Metacognitive Consciousness and Reading Comprehension

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Abstract. This study investigates the comprehension monitoring process of native Arabic speaking readers who read one Arabic passage and one English passage. Thirty-two third grade secondary school students were the subjects of the study. Fourteen students were classified as proficient readers and 18 were classified as less proficient readers. Their think-aloud protocols were tape recorded and marked by two Arabic language and English language teachers who were trained by the researcher for this purpose. The discussion of the comprehension monitoring process included two language-based problems — one consisted of looking for the referent of a pronoun, and the other consisted of difficult vocabulary. The think-aloud protocol's three phases and six steps were defined as: the evaluation phase (problem recognition, finding the source of the problem), the action phase (forming a strategic plan, attempting a solution), and the checking phase (checking and revising solutions). The results showed that proficient readers could carry out the process successfully, while less proficient readers could not. This indicated that successful monitoring was correlated with reading proficiency, not language proficiency. The subjects were able to monitor the vocabulary problems better than the referent problems. Proficient readers acted similarly in both the Arabic and the English passages, as did less proficient readers. Proficient readers performed in the English passage better than in the Arabic passage in the final phase (checking and revising solutions).

Introduction

We understand from previous research that the reading process usually goes unnoticed in reading classes. Most reading teachers do not know exactly what their students are thinking about when they are reading. In addition, they also do not know the problems students are having, if the students are utilizing effective strategies to overcome these problems, or if they are successful in implementing these strategies in solving their problems [1].

Solving reading problems requires full monitoring of reading comprehension to evaluate students' reading processes in order to identify problems, and to devise strategies to take corrective action. This monitoring is part of the metacognitive process.

This study undertook the investigation of comprehension monitoring to find out how it works for Arabic native speakers who read in their native language and in English as a foreign language. No studies that I know of have been conducted to discern how comprehension monitoring works for Arabic speaking students. This study will also attempt to discover the similarities and differences in the metacognitive processes between reading in Arabic, the reader's native language, and reading in English, a foreign language.

The importance of this study relates to the idea that comprehension monitoring is an aspect of metacognition, encompassing those skills and behaviors which enable readers to evaluate whether they are understanding what they are reading, and aiding readers in determining what actions to take and how to implement them[2]. These behaviors and skills consist of the ability to evaluate the effectiveness of their comprehension, planning how to solve problems with comprehension, and using strategies in order to increase comprehension. Instructing this type of behaviors and skills should be embraced by reading teachers.

Research shows that most reading teachers think that reading instruction involves teaching only vocabulary, grammar, and concepts, so they concentrate on these elements in their instruction. As a result, students develop poor study and reading habits. This type of instruction leads students nowhere, and the students who learn to read in this way are less proficient readers because they tend to think of reading in a limited way [3]. Students who receive this kind of instruction also spend more time interpreting difficult words, even if the meaning is clear. Their overall reading process is constrained by these limitations [1;4]. Teachers who implement this type of instruction erroneously think that effective reading is correlated with high language proficiency, however that is not true. Effective reading instruction must equip students with the reading skills necessary for them to read critically, retain main points and details, integrate and synthesize information, and recall information from their own general knowledge. If readers lack these skills, they will not be able to comprehend successfully[6]. He suggests that constructive reading instruction should focus on such cognitive components as coordination of attention, memory, and perceptual and comprehension processes. These skills require dynamic reading, with students actively monitoring comprehension, so that they can plan, predict outcomes, and consistently improve their performance. This monitoring process is called "metacognition" [1].

The significance of the current study relates to Block's statement that "[With] the thoughts that wander or rush through the minds of readers, the reader searches and struggles for meaning, [and] the reflections and associations are hidden from the outside observer. Yet, this struggle and search for control are the core of reading comprehension" [4,

p.463]. Because this study used think-aloud protocol, readers' thoughts and methods for deriving meaning from the text are explored, and the problems can be addressed. Furthermore, this study will attempt to provide some insights for teachers and educators to use when designing reading programs, based on the actual problems that readers face in their struggle for meaning. Such a study will also be important in illuminating the nature of the reading process: How does it work and what does it include?

Literature Review

A review of the literature shows that in outdated views of teaching reading utilized to date, readers passively read texts in order to assimilate the ideas contained in them. This view has been challenged by recent language and reading theorists. Even the debate over whether learning to read is a bottom-up language-based process, or a top-down knowledge-based process has ceased. Most reading theorists and researchers have reached the collective opinion that these two processes interact with each other [6-10]. In addition, recent research into the reading process has emphasized the strongly held idea that students' ability to read effectively is affected by the degree that students monitor their comprehension, and that proficient readers are those who are able to monitor their comprehension so they can anticipate the difficulties they will face[11]. Some researchers admit that recent research has done little to explore what mechanisms control comprehension monitoring [1;12]. Block studied how 25 college freshmen used the comprehension monitoring process in dealing with referent problems and difficult words. That researcher discovered that proficient readers, whether they were L1 or L2, tended to evaluate their comprehension, take action to solve comprehension problems, and checked the effectiveness of their action. This process was found to be more successful with referent problems than with vocabulary problems. The less proficient readers were not as successful in monitoring comprehension.

The literature indicates that the differences occurring in level of comprehension monitoring are more attributable to reading proficiency than to language proficiency [8]. These problem-solving strategies which enable students to read effectively are regarded part of "metacognition" [13].

Reading proficiency requires utilization of strategies that make students better readers — students who don't learn to read, but read to learn. These strategies, which are called metacognitive strategies [14], could be taught to students to enhance their reading and to efficiently monitor their comprehension. Considering the gaps in the research on comprehension monitoring, continuing research is vital to improve reading instruction. Thus we must further explore these processes if we want to know how comprehension takes place [15].

Some researchers have analyzed comprehension monitoring, and found that it is facilitated by a number of actions [4]. Readers must learn to anticipate content. If they are

reading analytical text, they must distinguish between main points and supporting details, ask questions about what they read, make inferences, and use their general knowledge. Also, they may paraphrase, reread aloud or silently when necessary, and question the meanings of words and sentences they do not understand. Reading instructors must pay close attention to comprehension monitoring, which is called "a neglected essential" [15, p. 283], because by focusing on it, reading teachers will be able to get a clearer picture of students' problems, judgments and decisions. This will help teachers to know whether their students have the necessary cognitive resources, such as the skills required to read for tests, to know how to regulate learning activities, and to distinguish relevant points from irrelevant ones. If we do not know what is going on in our students' minds, we cannot help them succeed in monitoring comprehension. We need to design reading programs whereby students can learn how to employ techniques which allow them to use reading strategies subconsciously, and equip them with the ability to perceive when there is a problem which blocks their comprehension. Those tools will enable them to take corrective action so that the flow of comprehension is unbroken. The problem is that even if the students identify a problem, most of them do not know how to solve it. Outdated reading curricula do not increase their awareness or understanding, or develop skills needed to solve their reading problems and become efficient readers. Reading is not merely learning grammar, vocabulary or answering comprehension questions. Teaching these language features does not make students more skillful readers.On researcher said: "The need for teaching reading as a skill rather than to limit the role of reading to reinforcing grammar and vocabulary is evident" [8, p. 353]. How students think, plan, predict, and construct meaning not from the page, but from their minds, is what matters because meaning of a text resides not on the page the readers are reading, but in the readers' minds [16;17]. They are the ones who create meaning. There is no meaning until a reader decides that there is one. We have also learned from research that reading is often taught in a way that suggests to students that a particular idea is fixed and definite, while reading is actually knowing how to interpret the text [18-20]. Readers should engage in a dialogue with the text, which includes questions and answers. In order for students to learn all of these techniques we must know what is going on in their minds [21].

A new trend in research on the metacognitive process has emerged, enlightening researchers as to how students think when they read. This research is important because it deals directly with what is going on in readers' minds while they are reading. Few of these studies have been conducted, and I know of no studies conducted with Arabic speaking subjects. Block asserts: "We know little about the processes that L2 readers use to monitor or evaluate their comprehension and to repair gaps in comprehension, or about the cues to which they attend in this evaluation and regulation process" [1, p. 322].

So we see from scrutinizing previous studies that research involving comprehension monitoring is very important. This type of research reveals the problems readers encounter while reading and helps educational planners to construct reading programs based on scientific data.

We also understand that little has been discovered about how readers monitor their comprehension when they read in a foreign language. Also, this review of literature reveals that no studies compare readers with Arabic as first language with those with English as foreign language, and do not detect whether there is difference between the strategies used by students proficient in Arabic versus those proficient in English. This conclusion was the motivation for this study.

As a limitation of the study, we must be careful not to generalize its findings to non-native speakers whose native language is not Arabic.

Purpose of the Study

The purpose of this study is to analyze the comprehension strategies used by Arabic speaking students reading in Arabic and in English. Also examined were the differences between the strategies used when they read in their native language versus when they read in English as a foreign language. In addition, a comparison will be made between strategies used by more proficient versus less proficient readers.

This analysis was conducted by investigating the participants' comprehension monitoring. Think aloud protocol was used to examine the particip ants' comprehension monitoring processes.

Methodology

Subjects

This type of study requires two groups: one group which is proficient and another which is less proficient, in both the participants' native language and in their foreign language. In order to obtain valid results, participants' reading levels in each group must be comparable in both languages [4]. To obtain comparable reading levels in both languages in each group, the reading ability of all 86 native Arabic speakers enrolled in a secondary school in Jeddah, Saudi Arabia, studying at the third level was judged in conformance with similar previous research, such as the studies conducted by Block, who says "the ESL participants... selected were judged by their reading teachers [4, p. 466]. Therefore, four reading teachers (two Arabic language teachers and two English language teachers) were recruited to help in the preparation and the actual collection of the data. To ensure complete reports, the researcher constructed a training program, instructing the teachers for five days, two hours a day, in the application of the think-aloud protocol and its requirements. Examples from previous studies were handed out and discussed during this training period. After the researcher was assured that the four teachers had a clear idea about the focus of the study, he asked them to judge the reading ability of all 86 students for the purpose of forming the final two groups. As a result of the four teachers' judgments, 14 out of the 86 students were found to be the most comparable proficient

readers, and 18 out of the 86 students were found to be the most comparable less proficient readers. These 32 students were the participants used in this study. A pilot study was conducted to familiarize the students with the procedure to be followed during the course of the study, and to uncover any problems that might arise in the actual conduct of the study. Furthermore, we took advantage of the fact that the teachers and the subjects spoke the same native language in eliciting the subjects' responses in Arabic while they were reading. This was done to avoid Block's concern that participants might be unable to convey in their second language exactly what their thought processes were [1].

Materials

There are two methods of choosing passages for this type of study. One of them is the traditional method which was used by some researchers [22], where inconsistencies or errors were planted in the passage. This method gives the researcher little concrete information on whether readers perceive the inconsistencies or problems that have been planted in the text [1]. For this reason, another recent method which was used by Block was used in this study. Unlike the above method, this one does not require inconsistencies or errors to be planted in the passages, but it does require that two conditions be met. The first is that the passages should have a readability level matching that of the subjects. The second is that the passages should include certain types of problems, thus allowing the researcher to explore and compare the comprehension processes used by the students in reading the two passages. For this study, subjects were exposed to two types of problems: locating appropriate referents for certain pronouns and defining some unknown and unfamiliar words.

The above criteria were discussed with the four teachers, each of whom received a full background report about the nature of this study and its requirements during the training program. After the training period, the researcher discussed with the teachers the criteria that the materials should meet. Then, after several passages in each language were discussed, two passages, one each in Arabic and English, which meet the above mentioned conditions were selected. The Arabic passage was entitled "Towards a Literary Future" and was taken from the book Education and Culture which was assigned by the Ministry of Education for the secondary school's libraries [23]. This book was checked out from the participant's school library. The English passage was chosen from the participant's reading textbook [24]. The researcher and the teachers discussed and rated these two passages and came to a consensus that they met the two required conditions.

The Think-aloud Task and Description of Data Collection

The think-aloud protocol technique was utilized to investigate the participants' comprehension monitoring process. This technique was developed by Newell and Simon [25] and has been used in similar studies in English language comprehension [26-31].

Think-aloud examinations were conducted on the 32 secondary school third level subjects which form two groups. One group is composed of fourteen subjects which were designated as proficient readers and 18 were designated as less proficient. The students were trained in how to do the think-aloud task. In each of the two passages a red dot was placed at the end of each sentence to remind students to stop and verbalize everything they were thinking at that point. Subjects were also warned against overexplaining or overanalyzing their thoughts. If the subjects were silent for a relatively long time, they were asked what they were thinking about. Their responses were recorded with a tape recorder and later transcribed for analysis. Using these responses, the researcher investigated how participants monitored their comprehension when they experienced two language-based difficulties: finding appropriate pronoun referents and defining unknown words. Both the Arabic passage and the English passage included difficult referents and vocabulary.

In the English passage, for example, referent problems involved indefinite pronouns. The second paragraph starts with *This*, which does not have a specific referent (i.e., "This is not the first time that the Holy Mosque has been expanded"). Another example in this passage is in the last paragraph, which starts with the phrase "In addition to *this*...," which refers to a number of things the "expansion" includes. This level of difficulty in referents and vocabulary was appropriate for the participants' current proficiency level. For the Arabic passage, the referent problem involved a connected pronoun whose referent ("our country") was mentioned in the previous paragraph. This type of pronoun usually creates a problem for readers.

Vocabulary problems were words unknown to the students. For the English passage, the words "worshippers," "custodian" and "annex" were unknown. The words "foundation" and "expansion" were unfamiliar to them due to their derivational nature. In the Arabic passage, one expression and three difficult words were chosen, which were expected to give the students problems. Careful consideration was given to the sentences containing these referent and lexical problems, in order to facilitate the study of participants' comprehension monitoring process.

The comprehension monitoring process included three phases and six steps.

Phase One: Evaluation
     A - Problem recognition
     B - Source identification

In this phase, participants evaluated their comprehension, and recognized that they were experiencing problems in understanding the sentence. Their recognition of the problem's source was either expressed explicitly ("This step is problem recognition"), or implicitly by attempting a solution. Also, some readers explicitly identified the source of

the problem by expressing it in a statement: "I don't know the referent of *this* in the sentence." "*This* is the first time that the holy..." This step is called "source identification."

Phase Two: Action Phase
    A - Strategic plan
    B - Solution attempt

Once participants recognized the problem, some of them reported a plan explicitly in a statement. For example, when some of them didn't understand the referent of "this," they said "I will read the previous sentence to see what 'this' refers to." Others just jumped implicitly to the next step, "solution attempt," and reread the previous sentence without saying what they were doing. Most of the proficient readers and a few of the less proficient readers completed these initial phases successfully.

Phase Three: Checking Phase
    A - Check solution
    B - Revise solution
This phase is aimed at making sure that the solutions reached were appropriate.

These three phases and six steps comprised the successful method proficient readers used to monitor their comprehension. This study is consistent with Block, the results showing that successful accomplishment of the process's three stages depends not on whether a reader is proficient in language, but on whether the reader is a proficient reader [1].

Data Analysis

Monitoring the Referent Problem

After the responses of the participants were transcribed from tapes, the data showed that most of the proficient readers (PRs) evaluated, then took an action (see Table 1 for summary of participants' responses to referent problems in Arabic and English). This suggests that the proficient readers were able to accomplish the process successfully. In addition, some proficient readers were able to verbalize each step of the process explicitly. That was true both in reading in Arabic as their native language and in reading in English as a foreign language. The less proficient readers (LPRs) varied in their level of control over the various stages of this process. Some of them recognized the problem, but could not identify the source. Others identified the problem, and its source, but could not arrive at a solution. The third group of LPRs accomplished the first two phases (evaluating, and taking an action) but could not check or revise the action they took.

Table 1. Process of monitoring referent problems in the English and Arabic passages.

Think aloud protocol steps	Readers							
	English passage				Arabic passage			
	PRs (n = 14)		LPRs (n = 18)		PRs (n = 14)		LPRs (n = 18)	
	%	n	%	n	%	n	%	n
I Evaluation								
Problem recognition	100	14	50	9	100	14	50	9
Source identification	100	14	50	9	100	14	50	9
II Action: Strategic plan	100	14	33.3	6	100	14	38.9	7
Action: Solution attempt	100	14	38.9	7	100	14	5.6	1
III Check: Check solution	85.7	12	0	0	71.4	10	0	0
Revise solution	57.1	8	0	0	71.4	10	0	0

PRs = Proficient readers
LPRs = Less proficient readers

Proficient readers

As shown in Table 1, all 14 PRs recognized that they had a problem and identified the problem's source related to the indefinite pronoun *this*. The responses of the PRs to this problem varied. Some of them expressed their confusion explicitly and verbalized what they would do as a strategic plan. Here are some examples of this group's responses:

[1] "I am looking at *this*. What does it mean? I am reading the previous paragraph."

[2] "Maybe *this* refers to something in the other paragraph" [He pointed to the previous paragraph.] "I have to read it again."

[3] "*This* may be related to something in the previous or in the next paragraph. I have to read it again."

Others recognized and identified the problem in an implicit way. They just paused after they had finished reading the sentence. When they were asked what they were thinking about, their responses showed that they had trouble understanding the referent of *this*. The 14 PRs had strategic plans. Some of them verbalized the plan. Others just executed it without verbalizing it explicitly. Most PRs (13 of 14) took action, but the action they took was similar to the action Block's participants took [1]. This action was limited to either looking back to the previous sentence or reading the next sentence to look for the referent of *this* ("the holy mosque expansion"). This type of action was limited in that it did not always result in solving the problem or give the information the readers were seeking. One student in the PR group did not take an action, nor did he solve the problem of the referent *this*. This student said:

[4] "I don't know *what* this means. Maybe if I read the previous paragraph [strategic plan] I will understand what *this* means." That is all he did; he did not accomplish his plan.

Also most of this group (11 of 14) checked their solutions. Some of the 11 checked their solution by using their previous knowledge of the big project of the holy mosque expansion. One student said:

[5] "I know about the expansion of the holy mosque. It was a big expansion."

Others checked their solutions with the information in the text:

[6] "The previous paragraph was about the holy mosque expansion and it was not the first expansion. It is clear."

Members of both groups who checked their solutions with their previous knowledge and with the information in the passage arrived at the correct referent of *this*. Among the PR group, 10 out of 14 revised their solutions. These 10 made a connection between *this* and the previous paragraph. One student pointed to the previous paragraph and said:

[7] "The whole thing in here [pointing to the previous paragraph] is a referent of *this*. *This* means the new addition and laying the foundation stone."

Another student substituted "expansion" for the word *this* to revise his solution. He said:

[8] "It means that this expansion is not the first one."

These are two examples of the best revision attempts. The next eight students mixed the "check" step with "revise" step by making connections between *this* and the previous paragraph. Those eight gave explanations of the referent of *this* and commented on their explanations in such a way as to satisfy themselves with the solutions they arrived at. One student said "*This* means the whole expansion. The answer was given in the previous paragraph. It is clear that this expansion is not the first one." Only 10 PRs completed the process satisfactorily despite the limitations in responses during the monitoring process.

For the Arabic passage, the data showed that PRs followed the same basic monitoring process with some differences. The strategic plan used by the PRs in the Arabic passage was more explicit than in the English passage. The PRs verbalized their plans before they took an action, while in English they sometimes carried out the plan without verbalizing it. Another difference is that 12 of 14 of them checked their solution in the English passage, while 10 of 14 checked their solution in the Arabic passage. In revising the solution, eight of 14 revised their solution in the Arabic passage. A third difference was that it was easier for the PRs to recognize the problem and identify its source in the Arabic passage than in the English passage.

As in the English passage, in the Arabic passage all 14 PRs recognized the problem, identified the problem's source, had a strategic plan, and took some action. The data

showed no difference in the strategies used by the PRs to search for the referent in both passages. The same "look-back" strategy was used by the participants in reading both the English and the Arabic passages. The following are some examples of the search for the referent in the Arabic passage:

[9] "The referent is not clear. I think it is not in this paragraph. [Pauses and looks back at the previous paragraph. He reads it silently, then says] This paragraph is talking about literature in our country."

One student was quite rapid in understanding and synthesizing the information. He said:

[10] "This paragraph is talking about our country [solve]. It refers to the main idea which is literature in our country [check]. We can substitute the pronoun with 'our country' and the sentence becomes clearer [revise]."

All 14 PRs were able to recognize the referent, some with brief hesitation. Others were confused for a time, but eventually succeeded in arriving at the right referent. Another student was able to synthesize the information of both paragraphs. This strategy enabled him to understand the referent easily. He said:

[11] "This paragraph is a continuation of the previous paragraph in which the topic is improving literacy in our country. This pronoun must refer to [our country]." Most of the PRs (10 of 14) checked and revised their solutions. The data showed that the number of the PRs who checked their solution in the English passage is higher than the number in the Arabic passage (12 versus 10). But the number of PRs who revised their solution in Arabic was higher. It was noted that the checking phase with its "check" and "revise" steps are difficult for readers to process. These two steps require some training to be accomplished successfully.

Despite the fact that these 14 students were proficient readers, they experienced some problems in accomplishing the monitoring process. For example, the strategy they used to identify the specific referent consisted of merely looking back to the previous sentence or previous paragraph. Their ability to evaluate and regulate their comprehension was very limited. Furthermore, most of the 14 PRs experienced some trouble in utilizing their general knowledge to check their solution, especially when they were reading the English passage. They used the information in the text they were reading to check their solution. This is consistent with some research [16], namely that ESL readers experience difficulties when recalling information related to the text they are reading.

If we look at the entire group of 32 students involved in this study, it is shocking to find that only 14 students were proficient readers. Only 10 students (31.25% of the total number) were able to check and revise their solutions.

Less proficient readers

As shown in Table 1, nine of 18 less proficient readers (LPRs) recognized the referent problem and identified its source when reading the English passage and the Arabic passage. This number constitutes 50% of the less proficient readers. It seems that problem recognition and identification of the source of the problem were the easiest part of the comprehension monitoring process. Once the students get down to the action phase, the process becomes more difficult, and when they get to the checking phase with its "check" and "revise" steps, the process becomes even more challenging. The current study proves this notion. In examining Table 1 we find that six of 18 LPRs had a plan, most often in an implicit way. The same is true for the Arabic passage, where seven of 18 LPRs had a plan in an implicit way. They did not verbalize the strategic plan; they just carried it out in an action. The action step shows the difference between reading in Arabic and reading in English. Seven of 18 LPRs took an action in reading in English, while surprisingly only one of the 18 took an action. One student pointed to the specific problem and identified its source without going through a difficult search. He also verbalized his action this way:

[12]   "I am reading the previous paragraph again to look for the referent. I think the paragraph is talking about poetry... no... about old age... no... about our country... yes... it is our country."

The action taken by these seven students was a limited look-back. They looked to the previous sentence or to the previous paragraph and most often when they looked back, they usually could not focus on the precise problem. They had only a general idea of the problem. None of the 18 LPRs were able to either check their solutions or revise them.

As we have seen, this study shows that most of the LPRs did not employ the monitoring process at all. It also shows that the employment of the monitoring process is related to the degree of reading proficiency. With regard to monitoring the referent problem, the more proficient readers were able to recognize the problem, identify its source, take an action to solve the problem, and check their solution. Some of the proficient readers were able to verbalize their strategic plan, and others planned in an implicit way.

Also with respect to the referent problem, this study also shows that the readers designated as proficient employed the monitoring process nearly uniformly in reading in their native language and in reading in a foreign language. This is not, however, to imply that this finding should be applied to all L2 students without further research.

During the process of collecting data through the think-aloud protocol, we found that less proficient readers who lacked resources tended to ask questions more often than to verbalize what they were thinking about while reading both passages. They also tended to be silent, and when they were asked what they were thinking about, they just reread the sentence they were reading silently, or aloud. Some of the LPRs demonstrated this behavior while reading both the English and the Arabic passages.

We also noticed that some LPRs were hesitant, confused and lacking confidence. They were frequently seeking help from their teachers. Their lack of the resources needed to accomplish the monitoring process was the main cause.

Monitoring vocabulary problems

During preparation for this study there was a discussion with the teachers who participated about comparing vocabulary processing by native Arabic speakers of the English passage with that of the Arabic passage. It was thought that students would not have problems in processing vocabulary in the Arabic passage since they were native Arabic speakers. This study did not prove this notion, perhaps because the words chosen in both passages were unknown to the students. In the English passage the word "annex," which appears in the third paragraph, was chosen for the analysis and discussion since it provided a good example of an unknown word, and thus we did not expect the students to immediately grasp the meaning . For the Arabic passage another word unknown to students was chosen, a word which means "failure". It was also thought to be a good example since we expected it to be unknown to most of the readers.

Table 2. Process of monitoring vocabulary problems in the English and Arabic passages

Think aloud protocol steps	Readers							
	English Passage				Arabic Passage			
	PRs (n = 14)		LPRs (n = 18)		PRs (n = 14)		LPRs (n = 18)	
	%	n	%	n	%	n	%	n
I Evaluation								
Problem recognition	100	14	44.4	8	100	14	66.7	12
Source dentification	100	14	38.9	7	100	14	61.1	11
II Action: Strategic plan	100	14	22.2	4	78.6	11	44.4	8
Action: Solution attempt	92.9	13	22.2	4	92.6	13	5.6	1
III Check: Check solution	78.6	11	5.6	1	64.3	9	0	0
Revises solution	71.4	10	5.6	1	35.7	5	0	0

PRs = Proficient readers

LPRs = Less proficient readers

Proficient readers

The data showed that proficient readers (PRs) used the monitoring process almost the same way in both the Arabic and the English passages. As in processing the referent problem, PRs were able to recognize the problem and identify the source, but had a limited strategic plan, most often in an implicit way.

As shown in Table 2, all 14 PRs recognized the problem, and identified the word "annex" as its source. All of them also looked back to the previous sentence in an attempt to clarify the meaning of this unknown word from the context. One reader quickly reached

the meaning through relating the word "annex" with the word "built" that followed it:

[13] "The word 'built' indicates that 'annex' is a building added to the mosque, a new building."

Another reader also verbalized his plan explicitly, accomplished the plan which consisted of rereading the sentence, and discerned the meaning easily. But not all the PRs processed at this level. Some readers did not explicitly verbalize their plans. Others took some time to look back, reread, and proceeded to the next sentence looking for clues.

All 14 PRs had a plan, usually consisting of looking back at previous text. Some of them verbalized this plan. Others just looked back to the previous sentence(s) without explicitly saying they were. Most PRs (13 of 14) took an action to solve the problem. Here are some examples of some responses from the PR group:

[14] "[Plan] I will read the sentence again. [Solve] I think the word 'addition' in the sentence defines the word 'annex.' [Check] The word 'annex' is the new building and the expansion the previous sentence is talking about. They want to enlarge the mosque."

[15] "[Solve] The whole sentence is talking about enlarging the mosque. A new building was added. [Check] The numbers in the previous sentence indicate that a new building was built to accommodate more worshippers. It is clear."

In the checking phase 11 out of 14 checked their solutions. As in processing the referent problem, readers used the text information, not their general knowledge, to check their solutions. Ten of 14 revised their solutions to make sure it was the correct one. The PRs were able to follow these steps (evaluation, action and checking) when processing the referent problem.

One difference between processing for the referent and vocabulary problems in this study was that PRs found it easier to process the vocabulary problem than the referent problem. The PRs were able to utilize the text information and to synthesize the lexical information to discern the meaning of the unknown words. In referent processing, they found it more difficult to search for since it was not found in the same paragraph.

For the Arabic passage, all 14 PRs were also able to recognize the problem and identify its source, and 11 of the 14 had a plan. Unexpectedly, this revealed that there was a larger number of PRs who had a plan in processing the English passage (14 readers) than of those who had a plan in the Arabic passage (11 readers). As shown in Table 2, this was also true for the checking phase.

Eleven of the 14 PRs checked their solution in the English passage while nine checked their solution in the Arabic passage. Ten of the 14 revised their solutions in the English

passage while five revised their solution in the Arabic passage. Thirteen PRs took action in both passages.

The differences in planning, checking and revising methods between the passages revealed in this study may be due to the fact that the knowledge of the proficient readers about the English language is focused and more complete. Another reason may be that the readers were more relaxed when they read in their native language than they were when reading in a second language, and this may have made them less attentive to the task. This was not true of the LPRs.

It was noted that a few PRs, when reading both passages, automatically undertook all the steps of the three phases (evaluation, action and checking) and carried out the routine strategies (predict, check, confirm) successfully. These readers were able to synthesize information to clarify the meanings of difficult words. One proficient reader commented after he had read the first sentence in the third paragraph:

[16] "This sentence is talking about making an expansion, the same topic the previous two paragraphs were talking about. I think a new building will be added."

He confirmed his prediction after he had read the third sentence in the third paragraph when he said:

[17] "The new expansion will large be enough for 14,000 people to pray. It will be a big expansion." [Check and Revise]

Another proficient reader was able to connect the word "annex" with the word "expansion" and the numbers in the third paragraph. He said:

[18] "The word 'annex' must be related to 'expansion' [solve]. The number 361,111 m^2 and 1,000,000 in the third paragraph indicates the meaning of 'annex'." [Check and Revise]

The same two students processed the Arabic passage in a similar way for the word "failure." He connected the phrase "will be saved" that precedes the word "failure." He said:

[19] "We usually save someone who is in trouble or failed at something." [Check, Solve]

He also checked his solution by connecting the word "failure" with the word "optimistic" in the last sentence of the first paragraph. He said:

[20]   "We are optimistic when we are not successful." [Check]

It was also noted that readers in both passages paused at every difficult word and insisted in finding out its meaning, even if the meaning of the sentence was clear. All the readers without exception were afflicted with this problem. One reader commented: "The sentence is very clear, but I don't understand the meaning of 'custodian'."

In this study utilizing these two passages, proficient readers varied in their ability to carry out the comprehension monitoring process. Some recognized the problem and identified its source quickly; others took more time. They had different strategic plans for solving, checking and revising their solutions. Some derived their responses using information from the text, and few used their general knowledge. All the PRs had a limited look-back strategic plan. Overall, the PRs had less trouble dealing with lexical problems than with the referent problems.

Less proficient readers

The LPRs were more successful in processing vocabulary problems in the Arabic passage than in the English passage. This may be because they were native Arabic speakers. Reading proficiency was not expected to be a factor in this difference. A summary of the results can be seen in Table 2.

As shown in Table 2, a larger number of less proficient readers recognized the problem, identified its source, and had a plan in the Arabic passage than in the English passage. Twelve of the 18 subjects recognized the problem in the Arabic passage while eight did so in the English passage. Eleven of the 18 subjects identified its source in the Arabic passage while seven did so in the English passage. Eight of the 18 subjects had a plan in the Arabic passage while four had one in the English passage. However, four of the 18 subjects solved the problem in the English passage while only one did so in the Arabic passage. Also, one checked and revised his solution in the English passage while none did so in the Arabic passage.

This study shows that the reading comprehension process of the LPRs is extremely ineffective. They spent a long time trying to process the lexical problems. They also lacked the resources to evaluate, act on, and check their solutions. In reading the English passage LPRs did not understand the general meanings of sentences or paragraphs. Most concentrated on unimportant words and ideas. One could easily see that they were hesitant, confused and lacked confidence, and that their thought processes were haphazard. They were also more quiet than the PRs and complained often about difficult words. One student said:

[21]   "There are a lot of difficult words whose meanings I don't know. This passage is very difficult."

Most responses of the LPRs were framed as questions. In both the English and Arabic passages they often paused and reread sentences, and asked many questions. When they were asked to look back to the previous sentence for clarification or to guess a word's meaning they gave an incorrect answer. One student said:

[22] "The previous sentence has nothing to do with this sentence."

Another student was asked to connect the word "failure" with the word "save" that preceded it, a strategy used by one proficient reader, and he could not derive the meaning. His response was: "There is no connection. I don't understand."

This was not the case for the proficient readers, who were able to make connections between related words, synthesize information from the text, and read preceding and following sentences to seek solutions. Unlike the LPRs, the PRs were more easily able to tell when a problem existed, and searched the text for clues to solve it. In agreement with Block's study, the current study demonstrates that vocabulary problems do not interfere with readers' understanding [1]. If the meaning of a sentence was clear, PRs tended to ignore the difficult word(s). Also when they had a problem, they had a clearer idea of what the problem was and focused more clearly on it. The LPRs did not have a clear idea of what the problems were or how to solve them. Following the steps of the comprehension monitoring process was extremely difficult for the less proficient readers.

Conclusions and Implications

This study set out to investigate the comprehension process used by native Arabic speakers reading in their own language and reading in English as a foreign language when dealing with referent and vocabulary problems. Despite the presence of slight differences, the data showed that they process similarly in each language, suggesting that proficient readers can employ effective strategies while reading in either language. The study also showed that differences in the subjects' comprehension monitoring process were due to reading proficiency level, not to language proficiency level. Of course, language proficiency factors are crucial components in determining reading comprehension, but reading proficiency involving cognitive factors plays a more significant role in reading comprehension. This does not support the findings of Yorio which showed that language proficiency leads to proficient reading [32].

This study investigated the comprehension monitoring process of 32 Arabic native speakers (14 proficient and 18 less proficient readers) who read one English passage and one Arabic passage. Three phases (evaluation, action and checking) and six steps (problem recognition, source identification, strategic plan, solution attempt, checking and revision) of the process were identified. Some of the readers completed the process completely and successfully; others did not. Some carried out the process explicitly; others implicitly.

The complete process was utilized more often when solving vocabulary problems than with referent problems in both the Arabic and English passages. As in Block's study, the more proficient readers were able to verbalize their strategic plans and to check their solutions, while some less proficient readers within the proficient group planned and checked their results in an explicit way [1]. Readers in general found it easier to deal with vocabulary problems. However, the results show that the process operated more effectively in the English passage than in the Arabic passage in checking the solution with respect to referent problems, and in checking the solution and revising the solution with respect to vocabulary problems. The reason may be that readers' knowledge about the English language was limited and more focused. Some readers could write and think better in English than they could in Arabic. Another reason may be that they receive better English reading instruction than Arabic.

A third expectation may be that readers paid more attention because they were less relaxed when reading in a foreign language than they were when they read in their native language. Additional studies should be conducted to address this issue.

The differences in comprehension monitoring were attributable to differences in reading proficiency. This study showed that proficient readers evaluated their level of comprehension, took an action, and checked their results better than less proficient readers in both languages. Proficient readers were better able to understand the general meaning of each sentence, focus on important ideas, and solve vocabulary problems. They also picked up key words, synthesized information from the text, and understood language complexities more effectively than the LPRs. Less proficient readers were lacking confidence, more hesitant, and quieter than PRs. The comprehension process was not taken to completion among the less proficient readers with respect to both the language based problems and referent and lexical problems.

Proficient readers tended to focus only on the key words, disregarding difficult words that did not interfere with the meaning of sentences or paragraphs. Less proficient readers tended to focus on every difficult word, whether it was important or not. When readers were asked to explain the meaning of what they read, proficient readers discussed key ideas, while less proficient readers either discussed less important ideas or reread the text aloud. Proficient readers were able to check their answers with information in the text, and some were able to check their answers using their own general knowledge. The less proficient readers were not able to synthesize information from the text, nor were they able to utilize their own general knowledge because they lacked the necessary skills. None of the proficient readers had difficulty in recognizing problems or identifying their sources, and they used the look-back strategy as a limited way to solve the problems.

I noted that in responding to questions about the text, less proficient readers asked questions instead of explaining their thought processes. When less proficient readers were

able to ascertain problems, they did not know how to solve them. They were unable to define a solution and execute it. In short, they did not use the comprehension monitoring process completely or effectively. These results are consistent with several studies [1;5;14;33], namely that there is a difference between evaluating reading comprehension and regulating it.

The results of this study will be valuable to educational administrators and English teachers. Instead of constructing reading programs and curricula based on guesswork or speculation about students, we should focus on solving those problems that readers themselves verbalize. This study, using the think-aloud protocol, makes us aware of the problems that readers actually encounter. No reading method or curriculum in the world can create proficient readers if it does not take into account the actual problems that readers encounter. Moreover, we should teach readers to rely on themselves in solving their reading problems.

Reading instruction in our schools should shift the focus from language-based instruction that emphasizes teaching meanings of specific words, phrases and concepts, to more process-based instruction. This study showed that readers who focus on language and grammar are less proficient, and are unable to analyze their comprehension process successfully. Instead, readers who have concrete reading strategies are able to synthesize information to identify referent problems and guess meanings of difficult words from context. They are also able to recognize problems more easily, identify their sources, devise strategic plans, make decisions to carry out the plans, and check and revise solutions. Process-oriented instruction will enable readers to acquire reading techniques and strategies which will enable them to interpret text without any outside help. This should be the goal of any reading program. Readers, using this kind of process-oriented program, will be able to monitor their comprehension more effectively, and if they encounter any problems, they will be better able to solve them. Reading teachers should stop reading for their students and teach their students how to rely on themselves to do their own reading. Reading teachers also need to stop focusing on language components in their teaching and concentrate on equipping their students with the resources needed to make students self-sufficient, proficient readers.

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وعي القدرات العليا والاستيعاب في القراءة

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ملخص البحث. تهدف هذه الدراسة لتقصي كيفية تحكم الطلاب العرب في استيعابهم عندما يقرؤون نصين، أحدهما باللغة العربية والآخر باللغة الإنجليزية كلغة أجنبية. شارك في هذه الدراسة ٣٢ طالبا يدرسون بالصف الثالث الثانوي في إحدى المدارس الثانوية، أربعة عشر طالبا منهم صنفوا كطلاب أكفاء في قراءاتهم وثمانية عشر طالبا غير أكفاء. استخدم مقياس «التفكير بصوت مسموع» بمراحله الثلاث وخطواته الست التي تتضمن تقويم الفهم (التعرف على المشكلة ومعرفة مصدرها)، ومحاولة الحل (وضع خطة الحل)، ومراجعة الحل (المراجعة والتنقيح) للتعرف على مدى قدرة الطلاب في التحكم في استيعابهم عندما يصادفون نوعين من المشكلات اللغوية هي: مرجعية الضمير والكلمات الصعبة. بينت هذه الدراسة أن القراء الأكفاء يستطيعون التحكم في استيعابهم بنجاح. فهم قادرون على معرفة المشكلة عندما يصادفونها ومعرفة مصدرها، ووضع خطة للحل، والبدء في الحل، ومراجعة الحل وتنقيحه. بينما القراء الغير أكفاء لا يستطيعون ذلك، وهذا مؤشر على أن التحكم في القراءة يتأثر بمدى فعالية القارىء في القراءة وليس بمستواه في اللغة.

كما بينت الدراسة أن القارىء الفعال يستطيع حل مشكلات الاستيعاب المتعلقة بالكلمات أفضل من استطاعته حل مشكلات الاستيعاب المتعلقة بالضمائر وذلك في لغته الأساسية ولغته الأجنبية. كما بينت الدراسة أن جميع القراء الأكفاء متساوون في أدائهم، وجميع القراء الغير أكفاء أيضا متساوون في أدائهم في قراءة النصين العربي والإنجليزي. وبينت الدراسة أن القراء الأكفاء أبدوا مقدرة على الأداء في النص الإنجليزي فيما يتعلق بالمرحلة الثالثة المتعلقة بمراجعة الحل بخطوتيه المراجعة والتنقيح تفوق مقدرتهم في النص العربي. أما المرحلتان الأولى والثانية، فأداء القراء متساو في النصين العربي والإنجليزي.