning strategy use by Turkish International school students in Yemen. *Journal of Teaching and Teacher Education*, 6(2), 95–106.  
<http://dx.doi.org/10.12785/jtte/060203>
- Bang, H.J. & Zhao, C.G. (2007). Reading strategies used by advanced Korean and Chinese ESL graduate students: A case study. *The Reading Matrix* 7(1), 30-50.
- Block, E. (1986). The comprehension strategies of second language readers. *TESOL Quarterly*, 20(3), 463- 494.
- Chen, L. (2015). Taiwanese EFL learners' perceived use of online reading strategies. *The IAFOR Journal of Education*, 2(3), 68–80.
- Ericsson, K., & Simon, H. (1980). Verbal reports as data. *Psychological Review*, 87(3), 215-251.
- Ghaith, G., and El-Sanyoura, H. (2019). Reading comprehension: The mediating role of metacognitive strategies. *Reading in a Foreign Language*, 31,19-43.
- Gass, S., & Selinker, L. (2008). *Second language acquisition: An introductory course* (3rd Edition). Mahwah, NJ: Lawrence Erlbaum Associates.
- Grabe, W. (1991). Current developments in second language reading research. *TESOL Quarterly*, 25(3), 375-406.
- Gruses, M. O. & Bouvet, E. (2016). Investigating reading comprehension and learning styles in relation to reading strategies in L2. *Reading in a Foreign Language*, 28 (1), 20-42.
- Han, Z. & D'Angelo, A. (2009). Balancing between comprehension and acquisition: Proposing a dual approach. In Z. Han & N.J Anderson (Eds.), *Second Language Reading Research and*

- Instruction: Crossing the Boundaries* (pp. 173-191). Ann Arbor, MI: The University of Michigan Press.
- Hong-Nam, K., & Leavell, A. (2006). Language learning strategy use of ESL students in an intensive English learning context. *System*, 34, 399–415. <http://dx.doi.org/10.1016/j.system.2006.02.002>
- Hu, M., & Nation, I. S. P. (2000). Vocabulary density and reading comprehension. *Reading in a Foreign Language*, 23, 403–430.
- Khoshima, H. & Samani, E. (2014). The most frequent metacognitive strategies used in reading comprehension among ESP learners. *Advances in Language and Literary Studies*, 6, 180–188. <http://dx.doi.org/10.7575/aiac.all.v.6n.1p.180>
- Krashen, S. (1985). *The input hypothesis: Issues and implications*. New York, Longman.
- Krashen, S. (2004). The case for narrow reading. *Language Magazine*, 3(5), 17-19. *Psychological Review*, 523-568.
- Lai, S., Li, C. & Amster, R. (2013). Strategically smart or proficiency driven? An investigation of reading strategy uses of EFL college students in relation to language proficiency. *Contemporary Issues in Education Research*, 6 (1), 85-92.
- Lazaraton, A. (2000). Current trends in research methodology and statistics in applied linguistics. *TESOL Quarterly*, 34(1), 175-182.
- Lee-Thompson, L-C. (2008). An investigation of reading strategies applied by American learners of Chinese as a foreign language. *Foreign Language Annuals* 14, 702-721.
- Lin, J. (2018). Factors related to EFL/ESL learners' reading strategy use: A literature review. *Chinese Journal of Applied Linguistics*, 42 (1), 92-112.
- Malcolm, D. (2009). Reading strategy awareness of Arabic-speaking medical students studying in English. *System*, 37, 640–651. doi: 10.1016/j.system.2009.09.008
- Meniado, J. (2016). Metacognitive reading strategies, motivation, and reading comprehension performance of Saudi EFL students. *English Language Teaching*, 9(3), 117–129.
- Mokhtari, K., & Sheorey, R. (2002). Measuring ESL students' awareness of reading strategies. *Journal of Developmental Education*, 25(3), 2–10.
- O'Malley, J. & Chamot, A. (1990). *Learning strategies in second language acquisition*. New York: Cambridge University Press.

- Olson, G., Duffy, S., & Mack, R. (1984). Thinking-out-loud as a method for studying real time comprehension processes. In D.E. Kieras & M.A. Just (Eds.), *New methods in reading comprehension research* (pp. 253-286). Hillsdale, NJ: Erlbaum.
- Park, Y. (2010). *Korean EFL college students' reading strategy use to comprehend authentic expository/technical texts in English* (Unpublished doctoral dissertation). University of Kansas, United States.
- Schmitt, N. Jiang, X. & Grabe, W. (2011). The percentage of words known in a text and reading comprehension. *Modern Language Journal*, 95 (i), 26-43.
- Sheorey, R., & Mokhtari, K. (2001). Differences in the metacognitive awareness of reading. *System*, 29, 431–449. doi: 10.1016/S0346-251X (01)00039-2
- Zhou, X. & Zhou, Y. (2014). A comparative study of reading strategies used by Chinese English majors. *English Language Teaching*, 7(3), 13-18.



5. According to the passage, what is impressive about the way children learn vocabulary.
- (A) They learn words before they learn grammar
  - (B) They learn even very long words.
  - (C) They learn words very quickly.
  - (D) They learn the most words in high school.

## Passage 2

Scientists estimate that about 35,000 other objects, too small to detect with radar but detectable with powerful Earth-based telescopes, are also circling the Earth at an altitude of 200 to 700 miles. This debris poses little danger to us on the Earth, but since it is traveling at average relative speeds of six miles per second, it can severely damage expensive equipment in a collision. This threat was dramatized by a cavity one-eighth of an inch in diameter created in a window of a United States space shuttle in 1983. The pit was determined to have been caused by a collision with a speck of paint traveling at a speed of about two to four miles per second. The window had to be replaced.

As more and more nations put satellites into space, the risk of collision can only increase. Measures are already being taken to control the growth of orbital debris. The United States has always required its astronauts to bag their wastes and return **them** to Earth. The United States Air Force has agreed to conduct low-altitude rather than high-altitude tests of objects it puts into space so debris from tests will reenter the Earth's atmosphere and burn up. Extra shielding will also reduce the risk of damage. For example, 2,000 pounds of additional shielding is being considered for each of six space-station crew modules. Further, the European Space Agency, an international consortium is also looking into preventive measures.

1. Which of the following would be the best topic for the passage?
  - (A) The Problem of Space Debris
  - (B) The Space Shuttle of 1983
  - (C) The Work of the European Space Agency
  - (D) A Collision in Space
  
2. It can be inferred from the passage that debris was harmful to one of the space shuttles because the debris was
  - (A) large
  - (B) moving very fast
  - (C) radioactive
  - (D) burning uncontrollably
  
3. What effect did orbital debris have on one of the space shuttles?
  - (A) It removed some of the paint
  - (B) It damaged one of the windows
  - (C) It caused a loss of altitude
  - (D) It led to a collision with a space station
  
4. The word "them" in line 13 refers to which of the following?
  - (A) Astronauts
  - (B) Wastes
  - (C) Tests
  - (D) Crew modules
  
5. Which of the following questions is NOT answered by the information in the passage?
  - (A) How can small objects orbiting the Earth be seen?
  - (B) What is being done to prevent orbital debris from increasing?
  - (C) Why is the risk of damage to space equipment likely to increase?
  - (D) When did the United States Air Force begin making tests in space?
  
6. Where in the passage does the writer mention a method of protecting space vehicles against damage by space debris?
  - (A) Lines 1-3
  - (B) Lines 6-8
  - (C) Line 9
  - (D) Lines 13-15

### Passage 3

Bacteria are extremely small living things. While we measure our own sizes in inches or centimeters, bacterial size is measured in microns. One micron is a thousandth of a millimeter a pinhead is about a millimeter across. Rod shaped bacteria are usually from two to four microns long, while rounded ones are generally one micron in diameter. Thus if you enlarged a founded bacterium a thousand times, it would be just about the size of a pinhead. An adult human magnified by the same amount would be over a mile (1.6 kilometers) tall.

Even with an ordinary microscope, you must look closely to see bacteria. Using a magnification of 100 times, one finds that bacteria are barely visible as tiny rods or dots. One cannot make out anything of their structure. Using special stains, one can see that some bacteria have attached to them wavy - looking "hairs" called flagella. Others have only one flagellum. The flagella rotate, pushing the bacteria through the water. Many bacteria lack flagella and cannot move about by their own power while others can glide along over surfaces by some little understood mechanism.

From the bacterial point of view, the world is a very different place from what it is to humans. To a bacterium, water is as thick as molasses is to us. Bacteria are so small that they are influenced by the movements of the chemical molecules around them. Bacteria under the microscope, even those with no flagella, often bounce about in the water. This is because they collide with the water molecules and are pushed this way and that. Molecules move so rapidly that within a tenth of a second the molecules around a bacterium have all been replaced by new ones even bacteria without flagella are thus constantly exposed to a changing environment.

1. Which of the following is the main topic of the passage?

- (A) The characteristics of bacteria                      (B) How bacteria reproduce  
(C) The various functions of bacteria                      (A) How bacteria contribute to disease

2. Bacteria are measured in

- (A) inches                      (B) centimeters                      (C) microns                      (D) millimeters

3. Which of the following is the smallest?

- (A) A pinhead    (B) A rounded bacterium  
(C) A microscope    (D) A rod-shaped bacterium

4. According to the passage, someone who examines bacteria using only a microscope that magnifies 100 times would see

- (A) tiny dots    (B) small "hairs"  
(C) large rods    (D) detailed structures

5. The relationship between a bacterium and its flagella is most nearly analogous to which of the following?

- (A) A rider jumping on a horse's back                      (B) A ball being hit by a bat  
(C) A boat powered by a motor                      (D) A door closed by a gust of wind

6. In line 17, the author compares water to molasses, in order to introduce which of the following topics?

- (A) The bacterial content of different liquids  
(B) What happens when bacteria are added to molasses  
(C) The molecular structures of different chemicals  
(D) How difficult it is for bacteria to move through water