Changes in Awareness of Academic Reading Strategies among Arab Medical Students

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Abstract

This study investigates reading strategies reported by Arabic-speaking medical students studying for the MD degree through the medium of English. As a follow-up to an earlier comparison of reading strategy awareness among students at beginning and more advanced years of study, this paper presents some quantitative results from a questionnaire administered to a longitudinal sample of students, in first year in the original study, now in their third year of medical school. In addition, some data from interviews with selected students from this group describe the changes they experienced in their academic reading practices over the years of study and what they attributed these changes to. In general, students in the higher years reported less dependence on strategies that involve translation and thinking in both Arabic and English, as well as greater use of the metacognitive strategies of skimming for information and predicting text content. The interview data also showed the growing influence of students' envisaged futures as physicians in focusing their academic reading.n

Keywords: English for medicine; metacognition; Arabic-speaking medical students; reading strategies; English for academic purposes

Introduction

The recent emphasis on investigating context in language learning, as well as the spread of English as a global language in many fields, including the academic, has led to a renewed interest in discovering how non-English speaking students around the world cope with the demands of studying through English in their subject area.   Thousands of learners in foreign-language settings routinely engage in acquiring the content they need for their particular field of specialization, mostly through the medium of English written texts (Bernhardt, 2003).   It has long been recognized that "reading is probably the most important skill" (Grabe, 1991, p. 375) in academic contexts, and the ability to read English efficiently and effectively is a fundamental requirement for those intending to pursue a profession such as medicine, where much of the research literature produced is in English as well as many of the most widely-used texts (Maher, 1986).   In the Gulf Arab region, the push to upgrade the education systems with its resulting proliferation of tertiary level institutions, has led to the problem of Arabic-speaking students having to deal with reading loads similar to those expected in English first language settings, often with little experience or training in English language and reading skills. How students handle these reading demands and find a way succeed in their medical studies at Arabian Gulf University (AGU) in Bahrain, where I have taught first year medical students for many years, is the subject of the present study.   Although located in Bahrain, AGU is a Gulf Cooperation Council (GCC) supported institution, thus it has an intake of students from each of the GCC countries, with the majority coming from Bahrain, Saudi Arabia and Kuwait. The AGU medical college also follows a problem-based approach (PBL), so students meet in small group tutorials from the second year onwards, while first year has a more traditional lecture based format of basic science, English, and social science lectures.

This paper is a follow-up to a questionnaire-based study which investigated reading strategy awareness of 160 medical students in the first and third years of their study

(Malcolm, 2009). It was found that all students reported using metacognitive reading strategies at a high level, while the main differences between more and less proficient and more and less experienced (i.e. third year contrasted to first year) readers was in their use of the support strategies of translation and thinking about content in both Arabic and English. The questionnaire was subsequently re-administered to a small group of third year students who had participated as first year students at the time of the original study, and a number of these participants were interviewed about their perceptions of the changes in their reading strategy awareness and reading practices over the intervening years. Thus, the purpose of the present study was to provide some longitudinal data for the investigation of reported differences in reading strategy use and to add a qualitative perspective to the quantitative results.

Literature review

The original focus of reading strategy research was to describe the behaviour of successful and unsuccessful readers, whether in their own language (L1) or another language (L2). One key question is whether reading proficiency is related to language proficiency or reading ability (Alderson, 1984; Carrell, 1991). In other words, how much is the ability to read effectively in another language hindered by low language proficiency, and what is the contribution of a mature reader's first language reading ability to their reading ability in an L2? Research by Clarke (1979, 1980) focused on the question of whether reading ability is transferred from L1 to L2, especially among mature readers in academic settings and concluded that low levels of L2 English proficiency "short-circuited" Spanish L1 readers processing abilities, leading them to revert to "bottom up" strategies (such as word by word translation). Studies on the relative contribution of language proficiency and L1 reading ability (e.g. Carrell, 1991; Bossers, 1991; Davis & Bistodeau, 1993; Bernhardt and Kamil, 1995) have been inconclusive in supporting either factor as the major contributor to successful reading comprehension, while Bernhardt (2003) has pointed out that only 50% of variance in reading

performance can be accounted for by both L1 literacy and linguistic knowledge, and she asks what the other 50% can be attributed to. One area that is of particular relevance for the present study is the role of background knowledge or expertise in a content area. As summarized in Grabe (2009), research to date has shown a weak effect for specialist knowledge on L2 reading comprehension, although research suggests that readers with both greater language proficiency and greater background knowledge will comprehend specialized readings more effectively. Usó-Joan (2006), for example, found that a low level of linguistic ability can be compensated for by a high level of discipline-related knowledge. Thus, English for special purposes (ESP) students may be advantaged in their reading by their knowledge of their area of specialization, as found by Alderson & Urquhart (1988), for example.

Reading strategy research

In addition to language proficiency and background knowledge, strategic reading processing has also been found to be a factor in reading success (Barnett, 1988; Carrell, 1989; Mokhtari & Sheorey, 2002; Sheorey & Mokhtari, 2001). Studies have shown that proficient readers are more able to think about, monitor and evaluate their reading processes than less proficient readers (Baker, 2008; Carrell, 1989; Casanave, 1988; Pressley & Afflerbach, 1995). What appears to differentiate effective L2 readers from poor ones is their approach to tackle reading problems as they arise, drawing on their strategic reading knowledge to construct meaning from texts.   These metacognitive reading skills involve consciously monitoring one's reading, recognizing when problems arise and evaluating the relative success of reading strategies employed.

A questionnaire used to investigate metacognitive awareness of L2 reading strategies, the survey of reading strategies (SORS), was originally developed by Mokhtari and Sheorey to investigate L1 English reading strategies in American school and later applied to ESL and L1 English college level readers (Sheorey & Mokhtari, 2001; Mokhtari &

Sheorey, 2002).   Subsequent studies by Sheorey and his colleagues in a number of EFL settings (see Mokhtari & Sheorey, 2008) have concluded that mature, college level EFL readers are aware of a wide variety of strategies and are comparable to native English readers of a similar background and educational level.

The survey of reading strategies (SORS)

The SORS divides reading strategies into global, problem-solving and support strategies (Mokhtari & Sheorey, 2002).   Global strategies are defined as "intentional, carefully planned techniques" such as having a purpose in mind, and using graphic aids to understanding, which they interpret as metacognitive strategies; problem-solving strategies are "localized, focused techniques" for dealing with specific problems, such as adjusting reading rate, and re-reading (cognitive strategies); support strategies are intended to aid the reader with text comprehension, by, for example, using a dictionary, highlighting and thinking about the information in both languages.

Rationale for the present study

Reading strategy studies have mostly been done cross-sectionally, rather than longitudinally; thus we have little understanding of at what point in an L2 reader's development the higher-level processing skills kick in, so to speak, or how and why certain low-level processes endure. What is lacking most of all is an indication of how L2 academic reading strategy use develops over time, according to purpose, in readers of different levels of maturity and proficiency, different L1 and cultural backgrounds, and whether there are any patterns to this progression that can help us understand what it means to become a proficient L2 reader. In addition, there are few reading strategy studies of learners studying through the medium of English in EFL settings, and even fewer of Arabic-speaking readers, particularly those studying medicine in their home countries.

Studies of the development of L2 reading and its relation to reading strategies in real-life academic settings are also needed, particularly since academic success is so closely linked to reading proficiency, and readings continues to provide the main source of content input in post-secondary academic institutions around the world. Thus, this study aims at investigating the extent to which reported reading strategy use changes over time, without the benefit of specific training, as a natural feature of studying in English. While the original research study compared reading strategy awareness as reported by students at two different years of study at Arabian Gulf University in Bahrain, the present study is guided by the following research questions:

> 1. Do Year Three medical students of different initial proficiency levels report using the same reading strategies in Year Three of their medical studies as they previously reported using in Year One?

> 2. In cases where there are substantial differences in reported strategy use over the years of study, to what do individual students attribute these differences?

In other words, this paper reports longitudinally on reports of reading strategy use from a sub-sample of students initially surveyed in Year One when they reached Year Three.

Results

Comparison of questionnaire results for the same students in Years One and Three
In order to examine further the relationship between year of study, initial English proficiency level and reported reading strategy awareness, the SORS was re-administered to some of the same students who had taken it in Year One, two years later, when they were in Year Three. This administration included an information page including open-ended questions about any problems they had reading in English for their studies, and if so, how they solved them. The information sheets, along with both English and Arabic versions of the SORS were distributed at the end of a Year Three academic lecture. Because there were not many students attending the lecture, some

questionnaires were also given directly to individual students in tutorial sessions later. Reliability for the SORS as used in this part of the study was Cronbach's alpha .764. Thirty-two usable questionnaires were returned and were analyzed using ANOVA for overall frequencies and averages and Spearman rank order correlations for rank ordering of strategies.   Table 1 shows the demographic and gender breakdown of students in the comparison group.

Table 1: Same Students in Year One and Year Three: Nationality and Gender

Nationality	*Male*	*Female*	*Total*
Bahrain	3	11	14
Kuwait	1	4	5
KSA	4	8	12
UAE	--	1	1
TOTAL	8	24	32

Although it is a small group, it may be considered representative of the overall demographic breakdown at Arabian Gulf University (AGU), as the two largest groups in any intake – Bahrainis and Saudis– are well represented. Initial proficiency level for this group on an in-house paper-based TOEFL type exam administered shortly after entry to the university varied widely as well, ranging from 660 to 353. Ten students had initial scores on the in-house TOEFL exam of 500 and above. Eight scored below 420, so initially were in a low proficiency group. The remaining 16 students had initial TOEFL scores of between 420 and 500. There is a majority of female students in this group, higher than the typical 2:1 female to male ratio in the college, which may affect some of the findings.   However, a separate analysis of differences in reading strategy awareness

according to gender (Malcolm, 2010) found that, in general, female students at AGU did not differ greatly from males in reported reading strategy awareness.

Table 2 shows the reported reading strategy results for the comparison group. Students reported using all reading strategies at a high level in both Years One and Three. In fact, reported strategy use was higher (>3.5) for more strategies in Year Three than Year One (21 compared to 18 in the high use range). The average use of all metacognitive strategies increased from the medium range (3.37) to high (3.65). Overall reported strategy use was slightly higher in Year Three. Two metacognitive strategies, *skimming to note text characteristics* and *confirming predictions* were reported to be used considerably more in Year Three by this group. While average overall reported metacognitive strategy use was not much different from Year One to Year Three, there was an increase in reported use of 11 of the 13 statements in this category. Students reported *translating* and *thinking about information in both Arabic and English* considerably less in Year Three (3.38 versus 2.53; 3.84 versus 2.81), with averages in these reported strategies dropping from the high range to medium. These differences are shown in bold type in Table 2 below.

Table 2: Differences in Reported Reading Strategy Use by the Same Students in Years 1 & 3 [N=32]

		Year One		Year Three	
Name	*Strategy*	*Mean*	*SD*	*Mean*	*SD*
Meta1	Setting purpose for reading	3.66	0.94	3.81	0.82
Meta2	Using prior knowledge	3.81	1.15	3.88	0.83
Meta3	Previewing text before reading	3.5	1.14	3.72	1.02
Meta4	Checking how text fits purpose	2.97	1.18	3.19	1.03
Meta5	**Skimming to note text characteristics**	**2.78**	**1.50**	**3.88**	**0.98**

Meta6	Deciding what to read	3.63	1.10	3.5	1.11
Meta7	Using text features (e.g. tables)	4.09	1.09	4.06	1.01
Meta8	Using context clues	3.59	1.13	3.75	0.76
Meta9	Using typographical features	2.88	1.19	3.38	1.29
Meta10	Critically evaluating	2.69	1.23	3.19	0.90
Meta11	Checking understanding new information	3.84	0.95	3.91	0.82
Meta12	Guessing text meaning	3.06	1.19	3.31	1.03
Meta13	**Confirming predictions**	**2.72**	**1.19**	**3.38**	**1.34**
Cog1	Reading slowly and carefully	4.03	1.06	3.91	0.78
Cog2	Trying to stay focused	4.50	0.80	4.09	0.99
Cog3	Adjusting reading rate	4.03	1.09	4.09	0.99
Cog4	Paying close attention	4.53	0.62	4.22	0.79
Cog5	Pausing and thinking about reading	3.31	1.09	3.69	0.86
Cog6	Visualizing information	3.88	0.98	3.78	0.91
Cog7	Re-reading difficult text	4.19	1.03	4.22	0.94
Cog8	Guessing meaning of difficult words	3.63	0.79	3.91	0.86
Sup1	Taking notes	3.03	1.31	3.41	0.98
Sup2	Reading aloud difficult text	3.30	1.48	3.13	1.34
Sup3	Underlining, circling information	4.19	1.06	4.04	1.28

Sup4	Using reference materials (dictionary)	3.75	1.16	3.56	0.88
Sup5	Paraphrasing	3.88	1.18	3.84	0.92
Sup6	Going back and forth in text	3.25	1.02	3.75	1.02
Sup7	Asking myself questions	3.03	1.49	3.50	1.14
Sup8	**Translating into Arabic**	**3.38**	**1.26**	**2.53**	**1.22**
Sup9	**Thinking about information in both English and Arabic**	**3.84**	**1.08**	**2.81**	**1.26**
MRS	Metacognitive reading strategies	3.37	0.42	3.65	0.36
CRS	Cognitive reading strategies	4.02	0.45	3.98	0.49
SRS	Support reading strategies	3.48	0.58	3.39	0.45
ORS	Overall reading strategies	3.57	0.42	3.65	0.36

Cognitive reading strategies remained the highest-ranked group of reported strategies from year One to Three, while there was a difference in ranking of metacognitive strategies. These had been lowest ranked in Year One, but moved to the second rank in Year Three. This movement to greater awareness of metacognitive strategies mirrors the difference between Year One and Four students in the original analysis. Support strategies, on the other hand, moved from second to lowest ranked by Year Three.   It appears that by Year Three, students report the same higher use of metacognitive strategies, and less use of the support strategies relating to translation and thinking about information in both languages that was noted in the original study for students in Year Four.

Table 3 shows the rank order of reported reading strategies for the same students who took the SORS in Years One and Three. There was little difference in rank for the most frequent strategies, as the same cognitive strategies were near the top of the rankings in each year. However, differences were more apparent in the bottom rankings, especially strategies relating to translating and thinking about information in both Arabic and English, which were bottom ranked by the students in Year Three. Rank order for the two groups was significantly correlated (r_s .770, p<.01).

Table 3: Reading Strategies Reported Being Used *MOST and LEAST* by the Same Students in Years 1&3 (N=32)

		Year One			Year Three
1	*Cog4*	*Paying close attention*	*Cog7*	*Re-reading difficult text*	
2	*Cog2*	*Trying to stay focused*	*Cog4*	*Paying close attention*	
3	*Cog7*	*Re-reading difficult text*	*Cog2*	*Trying to stay focused*	
4	*Sup3*	*Underlining, circling information*	*C3*	*Adjusting reading rate*	
5	*M7*	*Using text features (e.g. tables)*	*M7*	*Using text features (e.g. tables)*	
6	C1	Reading slowly & carefully	Sup3	Underlining, circling information	
7	Cog3	Adjusting reading rate	M11	Checking understanding new info.	
8	Sup5	Paraphrasing	C8	Guessing meaning of difficult words	
9	C6	Visualizing information	C1	Reading slowly & carefully	
10	M11	Checking understanding new info.	M2	Using prior knowledge	
11	Sup9	Thinking about info. in English/Arabic	M5	Skimming to note text characteristics	
12	M2	Previewing text before reading	Sup5	Paraphrasing	

13	Sup4	Using references (e.g. dictionary)	M1	Setting purpose for reading
14	M1	Setting purpose for reading	C6	Visualizing information
15	C8	Guessing meaning of difficult words	M8	Using context clues
16	M6	Deciding what to read	Sup6	Going back and forth in text
17	M8	Using context clues	M3	Previewing text before reading
18	M3	Previewing text before reading	C5	Pausing and thinking about reading
19	Sup8	Translating into Arabic	Sup4	Using references (e.g. dictionary)
20	C5	Pausing and thinking about reading	M6	Deciding what to read
21	Sup6	Going back and forth in text	Sup7	Asking myself questions
22	M12	Guessing text meaning	Sup1	Taking notes
23	Sup7	Asking myself questions	M9	Using typographical features (e.g. bold)
24	Sup1	Taking notes	M13	Confirming predictions
25	Sup2	Reading aloud difficult text	M12	Guessing text meaning
26	*M4*	*Previewing text before reading*	*M10*	*Critically evaluating*
27	*M9*	*Using typographical features*	*M4*	*Checking how text fits purpose*
28	*M5*	*Skimming text characteristics*	*Sup2*	*Reading aloud difficult text*
29	*M13*	*Confirming predictions*	*Sup9*	*Thinking in Arabic/English*
30	*M10*	*Critically evaluating*	*Sup8*	*Translating into Arabic*

Written responses of the same students in Years One and Three.

In addition to completing the SORS, the students in the comparison group filled out an information sheet indicating their English reading background, their self-rated reading ability and written responses to questions about any difficulties they had with reading. The majority of those responding to the background questionnaire had only studied English as a school subject, and not used it outside the class. On a 6 point scale (as used in Sheorey & Mokhtari, 2001) the majority rated their current reading ability as a fairly modest four. Thirteen of the students commented that they had had problems reading but had overcome them, in most cases. Eight mentioned translating a lot by using a dictionary, especially at the beginning. However, they wrote that they had overcome this problem with time, by reading more and through changing their study methods. One stated he ignored difficult words, and looked for the whole meaning.   Two male students mentioned reading slowly as their only problem.

Interviews with selected students

Five students from the repeating group were also interviewed about how their reading had evolved from the time they entered the university.   Table 4 gives an overview of their average scores on the two administrations of the SORS, their self-rated reading proficiency and initial TOEFL scores. All names given are pseudonyms. Student comments are transcribed verbatim, including any grammatical errors.

Table 4: Interviewed Students Who Did the SORS in Years One and Three

	Name	Nationality	Reported strategy averages								Self-rated reading proficiency*	Initial TOEFL
			Meta Y1	Meta Y3	Cog Y1	Cog Y3	Sup Y1	Sup Y3	Tot Y1	Tot Y3		
1	Abdulla	Bahraini	3.5	3.7	3.4	4.5	3.1	3.3	3.4	3.8	5	--
2	Salma	UAE	3.2	3.8	2.9	4.1	3.2	3.3	3.1	3.8	4	513
3	Farah	Bahraini	3.2	3.9	4.4	3.6	3.9	3.4	3.7	3.7	-	537
4	Suha	Bahraini	3.5	4.1	4.8	4.6	3.9	4.4	3.8	4.3	6	583
5	Hamza**	Saudi	-	4.3	-	3.8	-	3.7		4	4	520
*on a 6 point scale, 6 being the highest												
** Year One scores were unobtainable												

As can be seen from the table, the students who were interviewed had high initial TOEFL scores, and self-rated their reading proficiency as good to excellent (4 to 6 on a 6 point scale).

One student, Hamza, was included as a representative of the Saudi national group, even though his first year scores were unavailable. He said he remembered doing the SORS in Year One but perhaps his survey was discarded because of incomplete answers. He was very keen to participate in an interview and go over his scores on the questionnaire he did in Year Three, so his comments are also noted below. On the background questionnaire they filled out along with the SORS, four of the five participants said they had done some

of their reading in English, apart from English classes in school, so were more experienced in reading English before entering AGU. However, Hamza stated he had never used English outside his required English classes at school.   Three of the interviewed students commented in writing that they had had problems with reading English at AGU: Suha wrote if she had a problem with a word she didn't know just looked it up in the dictionary, while Salma wrote she had problems at the beginning that were overcome as her reading in English increased. Hamza wrote that he had problems in Year One with phrases, because he couldn't know the actual sentence meaning. This problem was solved by *"more reading and seeing movies"*. On the other hand, in Years Two and Three he said the only thing he should improve was his vocabulary.

 These students were selected for interviewing because of substantial changes in their averages of reported reading strategy use from Year One to Three, partly in order to see if these changes reflected real differences in reading strategies, or if there were other reasons for the differences, such as misunderstanding the question or interpreting it in a different way than intended

(cf. Sakui & Gaies, 1999). In all but one case, their overall reading strategy average scores increased from Year One to Year Three. The most notable increase among all four students was in the metacognitive strategy averages, which were higher in Year Three. All students had already consented to participate in follow-up interviews when signing a consent form before doing the SORS, but these five were also contacted individually for their agreement. The interviews were tape-recorded in the researcher's office and later transcribed for analysis. All the interviews were conducted in English.

 Changes in reading behavior reported by interviewed students from Years One to Three

During the interviews, the students were shown their results on the SORS and asked if they had any comments on them. They had no specific comments about particular items

(except in the case of Hamza, discussed below), but did have some general comments on the changes they felt had taken place in their reading practices.

Translating/Dictionary use

All interviewed students had some comments about differences in translating and/or using the dictionary from Year One to Year Three. Suha's remarks are typical:

> *"…first year I used the dictionary more often…Even [though] I didn't use it that much, but the [other] girls were using it for every single word. But now I don't use it at all."*

Abdullah also used to translate more in his first year, but came up with a different strategy later:

> *"I believe it [translating] is time-consuming…you have to find other ways. So I tried to figure out the meaning for objects, or maybe I collect a bunch of these words and go and ask my professor. That's an easier way and it gives you not just the definition, it gives you some application of this word. … It gives you an example, more than the dictionary. I think uh using dictionary was a skill that I learned in my high school. It is not necessary now."*

Salma also stated that she used the dictionary less now but had used it in Year One in spite of having good general English skills because, *"when I came here first most of the words I knew are basic words, not medical terminologies."* Hamza also translated much less in Year Three, and now used an English-English dictionary, as well as an English medical dictionary. When I asked him why he had put 5 (always) for the support strategy *"thinking about information in both Arabic and English"* he said he disagreed with that answer, and would change it. But he elaborated:

"I think when I speak in Arabic, I always think about English words. I feel like it's better for me to speak in English rather than Arabic…when I talk to some people with my own language in Saudi and my family four, three words should be in English, because I'm now missing Arabic…now I don't read any books in Arabic and I always in the university I talk in English, all my studying is in English, you know?"

In spite of being quite competent in English when entering the university, all the interviewed students noted an initial dependence on translation, particularly for medical words, and less use of [bilingual] dictionaries as they gained experience reading their academic texts. The constant use of English for their studies also affected the use of Arabic, both in and out of the university, for at least one student.

Different purposes for reading

Another theme that emerged in response to the question, "*How do you think your reading has changed since Year One?"* was different purposes for reading, which led to changes in reading strategies.   Salma put it like this:

"[in Year One] it was just different…it wasn't problem-based, you know. Now in Year Two and Three you read about something and then you find more about it yourself; you ask a doctor. You try to solve the problem. You don't just read. It's not just about reading." When I asked her what she meant, she explained, *"In Year One it was just about the reading [content] so that when the exam came, you would be able to…you were always thinking about the exam, but now [you're thinking] how are you going to use it clinically, apply it, later on."*

Hamza echoed this perception:

"I have a strategy, you know? Because I don't always concentrate on exams, I concentrate in how I can apply this when I go to hospital and later on…."

In Year One Salma spend a lot of time re-reading:

> *"Sometimes I repeat reading the paragraph but I don't get the idea. Now, I can read the paragraph and find the key words - immediately."*

When I asked her how this came about, she said, *"It's time and repeated reading. The more you read, the better you become."* She also agreed that in Year One she was trying to pass the exams, but:

> *"in year three you're now you're trying to be a doctor. You have to know the right information. You have to understand it, to not make mistakes, because peoples' lives may depend on it."*

When I asked Abdulla why he thought his scores overall were so high on the SORS, he replied,

> *"That's what they train us to do here at this university… to go and look for the specific answer in the book to save some time and give you a focus on the reading. …They give us a lot of material in a very short period of time, so you have to adapt to that in some way."*

Here it must be clarified that in the problem-based learning (PBL) approach to medical education used at AGU, students meet in small group tutorials where they are introduced to a medical problem, decide on objectives to investigate this problem, research their assigned objectives individually and report back to the group in the following tutorial session. He further explained how the problem-based method affected his reading.

> *"You have to figure out what you need to fulfill the objectives, the objectives they give us each week. I always put them in front of me, then I have it like a check, "Oh, I read that, I didn't read that…"*

It took him a while to figure out how to deal with this system, as he stated,

> "*I'm in third year. It's like my last semester now but I'm still improving my reading habit. I mean, I'm not fully happy with it. It is a long process, but it is…fruitful.*"

Farah also admitted in Year One:

> "*I was reading everything. It was difficult because [it was in] English but as I studied much of that I feel [was] to bring good marks. … Now it's different… now I want to study the important things, I mean the basic things. Not too deep because when you study too deep, too much information, you will get mixed [up].*"

When asked how she knew what was important, she said, "*By experience. In Year Two it was harder for me because I didn't know how to choose information. Now it's different.*" She explained how she discovered how to choose information:

> "*I can ask other students; also I will use the books that I understand. If the book has hard vocabulary I will waste my time and I will not understand anything, because I'm translating all the special words. So I use the easy books for people like me, my age. Not for specialized.*"

She had had a problem in Year Two because of the method:

> "*… the learning needs they put for us* [a list of references students are given by their tutors for each problem]*…some of the books are for specialized, for later when you go Year Five, Year Six or maybe after graduate. That was my biggest problem in Year Two. I feel like if I didn't study from the book that contained all the information then maybe I will not know enough. But then I saw myself that I had short time.*"

While in Years Two and Three these medical students are challenged to find accessible sources and balance their time with the demands of the material, in Year One their main concern was with reading to remember the content that would enable them to pass exams. But Farah mentioned another advantage to reading in Year One:

> *"it was better for me to improve my language, [because in school] I studied it in Arabic. In school we studied only like words [in English classes] but not from science; like story vocabulary. So this is why it [her reading problem] was only vocabulary."*

She also said she had to look up these words, in spite of having a good general English vocabulary, *"because this scientific words, but the information I know it in my language."*

Scientific and technical vocabulary is seen as the main impediment to reading effectively in Year One, accounting for the dependence on translation, while the later years are taken up with strategies for finding the most effective way of managing reading in order to understand as much as possible in the time available. As time goes by, the need to study for exams becomes secondary to understanding how to apply content knowledge to real-life medical practice. These study needs affect choice of reading strategies, thus it is possible that the high totals reported in Year Three reflect these changing needs, something that is not captured just by looking at the numerical averages.

Advice for new students about their reading practices

Drawing on their own experiences as Year One students, and what they observed in other, possibly less fluent English speakers, I asked the participants how they would advise new students entering AGU to handle the challenge of reading and studying in English for the first time. Farah did not discount the role of memorizing, *"I think it's good to memorize at the beginning, to understand the words and everything, to learn how*

to use the words. But then that will change…" Thus, she advocates using the dictionary a lot at the beginning, but in Year Two they should ask other students which books are the best to study from, as:

"you don't have time to use a dictionary and specialized books they will mention things

that you didn't study yet and you get confused a little bit in understanding."
According to Abdullah, new students should:

"Practice. Practice is the key, and also being creative. You have to find your own way. Not just copying other students. They may study better than you or they have high strategies. Everyone should develop his own. I believe I…at a certain point I was trying to copy from other students' strategies but it doesn't work. It is very stressful. It doesn't fit my circumstances, my abilities, so I growed my own way and it's working for me."

 He thinks new students also cannot be advised, but have to discover their own system:

"The professors in Year One, they already told us, they emphasize on it, "you don't have to know everything, you don't have to know everything, but it's like…it should be self-evident. You have to prove it to yourself."

He attributes some students' need to memorize everything to previous training. In high school, he says:

"they actually train the students to memorize everything, reproduce everything without going into processing this information. There is no testing skill that you gained, just like a phrase you read, a name you memorized; without application."

As to improving their reading, he believes students should be *"motivated from within. The students on their own should be motivated to gain this skill. If he believed it's going to help them."* According to Abdulla, each student has to discover this alone, even if

they go through some hard times to get there. For Farah, studying in English is a good way to improve reading. As she put it:

> *"The best way to improve your English is reading. Just reading. That's how they taught us earlier in school...just to read and read stories as much as you can."*

However she said, *"now, I'm more interested in learning than reading stories…stories are all in medical."* These students emphasize the need to keep on reading and persist through difficulties. In addition, they stress it is up to the individual to find the best way to read and manage their study reading, taking advice from other students without copying their reading behaviour, as it may not be effective for them.

Discussion

The results of the SORS questionnaire administrations, which included students of a wide range of initial English proficiency levels, show that overall metacognitive awareness of reading strategies increases, while use of translation declines from first to third year. Thus, the answer to the first research question, whether there are differences in reading strategy awareness from first to third year appears to be positive. What these differences may be attributed to, the second research question, is clarified through the interviews: changing purposes for reading and greater awareness of the future role of the medical professional. Nevertheless, as is the case with group results, they do not show the extent to which translation and memorization continue to play an important role for individual students.   According to Farah, for example, some students in upper years, *"still depend on this [memorizing] from the beginning… these students didn't improve their [English] language very much."* Salma also thinks some of her fellow students haven't mastered reading in depth, and still depend on reading *"handouts, outlines, just to pass the exam.*

You pass, but when you get to Year 5 and 6 you get into the real trouble.” The interviewed students had reasonably high proficiency in English when they began the medical programme, so presumably were already quite high strategy users. Missing from the interviews are students whose initial language proficiency was low, yet who succeeded in passing to third year. Without knowing the extent to which they share some of the beliefs and changes in reading strategies expressed here, it would be unfair to assume the opinions of these few students are shared by all. Nevertheless, it appears for this particular group of students, reading is both a language *and* a reading problem. As less experienced readers, in Year One, the emphasis was on comprehending scientific texts, mostly through acquiring a rich vocabulary in English in the field of study, relying greatly on translation as an initial strategy. As this aspect of reading becomes less important, and reading needs change in the upper years, strategies to deal with reading large quantities of text efficiently and effectively develop, guided by greater understanding and appreciation of the ultimate goal of the medical studies: becoming a competent medical professional. Thus, it appears that, when faced with the real life needs of studying for professional aims through the medium of English, Arabic-speaking learners gradually adapt to the changing demands of their academic readings.

Conclusion

In today's globalized world, where studying for academic purposes in tertiary institutions in non-English settings has become widespread, understanding how, and how well, students in these settings handle the considerable task of reading English scientific and technical texts has become more important than ever. Whereas the initial interest in reading strategy research was spurred by a desire to improve the *teaching* of reading strategies, a long term view of reading strategy development tends to show that initially, academic readers in specialized fields still rely greatly on first language resources, such as translation, strategies that are generally disapproved of by reading teachers. Yet, as the initial vocabulary barrier is overcome, these students are able to use those

metacognitive strategies related to planning and evaluating reading and handling reading problems that are usually the focus of L2 reading textbooks.   Explicit instruction in L2 reading is generally restricted to remedial or foundation English courses at the beginning stages of study, but it may be the case that enhancing student awareness of metacognitive strategies becomes more relevant at later stages. While the importance and timing of L2 reading strategy training is a matter of debate, it is encouraging to note that reading strategy awareness does appear to improve with experience and practice, enabling students in non-English settings to pursue their academic goals effectively and reach the professional goals they aspire to.

About the author

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